प्रगति प्रतिवेदन
PROGRESS REPORT
2019-20

गुणवत्ता
QUALITY

अखिल भारतीय समन्वित गेहूँ एवं जौ अनुसंधान परियोजना
AICRP on Wheat and Barley

भा.कृ.अनु.प.–भारतीय गेहूँ एवं जौ अनुसंधान संस्थान, करनाल
ICAR-Indian Institute of Wheat and Barley Research, Karnal

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All India Coordinated Research Project on Wheat & Barley

PROGRESS REPORT
2019-20

WHEAT QUALITY

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In the end, it is stated that although utmost care has been taken to avoid any error in presentation of the results in this report, any error/omission is unintended and may please be brought to the notice of the undersigned.

Dated: 25st July, 2020

(Sewa Ram)
Principal Investigator
(Wheat Quality)

Number of entries evaluated under Advance Varietal Trials

Station	Zone	Condition	No. of entries	
			T. aestivum	*T. durum*
Almora	NHZ	ITS, RTS, RILS	23	-
Shimla	NHZ	ITS, RTS, RILS	23	-
Malan	NHZ	ITS, RTS, RILS	23	-
Ludhiana	NWPZ	ITS, ILS, RITS	35	-
Hisar	NWPZ	ITS, ILS, RITS	35	-
Delhi	NWPZ	ITS, ILS, RITS	35	-
Pantnagar	NWPZ	ITS, ILS, RITS	35	-
Durgapura	NWPZ	ITS, ILS	26	-
Kanpur	NEPZ	ITS, RITS	12	-
Pusa	NEPZ	ITS, RITS	12	-
Sabour	NEPZ	ITS, RITS	12	-
Vijapur	CZ	ITS, ILS, RITS	17	6
Junagarh	CZ	ITS, ILS, RITS	17	6
Powerkheda	CZ	ITS, ILS, RITS	17	6
Indore	CZ	ITS, ILS, RITS	17	6
Pune	PZ	ITS, ILS, RITS	16	13
Dharwad	PZ	ITS, ILS, RITS	16	13
Niphad	PZ	ITS, ILS, RITS	16	13

Number of entries evaluated in National Initial Varietal Trials

Trial	Condition	Entries	Zone	Stations
NIVT 1A	ITS	36	NWPZ	Ludhiana, Delhi, Hisar, Pantnagar, Durgapura
			NEPZ	Pusa, Sabour, Varanasi , Kanpur
NIVT 1B	ITS	36	NWPZ	Ludhiana, Delhi, Hisar, Durgapura, Pantnagar
			NEPZ	Sabour, Pusa, Kanpur, Varanasi
NIVT 2	ITS	36	CZ	Indore, Vijapur, Junagarh, Powarkheda
			PZ	Pune, Niphad,
NIVT 3A	ILS	36	NWPZ	Ludhiana, Hisar, Pantanagar, Delhi, Durgapura
			NEPZ	Samastipur, Varanasi, Kanpur
NIVT 3B	ILS	25	CZ	Indore, Vijapur, Junagarh, Powarkheda
			PZ	Pune, Niphad
NIVT 4	ITS	25	CZ	Indore, Vijapur, Junagarh, Powarkheda
			PZ	Dharwad, Niphad, Pune
NIVT 5A	RITS	25	NWPZ	Ludhiana, Delhi, Hisar, Pantnagar Karnal
			NEPZ	Kanpur, Pusa, Varanasi
NIVT 5B	RITS	25	CZ	P'Kheda, Indore, Vijapur, Junagarh
			PZ	Dharwad, Niphad, Pune,
IVT	RFTS	16	NHZ	Almora, Shimla, Malan

Number of entries evaluated in Special Trials

Trial	Condition	Entries	Zone	Stations
HYPT		9	NWPZ	Karnal, Ludhiana, Hisar, Pantnagar, Delhi
Dicoccum	ITS	7	PZ	Dharwad, Pune, Wellington

Number of entries evaluated under Nurseries

Trial	Condition	Entries	Zone	Stations
QCWBN	ITS	52	NWPZ	Ludhiana, Delhi, Pantnagar, Karnal,Hisar
			NEPZ	Kanpur,Varanasi
			CZ	Vijapur, Indore
			PZ	Dharwad

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ADVANCE VARIETAL TRIALS

The traits recorded for different advanced trials were Grain Appearance Score, Hectolitre Weight, Grain Protein Content (on 12 % moisture basis), Grain Hardness Index, Sedimentation Value, Phenol test and Iron and Zinc content in both bread wheat and durum wheat and yellow pigment and yellow berry were additional traits recorded in durum wheat.

- The *T. aestivum* entries were tested under Irrigated Timely Sown (ITS), Rainfed Timely Sown (RTS) and Restricted Irrigated Late Sown (RILS) conditions in Northern Hills Zone (**NHZ**) and the data is given in tables 1-8.
- In North Western Plains Zone (**NWPZ**), the entries were tested under Irrigated Timely Sown (ITS), Irrigated Late Sown (ILS) and Restricted Irrigated Timely Sown (RITS) conditions and the data is given in tables 9-16.
- The trial was conducted under two conditions namely Irrigated Timely Sown (ITS) and Restricted Irrigated Timely Sown (RITS) in North Eastern Plains Zone (**NEPZ**) and the data is given in tables17-24.
- The *T. aestivum* and *T. durum*entries were tested under Irrigated Timely Sown (ITS), Irrigated Late Sown (ILS) and Restricted Irrigated Timely Sown (RITS) conditions in **Central Zone** and the data is given in tables 25-34.
- In **Peninsular Zone**,the *T. aestivum* and *T. durum*entries were tested under Irrigated Timely Sown (ITS), Irrigated Late Sown (ILS) and Restricted Irrigated Timely Sown (RITS) conditions and the data is given in tables 35-44.
- AVT, IVT and special trial entries including checks were evaluated for High Molecular Weight Glutenin Subunits (HMW-GS) encoded by *Glu-A1*, *Glu-B1* and *Glu-D1* loci and the data is given in tables 45-50.

Remarks: Grain hardness was measured from one centre of each zone.

Table 1: Grain appearance score (Max-10) of *T. aestivum* genotypes in Northern Hills Zone (NHZ) AVTs

S. No.	Entries	Code	Almora	Shimla	Malan	Mean
Irrigated Timely Sown						
1	HS 507 (C)	**1901**	6.0	6.2	6.0	**6.1**
2	HS 562 (C)	**1902**	5.8	5.8	5.2	**5.6**
3	HPW 349 (C)	**1903**	6.4	5.8	5.0	**5.7**
4	VL 907 (C)	**1905**	5.8	5.8	5.4	**5.7**
5	HS 668	**1904**	5.8	5.6	4.4	**5.3**
6	VL 2036	**1906**	5.8	5.6	5.6	**5.7**
	Mean		**5.9**	**5.8**	**5.3**	**5.7**
Rainfed Timely Sown						
1	HS 507 (C)	**1901**	6.0	5.6	6.4	**6.0**
2	HS 562 (C)	**1902**	5.8	5.8	5.8	**5.8**
3	HPW 349 (C)	**1903**	5.4	5.2	5.8	**5.5**
4	VL 907 (C)	**1905**	5.2	5.4	5.6	**5.4**
5	HS 668	**1904**	5.8	5.6	6.0	**5.8**
6	VL 2036	**1906**	5.4	5.4	5.8	**5.5**
	Mean		**5.6**	**5.5**	**5.9**	**5.7**
Restricted Irrigated Late Sown						
1	VL 892 (C)	**1908**	5.2	5.4	5.8	**5.5**
2	HS 490 (C)	**1910**	4.8	5.4	5.8	**5.3**
3	HS 681	**1901**	6.0	6	6.4	**6.1**
4	VL 3022	**1902**	5.6	5.8	5.8	**5.7**
5	HS 680	**1903**	5.6	5.8	6.0	**5.8**
6	VL 3023	**1904**	5.6	5.6	5.6	**5.6**
7	HPW 474	**1905**	5.4	5.4	5.8	**5.5**
8	UP 3069	**1906**	5.6	5.8	6.0	**5.8**
9	HPW 473	**1907**	5.6	5.4	5.4	**5.5**
10	VL 3024	**1909**	4.8	5.6	5.4	**5.3**
11	HS 679	**1911**	5.4	5.6	5.6	**5.5**
	Mean		**5.4**	**5.6**	**5.8**	**5.6**

Table 2: Hectolitre weight (Kg/hl) of *T. aestivum* genotypes in Northern Hills Zone (NHZ) AVTs

S. No.	Entries	Code	Almora	Shimla	Malan	Mean
Irrigated Timely Sown						
1	HS 507 (C)	**1901**	79.5	81.2	82.2	**81.0**
2	HS 562 (C)	**1902**	77.3	78.0	80.0	**78.4**
3	HPW 349 (C)	**1903**	79.0	79.5	79.7	**79.4**
4	VL 907 (C)	**1905**	77.8	77.6	79.0	**78.1**
5	HS 668	**1904**	79.3	81.0	77.0	**79.1**
6	VL 2036	**1906**	78.7	78.0	79.0	**78.6**
	Mean		**78.6**	**79.2**	**79.5**	**79.1**
Rainfed Timely Sown						
1	HS 507 (C)	**1901**	79.0	81.3	82.4	**80.9**
2	HS 562 (C)	**1902**	75.7	80.1	75.2	**77.0**
3	HPW 349 (C)	**1903**	78.0	80.0	78.0	**78.7**
4	VL 907 (C)	**1905**	77.0	79.5	77.5	**78.0**
5	HS 668	**1904**	79.5	82.5	74.5	**78.8**
6	VL 2036	**1906**	75.8	78.6	79.0	**77.8**
	Mean		**77.5**	**80.3**	**77.8**	**78.5**
Restricted Irrigated Late Sown						
1	VL 892 (C)	**1908**	79.0	78.6	81.0	**79.5**
2	HS 490 (C)	**1910**	74.3	74.0	76.5	**74.9**
3	HS 681	**1901**	80.0	78.5	82.0	**80.2**
4	VL 3022	**1902**	78.2	79.0	80.2	**79.1**
5	HS 680	**1903**	74.0	79.0	82.7	**78.6**
6	VL 3023	**1904**	72.8	75.3	76.0	**74.7**
7	HPW 474	**1905**	73.8	78.2	76.5	**76.2**
8	UP 3069	**1906**	73.6	77.0	77.0	**75.9**
9	HPW 473	**1907**	78.4	79.0	80.0	**79.1**
10	VL 3024	**1909**	71.0	75.2	77.2	**74.5**
11	HS 679	**1911**	76.0	79.0	79.0	**78.0**
	Mean		**75.6**	**77.5**	**78.9**	**77.3**

Table 3: Protein content (%) at 12% moisture basis of *T. aestivum* genotypes in Northern Hills Zone (NHZ) AVTs

S. No.	Entries	Code	Almora	Shimla	Malan	Mean
Irrigated Timely Sown						
1	HS 507 (C)	**1901**	9.6	9.9	8.9	**9.5**
2	HS 562 (C)	**1902**	9.5	6.6	7.9	**8.0**
3	HPW 349 (C)	**1903**	9.8	7.6	8.1	**8.5**
4	VL 907 (C)	**1905**	10.3	6.9	9.9	**9.0**
5	HS 668	**1904**	10.6	8.3	8.8	**9.2**
6	VL 2036	**1906**	9.7	8.4	8.3	**8.8**
	Mean		**9.9**	**7.9**	**8.6**	**8.8**
Rainfed Timely Sown						
1	HS 507 (C)	**1901**	10.6	8.1	10.1	**9.6**
2	HS 562 (C)	**1902**	10.0	6.6	9.0	**8.5**
3	HPW 349 (C)	**1903**	9.6	6.7	9.5	**8.6**
4	VL 907 (C)	**1905**	10.5	7.1	10.2	**9.3**
5	HS 668	**1904**	11.2	7.6	10.7	**9.8**
6	VL 2036	**1906**	10.4	7.3	9.9	**9.2**
	Mean		**10.4**	**7.2**	**9.9**	**9.2**
Restricted Irrigated Late Sown						
1	VL 892 (C)	**1908**	9.4	8.4	9.3	**9.0**
2	HS 490 (C)	**1910**	9.7	8.3	9.4	**9.1**
3	HS 681	**1901**	10.4	10.4	9.6	**10.1**
4	VL 3022	**1902**	10.0	9.0	9.5	**9.5**
5	HS 680	**1903**	10.3	8.8	9.7	**9.6**
6	VL 3023	**1904**	9.7	7.4	9.2	**8.7**
7	HPW 474	**1905**	10.0	7.8	10.7	**9.5**
8	UP 3069	**1906**	10.6	8.4	10.7	**9.9**
9	HPW 473	**1907**	9.4	7.5	8.4	**8.4**
10	VL 3024	**1909**	10.7	7.9	9.4	**9.3**
11	HS 679	**1911**	10.6	7.7	9.9	**9.4**
	Mean		**10.1**	**8.3**	**9.6**	**9.3**

Table 4: Sedimentation value (ml) of *T. aestivum* genotypes in Northern Hills Zone (NHZ) AVTs

S. No.	Entries	Code	Almora	Shimla	Malan	Mean
Irrigated Timely Sown						
1	HS 507 (C)	**1901**	52	42	53	**49**
2	HS 562 (C)	**1902**	67	44	60	**57**
3	HPW 349 (C)	**1903**	67	42	68	**59**
4	VL 907 (C)	**1905**	48	31	47	**42**
5	HS 668	**1904**	50	30	54	**45**
6	VL 2036	**1906**	62	48	63	**58**
	Mean		**58**	**39**	**57**	**51**
Rainfed Timely Sown						
1	HS 507 (C)	**1901**	53	50	50	**51**
2	HS 562 (C)	**1902**	67	43	57	**56**
3	HPW 349 (C)	**1903**	67	47	61	**58**
4	VL 907 (C)	**1905**	45	34	44	**41**
5	HS 668	**1904**	48	40	47	**45**
6	VL 2036	**1906**	63	51	63	**59**
	Mean		**57**	**44**	**54**	**52**
Restricted Irrigated Late Sown						
1	VL 892 (C)	**1908**	48	42	46	**45**
2	HS 490 (C)	**1910**	40	31	36	**36**
3	HS 681	**1901**	53	53	50	**52**
4	VL 3022	**1902**	64	44	57	**55**
5	HS 680	**1903**	63	48	67	**60**
6	VL 3023	**1904**	47	31	46	**41**
7	HPW 474	**1905**	63	53	67	**61**
8	UP 3069	**1906**	70	58	70	**66**
9	HPW 473	**1907**	55	46	47	**49**
10	VL 3024	**1909**	57	45	50	**51**
11	HS 679	**1911**	45	34	42	**40**
	Mean		**55**	**44**	**52**	**50**

Table 5: Phenol test (Max-10) of *T. aestivum* genotypes in Northern Hills Zone (NHZ) AVTs

S. No.	Entries	Code	Almora	Shimla	Malan	Mean
Irrigated Timely Sown						
1	HS 507 (C)	**1901**	6.0	6.0	7.5	**6.5**
2	HS 562 (C)	**1902**	7.5	5.0	8.5	**7.0**
3	HPW 349 (C)	**1903**	6.0	5.5	8.0	**6.5**
4	VL 907 (C)	**1905**	7.0	6.0	7.5	**6.8**
5	HS 668	**1904**	6.5	6.0	8.0	**6.8**
6	VL 2036	**1906**	7.5	6.0	7.0	**6.8**
	Mean		**6.8**	**5.8**	**7.8**	**6.8**
Rainfed Timely Sown						
1	HS 507 (C)	**1901**	6.5	6.0	7.0	**6.5**
2	HS 562 (C)	**1902**	8.5	7.0	7.5	**7.7**
3	HPW 349 (C)	**1903**	7.0	6.0	7.5	**6.8**
4	VL 907 (C)	**1905**	7.5	6.5	7.0	**7.0**
5	HS 668	**1904**	8.0	7.0	6.5	**7.2**
6	VL 2036	**1906**	8.0	6.0	8.0	**7.3**
	Mean		**7.6**	**6.4**	**7.3**	**7.1**
Restricted Irrigated Late Sown						
1	VL 892 (C)	**1908**	8.0	7.0	7.0	**7.3**
2	HS 490 (C)	**1910**	6.5	7.0	7.5	**7.0**
3	HS 681	**1901**	8.0	8.0	8.5	**8.2**
4	VL 3022	**1902**	5.0	5.0	6.0	**5.3**
5	HS 680	**1903**	7.5	8.0	8.5	**8.0**
6	VL 3023	**1904**	6.5	6.0	8.0	**6.8**
7	HPW 474	**1905**	7.0	6.0	8.5	**7.2**
8	UP 3069	**1906**	7.0	6.0	7.5	**6.8**
9	HPW 473	**1907**	6.5	5.5	6.5	**6.2**
10	VL 3024	**1909**	7.0	7.5	7.5	**7.3**
11	HS 679	**1911**	7.5	6.5	8.0	**7.3**
	Mean		**7.0**	**6.6**	**7.6**	**7.0**

Table 6: Hardness index of *T. aestivum* genotypes in Northern Hills Zone (NHZ) AVTs

S. No.	Entries	Code	Almora	Shimla	Malan	Mean
Irrigated Timely Sown						
1	HS 507 (C)	**1901**			83	83
2	HS 562 (C)	**1902**			77	77
3	HPW 349 (C)	**1903**			67	67
4	VL 907 (C)	**1905**			67	67
5	HS 668	**1904**			89	89
6	VL 2036	**1906**			65	65
	Mean				**75**	**75**
Rainfed Timely Sown						
1	HS 507 (C)	**1901**			84	84
2	HS 562 (C)	**1902**			76	76
3	HPW 349 (C)	**1903**			71	71
4	VL 907 (C)	**1905**			66	66
5	HS 668	**1904**			75	75
6	VL 2036	**1906**			71	71
	Mean				74	74
Restricted Irrigated Late Sown						
1	VL 892 (C)	**1908**			72	72
2	HS 490 (C)	**1910**			14	14
3	HS 681	**1901**			88	88
4	VL 3022	**1902**			75	75
5	HS 680	**1903**			71	71
6	VL 3023	**1904**			59	59
7	HPW 474	**1905**			73	73
8	UP 3069	**1906**			69	69
9	HPW 473	**1907**			52	52
10	VL 3024	**1909**			66	66
11	HS 679	**1911**			79	79
	Mean				**65**	**65**

Table 7: Grain iron content (ppm)of *T. aestivum* genotypes in Northern Hills Zone (NHZ) AVTs

S. No.	Entries	Code	Almora	Shimla	Malan	Mean
Irrigated Timely Sown						
1	HS 507 (C)	**1901**	32.5	30.4	34.1	**32.3**
2	HS 562 (C)	**1902**	36.4	32.9	34.2	**34.5**
3	HPW 349 (C)	**1903**	31.9	30.2	30.4	**30.8**
4	VL 907 (C)	**1905**	33.3	32.7	35.2	**33.7**
5	HS 668	**1904**	35.4	36.4	32.8	**34.9**
6	VL 2036	**1906**	34.8	34.5	29.9	**33.1**
	Mean		**34.1**	**32.9**	**32.8**	**33.2**
Rainfed Timely Sown						
1	HS 507 (C)	**1901**	**35.7**	37.4	36.2	**36.4**
2	HS 562 (C)	**1902**	36.4	29.0	33.1	**32.8**
3	HPW 349 (C)	**1903**	32.7	35.4	33.8	**34.0**
4	VL 907 (C)	**1905**	32.1	30.3	29.3	**30.6**
5	HS 668	**1904**	40.7	37.4	29.0	**35.7**
6	VL 2036	**1906**	31.7	27.9	32.9	**30.8**
	Mean		**34.9**	**32.9**	**32.4**	**33.4**
Restricted Irrigated Late Sown						
1	VL 892 (C)	**1908**	38	36.0	30.3	**34.8**
2	HS 490 (C)	**1910**	33.7	34.9	30.1	**32.9**
3	HS 681	**1901**	**38.7**	39.4	37.4	**38.5**
4	VL 3022	**1902**	35.6	33.5	30.6	**33.2**
5	HS 680	**1903**	33.6	28.7	32.0	**31.4**
6	VL 3023	**1904**	36.2	31.6	28.3	**32.0**
7	HPW 474	**1905**	34.2	35.0	31.3	**33.5**
8	UP 3069	**1906**	38.1	32.9	36.3	**35.8**
9	HPW 473	**1907**	33.5	36.9	29.3	**33.2**
10	VL 3024	**1909**	34.4	28.9	30.7	**31.3**
11	HS 679	**1911**	37.6	32.3	30.5	**33.5**
	Mean		**35.8**	**33.6**	**31.5**	**33.7**

Table 8: Grain zinc content (ppm)of *T. aestivum* genotypes in Northern Hills Zone (NHZ) AVTs

S. No.	Entries	Code	Almora	Shimla	Malan	Mean
Irrigated Timely Sown						
1	HS 507 (C)	**1901**	42.3	26.9	23.5	**30.9**
2	HS 562 (C)	**1902**	38.7	24.0	19.2	**27.3**
3	HPW 349 (C)	**1903**	39.9	29.9	21.4	**30.4**
4	VL 907 (C)	**1905**	39.5	27.1	23.3	**30.0**
5	HS 668	**1904**	47.8	41.9	28.3	**39.3**
6	VL 2036	**1906**	31.0	25.1	20.1	**25.4**
	Mean		**39.9**	**29.2**	**22.6**	**30.6**
Rainfed Timely Sown						
1	HS 507 (C)	**1901**	44.2	37.5	25.5	**35.7**
2	HS 562 (C)	**1902**	38.1	25.9	20.1	**28.0**
3	HPW 349 (C)	**1903**	42.1	34.3	24.0	**33.5**
4	VL 907 (C)	**1905**	45.1	23.0	21.0	**29.7**
5	HS 668	**1904**	51.3	39.8	25.5	**38.9**
6	VL 2036	**1906**	42.3	20.5	18.8	**27.2**
	Mean		**43.9**	**30.7**	**22.5**	**32.3**
Restricted Irrigated Late Sown						
1	VL 892 (C)	**1908**	38.4	36.5	23.0	**32.6**
2	HS 490 (C)	**1910**	36.8	37.6	29.9	**34.8**
3	HS 681	**1901**	40.6	38.1	28.5	**35.7**
4	VL 3022	**1902**	32.7	29.2	25.0	**29.0**
5	HS 680	**1903**	31.6	29.0	23.5	**28.0**
6	VL 3023	**1904**	34.5	30.8	24.0	**29.8**
7	HPW 474	**1905**	28.2	27.9	25.1	**27.1**
8	UP 3069	**1906**	39.7	29.2	25.4	**31.4**
9	HPW 473	**1907**	41.8	41.9	28.4	**37.4**
10	VL 3024	**1909**	30.2	25.6	23.2	**26.3**
11	HS 679	**1911**	37.3	29.8	22.5	**29.9**
	Mean		**35.6**	**32.3**	**25.3**	**31.1**

Table 9: Grain appearance score (Max-10) of *T. aestivum* genotypes in North Western Plains Zone (NWPZ) AVTs

S. No.	Entries	Code	Karnal	Ludhiana	Hisar	Delhi	Pantnagar	Durgapura	Mean
Irrigated Timely Sown									
1	DBW88 (C)	**101**	6.0	5.8	6.6	5.6	5.8	5.8	**5.9**
2	DBW187(I) (C)	**102**	6.8	6.0	6.6	6.0	6.0	5.8	**6.2**
3	HD2967 (C)	**103**	5.0	5.8	6.0	5.8	5.6	5.6	**5.6**
4	WH1105 (C)	**104**	6.0	6.0	6.2	6.0	5.6	5.8	**5.9**
5	DBW222(I) (C)	**105**	6.8	6.0	6.2	5.8	6.0	6.0	**6.1**
6	HD3086 (C)	**106**	6.8	6.0	6.6	6.0	6.8	6.0	**6.4**
7	PBW550 (C)	**109**	6.8	4.6	6.2	5.6	6.2	6.2	**5.9**
8	PBW840^{M}	**107**	7.2	5.8	6.6	6.0	6.4	6.2	**6.4**
9	PBW803	**108**	6.8	5.6	6.6	5.8	6.0	6.2	**6.2**
	Mean		**6.5**	**5.7**	**6.4**	**5.8**	**6.0**	**6.0**	**6.1**
Irrigated Late Sown									
1	HD3298*	**215**	5.4	5.6	5.2	6.2	5.8	6.0	**5.7**
2	HD3059 (C)	**202**	6.6	5.6	5.8	6.4	6.2	5.8	**6.1**
3	DBW173 (C)	**204**	6.8	5.6	5.4	6.0	5.8	6.0	**5.9**
4	WH1021 (C)	**205**	5.8	5.2	6.0	5.8	5.8	6.2	**5.8**
5	WH1124 (C)	**216**	6.2	5.6	5.8	6.0	5.6	5.6	**5.8**
6	PBW771(I) (C)	**212**	6.2	5.8	5.4	6.2	5.6	6.2	**5.9**
7	HD3334	**201**	6.8	5.8	6.0	6.4	6.2	6.4	**6.3**
8	HD3332	**203**	6.6	5.8	6.0	6.6	6.2	6.6	**6.3**
9	PBW811	**206**	6.2	5.4	5.0	6.0	5.8	6.0	**5.7**
10	DBW291	**207**	6.6	5.8	5.8	6.2	5.6	6.2	**6.0**
11	WH1264	**208**	6.6	5.6	5.8	6.4	5.8	6.4	**6.1**
12	PBW812	**209**	6.6	5.8	5.0	6.6	6.0	6.0	**6.0**
13	JKW261	**210**	6.0	5.0	5.0	5.8	5.4	6.0	**5.5**
14	DBW290	**211**	5.8	5.8	5.6	5.8	6.0	6.2	**5.9**
15	PBW813	**213**	6.2	5.8	5.2	6.2	6.0	6.2	**5.9**
16	HD3331$^{\#WB}$	**214**	6.0	5.6	5.2	6.0	5.4	5.6	**5.6**
17	UP3033	**217**	6.2	5.6	5.2	6.2	5.8	5.6	**5.8**
	Mean		**6.3**	**5.6**	**5.5**	**6.2**	**5.8**	**6.1**	**5.9**
Restricted Irrigated Timely Sown									
1	HD3043 (C)	**302**	6.4	4.6	5.8	5.0	6.8		**5.7**
2	PBW644 (C)	**303**	7.0	5.6	6.6	5.2	7.0		**6.3**
3	WH1080 (C)	**306**	6.0	4.2	6.2	4.6	5.8		**5.4**
4	WH1142 (C)	**308**	5.0	4.4	5.6	4.8	5.8		**5.1**
5	NIAW3170(I) (C)	**309**	6.0	5.6	5.0	4.8	6.6		**5.6**
6	HI1628(I) (C)	**305**	6.4	5.6	6.2	4.6	5.8		**5.7**
7	DBW296	**304**	6.4	5.4	5.8	5.0	6.8		**5.9**
8	JAUW672	**307**	6.0	4.2	6.2	4.6	6.0		**5.4**
9	HUW838$^{\#WB}$	**301**	6.6	5.2	5.8	5.8	6.6		**6.0**
	Mean		**6.2**	**5.0**	**5.9**	**4.9**	**6.4**		**5.7**

Table 10: Hectolitre weight (Kg/hl) of *T. aestivum* genotypes in North Western Plains Zone (NWPZ) AVTs

S. No.	Entries	Code	Karnal	Ludhiana	Hisar	Delhi	Pantnagar	Durgapura	Mean
Irrigated Timely Sown									
1	DBW88 (C)	**101**	78.1	77.8	80.0	76.6	79.0	78.0	**78.3**
2	DBW187(I) (C)	**102**	78.2	77.7	80.3	76.2	78.5	74.6	**77.6**
3	HD2967 (C)	**103**	74.2	76.3	79.0	77.5	80.5	75.0	**77.1**
4	WH1105 (C)	**104**	78.5	79.7	81.3	79.2	79.2	79.6	**79.6**
5	DBW222(I) (C)	**105**	76.9	78.1	80.6	77.3	81.5	80.1	**79.1**
6	HD3086 (C)	**106**	80.2	80.4	79.2	78.3	80.5	80.3	**79.8**
7	PBW550 (C)	**109**	79.8	75.9	80.2	77.7	80.2	79.6	**78.9**
8	PBW840^{M}	**107**	80.6	79.1	80.7	79.4	79.2	80.8	**80.0**
9	PBW803	**108**	78.8	79.7	79.7	77.4	81.2	79.5	**79.4**
	Mean		**78.4**	**78.3**	**80.1**	**77.7**	**80.0**	**78.6**	**78.9**
Irrigated Late Sown									
1	HD3298*	**215**	74.9	75.8	73.0	79.5	73.4	77.4	**75.7**
2	HD3059 (C)	**202**	77.0	75.7	77.2	80.8	73.9	77.6	**77.0**
3	DBW173 (C)	**204**	78.1	76.3	75.8	79.9	73.5	77.8	**76.9**
4	WH1021 (C)	**205**	74.4	72.9	78.2	78.4	72.7	78.6	**75.9**
5	WH1124 (C)	**216**	76.5	74.6	77.7	79.3	75.1	72.8	**76.0**
6	PBW771(I) (C)	**212**	79.4	77.9	78.0	80.6	73.5	80.3	**78.3**
7	HD3334	**201**	76.8	76.2	76.1	79.7	75.4	76.7	**76.8**
8	HD3332	**203**	77.0	76.9	76.1	80.4	75.2	80.3	**77.7**
9	PBW811	**206**	77.1	76.3	73.9	81.6	73.7	78.6	**76.9**
10	DBW291	**207**	80.8	79.7	78.6	82.6	73.7	83.6	**79.8**
11	WH1264	**208**	79.0	76.5	76.4	81.2	73.6	80.3	**77.8**
12	PBW812	**209**	78.9	75.7	77.0	81.9	74.4	80.0	**78.0**
13	JKW261	**210**	78.1	75.8	75.7	79.2	74.6	77.0	**76.7**
14	DBW290	**211**	73.2	71.8	78.4	76.9	71.6	71.0	**73.8**
15	PBW813	**213**	80.3	79.1	78.0	82.5	75.9	83.0	**79.8**
16	HD3331$^{\#WB}$	**214**	77.0	75.2	78.0	80.8	74.2	78.5	**77.3**
17	UP3033	**217**	79.3	76.8	77.6	79.6	73.8	79.3	**77.7**
	Mean		**77.5**	**76.1**	**76.8**	**80.3**	**74.0**	**78.4**	**77.2**
Restricted Irrigated Timely Sown									
1	HD3043 (C)	**302**	79.5	67.3	82.0	78.8	81.1		**77.7**
2	PBW644 (C)	**303**	79.0	73.9	79.0	78.4	81.2		**78.3**
3	WH1080 (C)	**306**	79.3	66.2	80.0	77.4	76.3		**75.8**
4	WH1142 (C)	**308**	76.0	72.1	81.0	77.4	80.1		**77.3**
5	NIAW3170(I) (C)	**309**	79.0	73.3	79.0	76.8	79.3		**77.5**
6	HI1628(I) (C)	**305**	79.4	75.2	81.5	73.9	77.0		**77.4**
7	DBW296	**304**	80.3	74.7	81.0	77.4	79.6		**78.6**
8	JAUW672	**307**	79.0	67.1	79.5	75.4	77.5		**75.7**
9	HUW838$^{\#WB}$	**301**	80.7	75.7	81.7	77.9	82.4		**79.7**
	Mean		**79.1**	**71.7**	**80.5**	**77.0**	**79.4**		**77.6**

Table 11: Protein content (%) at 12% moisture basis of *T. aestivum* genotypes in North Western Plains Zone (NWPZ) AVTs

S. No.	Entries	Code	Karnal	Ludhiana	Hisar	Delhi	Pantnagar	Durgapura	Mean
Irrigated Timely Sown									
1	DBW88 (C)	**101**	11.7	9.9	11.1	14.2	8.8	12.9	**11.4**
2	DBW187(I) (C)	**102**	12.4	10.5	10.3	14.4	8.1	13.9	**11.6**
3	HD2967 (C)	**103**	11.2	11.7	10.9	14.6	9.9	13.9	**12.0**
4	WH1105 (C)	**104**	11.7	9.6	10.4	13.9	8.9	13.8	**11.4**
5	DBW222(I) (C)	**105**	11.7	8.9	10.2	13.8	9.7	12.2	**11.1**
6	HD3086 (C)	**106**	10.6	9.4	12.5	13.6	8.9	11.4	**11.1**
7	PBW550 (C)	**109**	11.2	10.5	10.9	14.3	9.8	12.2	**11.5**
8	PBW840^{M}	**107**	11.3	10.1	9.4	14.7	10.1	12.7	**11.4**
9	PBW803	**108**	11.5	9.6	10.4	13.2	9.0	12.8	**11.1**
	Mean		**11.5**	**10.0**	**10.7**	**14.1**	**9.2**	**12.9**	**11.4**
Irrigated Late Sown									
1	HD3298*	**215**	12.0	11.4	11.8	10.8	10.9	12.9	**11.6**
2	HD3059 (C)	**202**	13.0	12.0	11.8	12.3	11.3	13.8	**12.4**
3	DBW173 (C)	**204**	12.4	12.2	13.3	11.9	12.3	13.0	**12.5**
4	WH1021 (C)	**205**	12.9	12.5	11.3	12.7	11.8	14.0	**12.5**
5	WH1124 (C)	**216**	11.9	11.6	11.0	11.8	10.7	14.8	**11.9**
6	PBW771(I) (C)	**212**	12.3	12.1	12.4	12.9	11.6	13.1	**12.4**
7	HD3334	**201**	11.6	11.5	11.6	11.8	11.0	12.7	**11.7**
8	HD3332	**203**	12.3	10.9	12.5	12.0	11.9	13.7	**12.2**
9	PBW811	**206**	11.4	11.8	11.3	11.4	10.0	14.3	**11.7**
10	DBW291	**207**	13.0	12.7	13.0	13.0	10.8	13.1	**12.6**
11	WH1264	**208**	12.5	11.4	11.6	12.5	11.8	13.9	**12.3**
12	PBW812	**209**	11.6	11.3	11.3	11.7	11.1	13.3	**11.7**
13	JKW261	**210**	11.5	9.7	11.4	10.3	11.1	12.4	**11.1**
14	DBW290	**211**	12.0	11.2	11.0	11.4	11.0	13.9	**11.7**
15	PBW813	**213**	12.0	12.8	12.9	13.5	12.4	13.2	**12.8**
16	HD3331$^{\#WB}$	**214**	12.0	11.8	10.7	10.7	9.9	12.4	**11.3**
17	UP3033	**217**	12.0	11.9	13.2	11.6	11.3	14.7	**12.5**
	Mean		**12.1**	**11.7**	**11.9**	**11.9**	**11.3**	**13.5**	**12.1**
Restricted Irrigated Timely Sown									
1	HD3043 (C)	**302**	12.9	12.2	8.5	13.4	10.3		**11.5**
2	PBW644 (C)	**303**	11.6	11.6	9.1	12.9	10.0		**11.0**
3	WH1080 (C)	**306**	11.8	12.8	9.0	12.7	11.9		**11.7**
4	WH1142 (C)	**308**	12.1	12.3	8.5	12.5	10.0		**11.1**
5	NIAW3170(I) (C)	**309**	12.2	12.5	10.2	12.6	11.2		**11.7**
6	HI1628(I) (C)	**305**	11.5	11.7	9.0	12.9	11.3		**11.3**
7	DBW296	**304**	11.8	13.1	9.3	12.8	12.1		**11.8**
8	JAUW672	**307**	11.1	12.9	9.2	12.1	10.5		**11.2**
9	HUW838$^{\#WB}$	**301**	11.6	12.6	9.4	13.0	10.4		**11.4**
	Mean		**11.8**	**12.4**	**9.1**	**12.8**	**10.9**		**11.4**

Table 12: Sedimentation value (ml) of *T. aestivum* genotypes in North Western Plains Zone (NWPZ) AVTs

S. No.	Entries	Code	Karnal	Ludhiana	Hisar	Delhi	Pantnagar	Durgapura	Mean
Irrigated Timely Sown									
1	DBW88 (C)	**101**	64	61	60	71	59	64	**63**
2	DBW187(I) (C)	**102**	67	64	59	69	58	66	**64**
3	HD2967 (C)	**103**	62	65	64	65	63	60	**63**
4	WH1105 (C)	**104**	68	62	60	71	63	67	**65**
5	DBW222(I) (C)	**105**	60	56	61	61	54	60	**58**
6	HD3086 (C)	**106**	62	59	59	60	58	62	**60**
7	PBW550 (C)	**109**	62	55	50	67	60	70	**61**
8	PBW840^{M}	**107**	57	53	54	63	53	71	**59**
9	PBW803	**108**	60	59	49	66	55	67	**59**
	Mean		**62**	**59**	**57**	**66**	**58**	**65**	**61**
Irrigated Late Sown									
1	HD3298*	**215**	49	52	54	60	56	67	**56**
2	HD3059 (C)	**202**	72	70	64	71	73	72	**70**
3	DBW173 (C)	**204**	60	58	55	69	73	69	**64**
4	WH1021 (C)	**205**	67	67	57	72	67	73	**67**
5	WH1124 (C)	**216**	45	47	45	50	48	55	**48**
6	PBW771(I) (C)	**212**	62	62	55	60	62	71	**62**
7	HD3334	**201**	70	60	61	67	62	72	**65**
8	HD3332	**203**	49	51	50	56	67	55	**55**
9	PBW811	**206**	55	61	52	60	53	71	**59**
10	DBW291	**207**	62	55	50	56	67	70	**60**
11	WH1264	**208**	60	64	57	61	58	69	**62**
12	PBW812	**209**	46	42	40	47	45	48	**44**
13	JKW261	**210**	56	63	49	63	74	71	**63**
14	DBW290	**211**	68	64	55	53	57	74	**62**
15	PBW813	**213**	60	58	48	59	57	69	**59**
16	HD3331$^{\#WB}$	**214**	60	64	56	64	64	70	**63**
17	UP3033	**217**	57	55	59	63	60	71	**61**
	Mean		**59**	**58**	**53**	**61**	**61**	**68**	**60**
Restricted Irrigated Timely Sown									
1	HD3043 (C)	**302**	63	69	57	62	59		**62**
2	PBW644 (C)	**303**	57	57	43	55	48		**52**
3	WH1080 (C)	**306**	51	57	49	48	42		**50**
4	WH1142 (C)	**308**	57	70	53	62	54		**59**
5	NIAW3170(I) (C)	**309**	58	66	57	60	55		**59**
6	HI1628(I) (C)	**305**	71	72	59	67	71		**68**
7	DBW296	**304**	55	64	55	48	55		**56**
8	JAUW672	**307**	56	60	48	53	51		**54**
9	HUW838$^{\#WB}$	**301**	53	60	53	50	52		**53**
	Mean		**58**	**64**	**53**	**56**	**54**		**57**

Table 13: Phenol test (Max-10) of *T. aestivum* genotypes in North Western Plains Zone (NWPZ) AVTs

S. No.	Entries	Code	Karnal	Ludhiana	Hisar	Delhi	Pantnagar	Durgapura	Mean
Irrigated Timely Sown									
1	DBW88 (C)	**101**	6.5	6.5	8.0	7.0	6.5	7.5	**7.0**
2	DBW187(I) (C)	**102**	7.0	7.0	7.5	6.5	6.5	7.0	**6.9**
3	HD2967 (C)	**103**	5.0	6.0	6.0	6.0	6.0	5.5	**5.8**
4	WH1105 (C)	**104**	7.0	6.0	8.0	6.5	6.0	7.5	**6.8**
5	DBW222(I) (C)	**105**	6.5	6.0	7.5	6.0	6.5	7.0	**6.6**
6	HD3086 (C)	**106**	6.5	6.5	5.5	6.5	6.5	6.5	**6.3**
7	PBW550 (C)	**109**	8.5	6.0	7.5	6.0	7.0	7.5	**7.1**
8	PBW840^{M}	**107**	8.0	5.5	8.5	6.0	6.5	8.0	**7.1**
9	PBW803	**108**	8.5	7.0	7.5	6.5	6.5	7.5	**7.3**
	Mean		**7.1**	**6.3**	**7.3**	**6.3**	**6.4**	**7.1**	**6.7**
Irrigated Late Sown									
1	HD3298*	**215**	4.5	4.0	5.0	5.0	5.5	5.0	**4.8**
2	HD3059 (C)	**202**	6.5	8.0	8.0	7.0	6.5	7.0	**7.2**
3	DBW173 (C)	**204**	6.0	5.5	6.0	7.0	6.0	5.5	**6.0**
4	WH1021 (C)	**205**	8.0	6.0	8.5	7.5	8.0	7.0	**7.5**
5	WH1124 (C)	**216**	6.5	8.0	6.0	8.0	8.0	6.0	**7.1**
6	PBW771(I) (C)	**212**	6.0	7.0	5.5	7.5	6.5	6.5	**6.5**
7	HD3334	**201**	6.5	7.5	6.0	6.5	6.0	5.5	**6.3**
8	HD3332	**203**	6.5	7.0	7.5	7.0	7.0	7.0	**7.0**
9	PBW811	**206**	6.0	7.5	8.0	7.0	6.5	7.5	**7.1**
10	DBW291	**207**	7.5	7.5	7.5	7.5	6.5	6.5	**7.2**
11	WH1264	**208**	4.0	3.5	3.5	3.0	5.0	4.0	**3.8**
12	PBW812	**209**	4.5	6.0	7.5	6.5	7.0	7.0	**6.4**
13	JKW261	**210**	5.0	7.0	7.5	6.0	6.5	6.0	**6.3**
14	DBW290	**211**	5.5	7.5	7.0	6.5	6.5	5.5	**6.4**
15	PBW813	**213**	5.0	6.0	6.5	6.0	6.5	6.0	**6.0**
16	HD3331$^{\#WB}$	**214**	6.0	7.5	7.0	7.0	7.0	6.5	**6.8**
17	UP3033	**217**	6.0	7.0	7.5	6.0	5.5		**6.4**
	Mean		**5.9**	**6.6**	**6.7**	**6.5**	**6.5**	**6.2**	**6.4**
Restricted Irrigated Timely Sown									
1	HD3043 (C)	**302**	6.0	7.5	7.0	6.5	6.0		**6.6**
2	PBW644 (C)	**303**	5.5	7.5	6.0	7.0	6.5		**6.5**
3	WH1080 (C)	**306**	4.5	7.0	5.5	7.0	6.0		**6.0**
4	WH1142 (C)	**308**	4.0	6.0	5.0	8.0	5.5		**5.7**
5	NIAW3170(I) (C)	**309**	6.5	8.0	7.0	8.0	6.5		**7.2**
6	HI1628(I) (C)	**305**	6.0	7.5	7.0	7.5	7.0		**7.0**
7	DBW296	**304**	5.5	8.0	6.0	8.0	6.0		**6.7**
8	JAUW672	**307**	5.0	8.0	6.0	6.0	6.0		**6.2**
9	HUW838$^{\#WB}$	**301**	5.5	7.5	5.5	7.5	6.0		**6.4**
	Mean		**5.4**	**7.4**	**6.1**	**7.3**	**6.2**		**6.5**

Table 14: Hardness index of *T. aestivum* genotypes in North Western Plains Zone (NWPZ) AVTs

S. No.	Entries	Code	Karnal	Ludhiana	Hisar	Delhi	Pantnagar	Durgapura	Mean
Irrigated Timely Sown									
1	DBW88 (C)	**101**				82			82
2	DBW187(I) (C)	**102**				71			71
3	HD2967 (C)	**103**				75			75
4	WH1105 (C)	**104**				73			73
5	DBW222(I) (C)	**105**				76			76
6	HD3086 (C)	**106**				75			75
7	PBW550 (C)	**109**				79			79
8	PBW840^{M}	**107**				90			90
9	PBW803	**108**				79			79
	Mean					**78**			**78**
Irrigated Late Sown									
1	HD3298*	**215**				79			79
2	HD3059 (C)	**202**				88			88
3	DBW173 (C)	**204**				86			86
4	WH1021 (C)	**205**				89			89
5	WH1124 (C)	**216**				88			88
6	PBW771(I) (C)	**212**				85			85
7	HD3334	**201**				82			82
8	HD3332	**203**				74			74
9	PBW811	**206**				71			71
10	DBW291	**207**				78			78
11	WH1264	**208**				82			82
12	PBW812	**209**				93			93
13	JKW261	**210**				83			83
14	DBW290	**211**				67			67
15	PBW813	**213**				78			78
16	HD3331$^{\#WB}$	**214**				80			80
17	UP3033	**217**				91			91
	Mean					**82**			**82**
Restricted Irrigated Timely Sown									
1	HD3043 (C)	**302**				81			81
2	PBW644 (C)	**303**				71			71
3	WH1080 (C)	**306**				81			81
4	WH1142 (C)	**308**				82			82
5	NIAW3170(I) (C)	**309**				26			26
6	HI1628(I) (C)	**305**				72			72
7	DBW296	**304**				36			36
8	JAUW672	**307**				73			73
9	HUW838$^{\#WB}$	**301**				76			76
	Mean					**66**			**66**

Table 15: Grain iron content (ppm) of *T. aestivum* genotypes in North Western Plains Zone (NWPZ) AVTs

S. No.	Entries	Code	Karnal	Ludhiana	Hisar	Delhi	Pantnagar	Durgapura	Mean
Irrigated Timely Sown									
1	DBW88 (C)	**101**	39.4	34.8	33.0	40.6	52.7	34.4	**39.2**
2	DBW187(I) (C)	**102**	43.3	34.8	30.3	45.7	51.8	36.2	**40.4**
3	HD2967 (C)	**103**	43.7	39.6	32.4	43.2	40.5	38.0	**39.6**
4	WH1105 (C)	**104**	38.7	43.3	34.4	48.2	43.9	37.1	**40.9**
5	DBW222(I) (C)	**105**	39.5	33.4	37.5	39.2	42.4	32.4	**37.4**
6	HD3086 (C)	**106**	37.0	39.5	40.6	43.2	41.7	35.6	**39.6**
7	PBW550 (C)	**109**	37.7	32.5	36.5	40.9	40.9	35.5	**37.3**
8	PBW840^{M}	**107**	42.5	40.2	40.1	42.3	51.2	34.8	**41.9**
9	PBW803	**108**	41.5	37.8	40.9	49.8	43.1	35.7	**41.5**
	Mean		**40.4**	**37.3**	**36.2**	**43.7**	**45.4**	**35.5**	**39.7**
Irrigated Late Sown									
1	HD3298*	**215**	39.1	37.7	37.3	36.4	46.6	38.8	**39.3**
2	HD3059 (C)	**202**	33.0	37.7	31.7	36.1	46.7	35.4	**36.8**
3	DBW173 (C)	**204**	33.7	39.6	31.5	36.8	45.0	37.6	**37.4**
4	WH1021 (C)	**205**	34.6	40.3	29.4	38.3	52.4	37.0	**38.7**
5	WH1124 (C)	**216**	38.5	35.3	31.2	37.6	54.2	37.9	**39.1**
6	PBW771(I) (C)	**212**	40.2	38.8	34.9	37.6	46.3	38.2	**39.3**
7	HD3334	**201**	35.6	37.5	33.7	40.3	42.7	35.5	**37.6**
8	HD3332	**203**	34.3	40.2	32.5	37.7	38.7	37.8	**36.9**
9	PBW811	**206**	32.3	34.3	36.5	35.0	54.1	36.2	**38.1**
10	DBW291	**207**	34.2	40.2	33.3	37.3	55.7	38.2	**39.8**
11	WH1264	**208**	34.1	34.4	29.6	36.5	46.2	33.8	**35.8**
12	PBW812	**209**	32.2	37.1	33.6	37.1	49.5	39.2	**38.1**
13	JKW261	**210**	33.6	34.3	30.3	33.4	42.0	36.3	**35.0**
14	DBW290	**211**	36.0	32.2	26.7	35.9	45.0	38.6	**35.7**
15	PBW813	**213**	40.4	39.6	34.3	40.6	50.1	36.0	**40.2**
16	HD3331$^{\#WB}$	**214**	37.1	35.6	29.9	36.8	50.9	36.3	**37.8**
17	UP3033	**217**	36.0	34.8	36.4	33.6	58.3	37.9	**39.5**
	Mean		**35.6**	**37.0**	**32.5**	**36.9**	**48.5**	**37.1**	**37.9**
Restricted Irrigated Timely Sown									
1	HD3043 (C)	**302**	38.2	51.6	28.3	35.8	34.9		**37.8**
2	PBW644 (C)	**303**	40.0	35.5	31.7	40.3	38.7		**37.2**
3	WH1080 (C)	**306**	34.7	52.6	30.1	39.7	41.7		**39.8**
4	WH1142 (C)	**308**	38.9	42.9	28.4	41.8	40.8		**38.6**
5	NIAW3170(I) (C)	**309**	34.5	43.5	32.8	39.3	36.1		**37.2**
6	HI1628(I) (C)	**305**	33.3	43.0	29.7	39.7	37.8		**36.7**
7	DBW296	**304**	41.6	51.0	30.5	39.9	36.3		**39.9**
8	JAUW672	**307**	32.2	53.0	26.7	37.4	34.8		**36.8**
9	HUW838$^{\#WB}$	**301**	33.8	42.8	29.0	37.6	37.0		**36.0**
	Mean		**36.4**	**46.2**	**29.7**	**39.1**	**37.6**		**37.8**

Table 16: Grain zinc content (ppm) of *T. aestivum* genotypes in North Western Plains Zone (NWPZ) AVTs

S. No.	Entries	Code	Karnal	Ludhiana	Hisar	Delhi	Pantnagar	Durgapura	Mean
Irrigated Timely Sown									
1	DBW88 (C)	**101**	29.7	33.6	34.4	47.4	30.2	38.4	**35.6**
2	DBW187(I) (C)	**102**	29.9	38.8	30.4	42.1	28.9	34.6	**34.1**
3	HD2967 (C)	**103**	37.8	39.9	34.8	56.1	30.5	49.9	**41.5**
4	WH1105 (C)	**104**	32.4	39.9	37.5	54.2	32.3	40.8	**39.5**
5	DBW222(I) (C)	**105**	29.7	25.8	39.3	43.4	30.5	38.0	**34.5**
6	HD3086 (C)	**106**	30.5	31.0	41.1	47.7	29.0	36.3	**35.9**
7	PBW550 (C)	**109**	32.4	36.6	38.1	53.4	33.4	48.5	**40.4**
8	PBW840^{M}	**107**	39.5	37.5	41.1	52.4	37.4	46.4	**42.4**
9	PBW803	**108**	34.8	32.9	40.2	45.3	32.6	38.0	**37.3**
	Mean		**33.0**	**35.1**	**37.4**	**49.1**	**31.6**	**41.2**	**37.9**
Irrigated Late Sown									
1	HD3298*	**215**	27.6	35.2	49.6	41.9	30.6	31.0	**36.0**
2	HD3059 (C)	**202**	26.3	30.7	45.5	41.2	33.8	28.4	**34.3**
3	DBW173 (C)	**204**	25.5	35.8	41.9	37.2	24.9	29.3	**32.4**
4	WH1021 (C)	**205**	28.4	37.5	45.5	50.2	33.7	32.7	**38.0**
5	WH1124 (C)	**216**	26.9	36.7	45.0	44.3	35.5	30.5	**36.5**
6	PBW771(I) (C)	**212**	35.2	39.0	53.2	49.7	40.3	31.7	**41.5**
7	HD3334	**201**	27.4	36.1	51.7	51.1	30.0	25.8	**37.0**
8	HD3332	**203**	31.4	36.2	52.3	48.6	32.8	33.5	**39.1**
9	PBW811	**206**	26.0	33.3	49.7	44.6	27.9	34.2	**36.0**
10	DBW291	**207**	28.9	32.7	53.4	46.4	29.9	28.9	**36.7**
11	WH1264	**208**	25.0	32.0	46.4	37.8	27.1	27.3	**32.6**
12	PBW812	**209**	25.0	30.0	49.7	43.0	32.0	26.3	**34.3**
13	JKW261	**210**	25.6	34.3	48.3	42.1	28.8	30.2	**34.9**
14	DBW290	**211**	28.8	29.9	35.0	42.9	25.3	33.9	**32.6**
15	PBW813	**213**	32.8	46.2	51.8	49.3	40.9	27.2	**41.4**
16	HD3331$^{\#WB}$	**214**	26.9	32.2	48.2	47.5	33.6	31.5	**36.7**
17	UP3033	**217**	26.6	30.4	52.3	43.1	26.7	32.6	**35.3**
	Mean		**27.9**	**34.6**	**48.2**	**44.8**	**31.4**	**30.3**	**36.2**
Restricted Irrigated Timely Sown									
1	HD3043 (C)	**302**	42.6	27.8	39.0	44.5	31.6		**37.1**
2	PBW644 (C)	**303**	35.8	24.7	35.2	46.8	30.8		**34.7**
3	WH1080 (C)	**306**	31.3	26.3	28.7	42.8	28.5		**31.5**
4	WH1142 (C)	**308**	33.1	26.5	32.4	44.8	30.3		**33.4**
5	NIAW3170(I) (C)	**309**	32.1	30.5	40.0	45.9	29.5		**35.6**
6	HI1628(I) (C)	**305**	33.8	31.8	33.2	45.3	27.2		**34.3**
7	DBW296	**304**	34.3	23.2	33.8	45.7	29.1		**33.2**
8	JAUW672	**307**	31.6	27.3	29.3	41.5	26.0		**31.1**
9	HUW838$^{\#WB}$	**301**	29.5	24.2	33.3	42.6	33.6		**32.6**
	Mean		**33.8**	**26.9**	**33.9**	**44.4**	**29.6**		**33.7**

Table 17: Grain appearance score (Max-10) of *T. aestivum* genotypes in North Eastern Plains Zone (NEPZ) AVTs

S. No.	Entries	Code	Kanpur	Pusa	Sabour	Varanasi	Mean
Irrigated Timely Sown							
1	DBW187 (C)	**102**	5.2	6.2	5.2	6.0	**5.7**
2	K1006 (C)	**103**	5.4	6.0	5.4	5.8	**5.7**
3	DBW39 (C)	**104**	5.2	6.0	5.2	6.2	**5.7**
4	HD2733 (C)	**106**	5.6	6.2	5.2	6.2	**5.8**
5	HD3249(I) (C)	**105**	5.6	6.0	5.4	6.4	**5.9**
6	PBW804	**101**	5.8	5.8	5.4	6.0	**5.8**
Mean			**5.5**	**6.0**	**5.3**	**6.1**	**5.7**
Restricted Irrigated Timely Sown							
1	HD3293*	**303**	6.4	5.6	5.2	6.0	**5.8**
2	HD3171 (C)	**301**	6.2	4.8	5.4	5.6	**5.5**
3	HD2888 (C)	**302**	6.4	5.0	5.2	5.8	**5.6**
4	K1317 (C)	**304**	6.8	5.8	5.4	6.4	**6.1**
5	HI1612 (C)	**305**	6.6	6.0	5.2	6.0	**6.0**
6	DBW252(I) (C)	**306**	6.8	6.0	5.0	6.0	**6.0**
Mean			**6.5**	**5.5**	**5.2**	**6.0**	**5.8**

Table 18: Hectolitre weight (Kg/hl) of *T. aestivum* genotypes in North Eastern Plains Zone (NEPZ) AVTs

S. No.	Entries	Code	Kanpur	Pusa	Sabour	Varanasi	Mean
Irrigated Timely Sown							
1	DBW187 (C)	**102**	75.5	75.0	66.8	79.9	**74.3**
2	K1006 (C)	**103**	76.5	76.0	72.0	80.9	**76.4**
3	DBW39 (C)	**104**	76.0	74.5	70.0	79.0	**74.9**
4	HD2733 (C)	**106**	76.3	75.5	70.6	79.5	**75.5**
5	HD3249(I) (C)	**105**	76.5	74.6	69.7	79.9	**75.2**
6	PBW804	**101**	77.5	73.7	71.0	78.0	**75.1**
Mean			**76.4**	**74.9**	**70.0**	**79.5**	**75.2**
Restricted Irrigated Timely Sown							
1	HD3293*	**303**	80.6	73.4	66.5	76.2	**74.2**
2	HD3171 (C)	**301**	82.2	71.7	66.7	70.5	**72.8**
3	HD2888 (C)	**302**	81.9	73.1	69.7	79.7	**76.1**
4	K1317 (C)	**304**	83.4	76.0	67.0	80.6	**76.8**
5	HI1612 (C)	**305**	82.3	75.6	68.0	76.1	**75.5**
6	DBW252(I) (C)	**306**	82.5	74.8	69.3	77.4	**76.0**
Mean			**82.2**	**74.1**	**67.9**	**76.8**	**75.2**

Table 19: Protein content (%) at 12% moisture basis of *T. aestivum* genotypes in North Eastern Plains Zone (NEPZ) AVTs

S. No.	Entries	Code	Kanpur	Pusa	Sabour	Varanasi	Mean
Irrigated Timely Sown							
1	DBW187 (C)	**102**	12.1	12.8	14.2	9.1	**12.1**
2	K1006 (C)	**103**	11.9	12.7	10.7	8.7	**11.0**
3	DBW39 (C)	**104**	11.8	12.8	12.1	9.4	**11.5**
4	HD2733 (C)	**106**	13.1	12.9	12.5	9.4	**12.0**
5	HD3249(I) (C)	**105**	11.3	12.9	13.0	9.7	**11.7**
6	PBW804	**101**	12.2	13.7	13.6	10.8	**12.6**
Mean			**12.1**	**13.0**	**12.7**	**9.5**	**11.8**
Restricted Irrigated Timely Sown							
1	HD3293*	**303**	10.1	12.1	11.7	11.1	**11.3**
2	HD3171 (C)	**301**	9.3	13.2	13.2	10.9	**11.7**
3	HD2888 (C)	**302**	12.4	14.0	11.5	12.9	**12.7**
4	K1317 (C)	**304**	11.2	12.6	13.3	12.2	**12.3**
5	HI1612 (C)	**305**	10.3	12.0	14.2	12.2	**12.2**
6	DBW252(I) (C)	**306**	11.4	12.4	14.3	12.4	**12.6**
Mean			**10.8**	**12.7**	**13.0**	**12.0**	**12.1**

Table 20: Sedimentation value (ml) of *T. aestivum* genotypes in North Eastern Plains Zone NEPZ) AVTs

S. No.	Entries	Code	Kanpur	Pusa	Sabour	Varanasi	Mean
Irrigated Timely Sown							
1	DBW187 (C)	**102**	72	71	54	59	**64**
2	K1006 (C)	**103**	41	48	70	38	**49**
3	DBW39 (C)	**104**	55	64	64	50	**59**
4	HD2733 (C)	**106**	57	63	67	48	**59**
5	HD3249(I) (C)	**105**	72	72	71	60	**69**
6	PBW804	**101**	66	72	71	60	**67**
Mean			**61**	**65**	**66**	**52**	**61**
Restricted Irrigated Timely Sown							
1	HD3293*	**303**	48	71	72	57	**62**
2	HD3171 (C)	**301**	58	73	63	65	**65**
3	HD2888 (C)	**302**	48	71	57	54	**57**
4	K1317 (C)	**304**	55	75	70	63	**66**
5	HI1612 (C)	**305**	63	73	73	74	**71**
6	DBW252(I) (C)	**306**	47	60	51	61	**55**
Mean			**53**	**70**	**64**	**62**	**63**

Table 21: Phenol test (Max-10) of *T. aestivum* genotypes in North Eastern Plains Zone (NEPZ) AVTs

S. No.	Entries	Code	Kanpur	Pusa	Sabour	Varanasi	Mean
Irrigated Timely Sown							
1	DBW187 (C)	**102**	6.5	7.5	8.5	7.0	**7.4**
2	K1006 (C)	**103**	6.0	6.5	8.0	6.5	**6.8**
3	DBW39 (C)	**104**	4.0	4.0	6.0	4.5	**4.6**
4	HD2733 (C)	**106**	6.5	6.5	7.5	6.5	**6.8**
5	HD3249(I) (C)	**105**	7.0	7.0	8.5	8.0	**7.6**
6	PBW804	**101**	6.5	7.0	7.0	6.5	**6.8**
Mean			**6.1**	**6.4**	**7.6**	**6.5**	**6.6**
Restricted Irrigated Timely Sown							
1	HD3293*	**303**	6.5	6.5	7.5	8.0	**7.1**
2	HD3171 (C)	**301**	6.5	6.0	6.5	7.5	**6.6**
3	HD2888 (C)	**302**	4.5	4.0	5.0	4.0	**4.4**
4	K1317 (C)	**304**	3.5	3.5	5.0	5.0	**4.3**
5	HI1612 (C)	**305**	6.5	6.5	8.5	8.0	**7.4**
6	DBW252(I) (C)	**306**	4.0	4.0	5.5	5.5	**4.8**
Mean			**5.3**	**5.1**	**6.3**	**6.3**	**5.8**

Table 22: Hardness index of *T. aestivum* genotypes in North Eastern Plains Zone (NEPZ) AVTs

S. No.	Entries	Code	Kanpur	Pusa	Sabour	Varanasi	Mean
Irrigated Timely Sown							
1	DBW187 (C)	**102**		63			63
2	K1006 (C)	**103**		72			72
3	DBW39 (C)	**104**		74			74
4	HD2733 (C)	**106**		70			70
5	HD3249(I) (C)	**105**		68			68
6	PBW804	**101**		30			30
Mean				**63**			**63**
Restricted Irrigated Timely Sown							
1	HD3293*	**303**		63			63
2	HD3171 (C)	**301**		75			75
3	HD2888 (C)	**302**		84			84
4	K1317 (C)	**304**		70			70
5	HI1612 (C)	**305**		76			76
6	DBW252(I) (C)	**306**		78			78
Mean				**74**			**74**

Table 23: Grain iron content (ppm) of *T. aestivum* genotypes in North Eastern Plains Zone (NEPZ) AVTs

S. No.	Entries	Code	Kanpur	Pusa	Sabour*	Varanasi	Mean
Irrigated Timely Sown							
1	DBW187 (C)	**102**	45.3	43.6	--	30.4	**39.8**
2	K1006 (C)	**103**	49.4	37.6	--	36.7	**41.2**
3	DBW39 (C)	**104**	35.9	38.5	--	32.8	**35.7**
4	HD2733 (C)	**106**	42.0	33.7		33.1	**36.3**
5	HD3249(I) (C)	**105**	48.6	40.3		32.3	**40.4**
6	PBW804	**101**	41.8	36.5		34.3	**37.5**
Mean			**43.8**	**38.4**		**33.3**	**38.5**
Restricted Irrigated Timely Sown							
1	HD3293*	**303**	35.7	36.5		32.4	**34.9**
2	HD3171 (C)	**301**	34.3	40.8		44.4	**39.8**
3	HD2888 (C)	**302**	42.2	41.5		39.3	**41.0**
4	K1317 (C)	**304**	37.1	36.8		35.3	**36.4**
5	HI1612 (C)	**305**	37.9	36.7		42.7	**39.1**
6	DBW252(I) (C)	**306**	37.8	40.7		40.9	**39.8**
Mean			**37.5**	**38.8**		**39.2**	**38.5**

Table 24: Grain zinc content (ppm) of *T. aestivum* genotypes in North Eastern Plains Zone (NEPZ) AVTs

S. No.	Entries	Code	Kanpur	Pusa	Sabour*	Varanasi	Mean
Irrigated Timely Sown							
1	DBW187 (C)	**102**	28.3	40.1	---	28.6	**32.3**
2	K1006 (C)	**103**	44.2	48.5	--	33.0	**41.9**
3	DBW39 (C)	**104**	33.9	46.9		29.7	**36.8**
4	HD2733 (C)	**106**	31.2	44.2		30.8	**35.4**
5	HD3249(I) (C)	**105**	27.2	37.4		27.3	**30.6**
6	PBW804	**101**	33.4	50.1		32.7	**38.7**
Mean			**33.0**	**44.5**		**30.4**	**36.0**
Restricted Irrigated Timely Sown							
1	HD3293*	**303**	33.5	46.4		33.2	**37.7**
2	HD3171 (C)	**301**	29.9	47.2		33.8	**37.0**
3	HD2888 (C)	**302**	41.6	49.3		40.8	**43.9**
4	K1317 (C)	**304**	32.5	44.8		34.7	**37.3**
5	HI1612 (C)	**305**	34.3	45.8		33.9	**38.0**
6	DBW252(I) (C)	**306**	45.1	43.6		42.0	**43.6**
Mean			**36.2**	**46.2**		**36.4**	**39.6**

***could not be analysed for Fe and Zn content because all samples had soil content. Very poor quality samples were received from Sabour centre.**

Table 25: Grain appearance score (Max-10) of *T. aestivum* and *T. durum* genotypes in Central Zone (CZ) AVTs

S. No.	Entries	Code	Vijapur	Junagarh	P.Kheda	Indore	Mean
Irrigated Timely Sown							
T. aestivum							
1	GW322 (C)	**109**	6.2	6.8	7.0	4.6	**6.2**
2	HI1544 (C)	**110**	6.6	7.2	6.6	6.4	**6.7**
3	TAW155	**101**	6.0	6.8	6.8	6.0	**6.4**
4	HI1636	**102**	6.4	7.6	6.6	6.0	**6.7**
5	MP1361	**103**	6.4	7.4	7.0	5.8	**6.7**
6	MACS6747	**104**	6.4	7.2	6.8	6.0	**6.6**
7	HD3377^{B}	**105**	6.6	6.8	6.2	6.2	**6.5**
8	HI1637	**106**	6.2	7.4	6.6	5.8	**6.5**
9	RAJ4541^{B}	**107**	6.8	7.6	7.4	6.0	**7.0**
10	GW513	**108**	6.6	7.6	6.8	6.0	**6.8**
	Mean		**6.4**	**7.3**	**6.8**	**5.9**	**6.6**
Irrigated Late Sown							
T. aestivum							
1	CG1029*	**205**	6.2	7.4	6.8	5.4	**6.5**
2	HI1634^{Q}*	**201**	6.8	7.4	7.0	6.6	**7.0**
3	HD2932 (C)	**202**	6.6	7.4	6.8	5.8	**6.7**
4	MP3336 (C)	**203**	6.2	7.2	7.0	5.6	**6.5**
5	HD2864 (C)	**204**	6.0	7.4	6.6	5.2	**6.3**
	Mean		**6.4**	**7.4**	**6.8**	**5.7**	**6.6**
Restricted Irrigated Timely Sown							
T. durum							
1	HI8627(d) (C)	**302**	6.6	6.6	6.8	6.6	**6.7**
2	UAS466(d)(I) (C)	**303**	6.8	6.6	6.6	5.8	**6.5**
3	DDW47(d)(I) (C)	**308**	6.8	6.8	6.8	6.0	**6.6**
6	HI 8823(d)	**307**	7.0	7.4	7.2	6.4	**7.0**
7	MPO1357(d)	**301**	6.8	6.8	6.8	6.6	**6.8**
8	UAS472(d)	**304**	6.8	6.8	6.8	6.0	**6.6**
	Mean		**6.8**	**6.8**	**6.8**	**6.2**	**6.7**
T. aestivum							
4	DBW110 (C)	**305**	7.0	7.0	7.0	6.2	**6.8**
5	MP3288 (C)	**306**	6.8	7.0	6.8	6.2	**6.7**
Mean			**6.9**	**7.0**	**6.9**	**6.2**	**6.8**

Table 26: Hectolitre weight (Kg/hl) of *T. aestivum* and *T. durum* genotypes in Central Zone (CZ) AVTs

S. No.	Entries	Code	Vijapur	Junagarh	P.Kheda	Indore	Mean
Irrigated Timely Sown							
T. aestivum							
1	GW322 (C)	**109**	79.9	81.0	80.3	74.8	79.0
2	HI1544 (C)	**110**	83.3	82.8	80.8	82.3	82.3
3	TAW155	**101**	75.5	81.7	82.4	79.0	79.7
4	HI1636	**102**	81.3	81.2	81.2	79.7	80.9
5	MP1361	**103**	80.3	80.9	82.1	79.0	80.6
6	MACS6747	**104**	82.6	82.7	83.7	81.0	82.5
7	HD3377^{B}	**105**	81.9	82.0	80.0	80.6	81.1
8	HI1637	**106**	82.6	83.4	81.4	80.0	81.9
9	RAJ4541^{B}	**107**	85.8	85.2	80.5	85.3	84.2
10	GW513	**108**	82.8	83.2	79.6	82.0	81.9
	Mean		**81.6**	**82.4**	**81.2**	**80.4**	**81.4**
Irrigated Late Sown							
T. aestivum							
1	CG1029*	**205**	81.9	82.4	82.4	82.8	82.4
2	HI1634^{Q}*	**201**	82.6	82.4	82.9	83.4	82.8
3	HD2932 (C)	**202**	80.5	80.3	80.5	81.4	80.7
4	MP3336 (C)	**203**	81.0	83.0	82.5	83.6	82.5
5	HD2864 (C)	**204**	81.9	83.6	81.9	83.2	82.7
	Mean		**81.6**	**82.3**	**82.0**	**82.9**	82.2
Restricted Irrigated Timely Sown							
T. durum							
1	HI8627(d) (C)	**302**	78.7	79.9	82.6	81.7	80.7
2	UAS466(d)(I) (C)	**303**	80.9	79.3	81.3	80.8	80.6
3	DDW47(d)(I) (C)	**308**	80.1	78.9	81.5	80.7	80.3
6	HI 8823(d)	**307**	82.8	82.5	84.5	85.0	83.7
7	MPO1357(d)	**301**	79.3	80.8	82.5	81.6	81.1
8	UAS472(d)	**304**	81.0	79.5	83.2	83.0	81.7
	Mean		**80.5**	**80.2**	**82.6**	**82.1**	81.3
T. aestivum							
4	DBW110 (C)	**305**	78.9	79.0	80.3	80.0	79.6
5	MP3288 (C)	**306**	80.8	80.9	81.9	81.5	81.3
Mean			**79.9**	**80.0**	**81.1**	**80.8**	**80.4**

Table 27: Protein content (%) at 12% moisture basis of *T. aestivum* and *T. durum* genotypes in Central Zone (CZ) AVTs

S. No.	Entries	Code	Vijapur	Junagarh	P.Kheda	Indore	Mean
Irrigated Timely Sown							
T. aestivum							
1	GW322 (C)	**109**	9.4	10.7	11.0	8.5	**9.9**
2	HI1544 (C)	**110**	10.6	11.7	11.0	9.2	**10.6**
3	TAW155	**101**	10.6	12.4	10.9	9.9	**11.0**
4	HI1636	**102**	10.9	12.5	11.2	9.9	**11.1**
5	MP1361	**103**	10.9	10.9	11.2	8.0	**10.2**
6	MACS6747	**104**	11.2	13.0	12.1	9.2	**11.4**
7	HD3377^{B}	**105**	12.9	13.4	10.1	10.1	**11.6**
8	HI1637	**106**	11.2	12.5	11.8	8.1	**10.9**
9	RAJ4541^{B}	**107**	11.1	13.1	11.9	9.3	**11.4**
10	GW513	**108**	9.9	11.5	10.3	9.3	**10.2**
	Mean		**10.9**	**12.2**	**11.2**	**9.2**	**10.8**
Irrigated Late Sown							
T. aestivum							
1	CG1029*	**205**	10.6	12.6	10.9	8.4	**10.6**
2	HI1634^{Q}*	**201**	10.8	13.0	11.8	8.5	**11.0**
3	HD2932 (C)	**202**	12.0	13.3	12.5	9.7	**11.9**
4	MP3336 (C)	**203**	13.1	13.6	12.2	8.4	**11.8**
5	HD2864 (C)	**204**	10.3	13.2	11.2	10.0	**11.2**
	Mean		**11.4**	**13.1**	**11.7**	**9.0**	**11.3**
Restricted Irrigated Timely Sown							
T. durum							
1	HI8627(d) (C)	**302**	14.4	14.7	10.7	10.8	**12.7**
2	UAS466(d)(I) (C)	**303**	12.5	13.4	11.2	9.5	**11.6**
3	DDW47(d)(I) (C)	**308**	13.2	13.8	12.1	10.2	**12.3**
6	HI 8823(d)	**307**	12.9	13.8	10.7	9.9	**11.8**
7	MPO1357(d)	**301**	14.4	14.0	10.9	10.2	**12.4**
8	UAS472(d)	**304**	11.6	12.9	9.4	8.5	**10.6**
	Mean		**13.2**	**13.8**	**10.8**	**9.9**	**11.9**
T. aestivum							
4	DBW110 (C)	**305**	11.8	13.4	11.0	10.0	**11.6**
5	MP3288 (C)	**306**	13.9	13.3	12.0	10.8	**12.5**
Mean			**12.8**	**13.4**	**11.5**	**10.4**	**12.0**

Table 28: Sedimentation value (ml) of *T. aestivum* and *T. durum* genotypes in Central Zone (CZ) AVTs

S. No.	Entries	Code	Vijapur	Junagarh	P'Kheda	Indore	Mean
Irrigated Timely Sown							
T. aestivum							
1	GW322 (C)	**109**	43	41	47	44	**44**
2	HI1544 (C)	**110**	46	43	71	44	**51**
3	TAW155	**101**	57	74	47	67	**61**
4	HI1636	**102**	47	57	43	48	**49**
5	MP1361	**103**	43	48	48	51	**48**
6	MACS6747	**104**	50	50	49	55	**51**
7	HD3377^{B}	**105**	61	64	47	62	**59**
8	HI1637	**106**	47	48	72	46	**53**
9	RAJ4541^{B}	**107**	47	43	56	47	**48**
10	GW513	**108**	41	43	49	49	**46**
	Mean		**48**	**51**	**53**	**51**	**51**
Irrigated Late Sown							
T. aestivum							
1	CG1029*	**205**	45	57	45	40	**47**
2	HI1634^{Q}*	**201**	51	57	50	46	**51**
3	HD2932 (C)	**202**	60	64	65	54	**61**
4	MP3336 (C)	**203**	48	48	51	41	**47**
5	HD2864 (C)	**204**	47	57	47	42	**48**
	Mean		**50**	**57**	**52**	**45**	**51**
Restricted Irrigated Timely Sown							
T. durum							
1	HI8627(d) (C)	**302**	48	39	31	29	**37**
2	UAS466(d)(I) (C)	**303**	50	48	42	39	**45**
3	DDW47(d)(I) (C)	**308**	48	53	46	39	**46**
6	HI 8823(d)	**307**	47	48	39	41	**44**
7	MPO1357(d)	**301**	39	41	35	29	**36**
8	UAS472(d)	**304**	36	39	35	29	**35**
	Mean		**45**	**45**	**38**	**34**	**41**
T. aestivum							
4	DBW110 (C)	**305**	62	74	62	60	**64**
5	MP3288 (C)	**306**	69	67	63	57	**64**
Mean			**65**	**71**	**63**	**59**	**64**

Table 29: Phenol test (Max-10) of *T. aestivum* and *T. durum* genotypes in Central Zone (CZ) AVTs

S. No.	Entries	Code	Vijapur	Junagarh	P.Kheda	Indore	Mean
Irrigated Timely Sown							
T. aestivum							
1	GW322 (C)	**109**	6.5	7.0	6.5	7.0	**6.8**
2	HI1544 (C)	**110**	6.5	6.5	8.0	7.0	**7.0**
3	TAW155	**101**	8.0	8.0	6.0	8.5	**7.6**
4	HI1636	**102**	5.0	7.0	6.0	5.5	**5.9**
5	MP1361	**103**	6.0	6.5	4.5	7.5	**6.1**
6	MACS6747	**104**	6.0	6.0	5.0	6.5	**5.9**
7	HD3377^{B}	**105**	8.0	7.0	6.5	7.5	**7.3**
8	HI1637	**106**	6.5	7.0	7.5	7.5	**7.1**
9	RAJ4541^{B}	**107**	4.0	5.5	7.0	5.0	**5.4**
10	GW513	**108**	4.0	5.0	7.5	4.5	**5.3**
	Mean		**6.0**	**6.5**	**6.4**	**6.6**	**6.4**
Irrigated Late Sown							
T. aestivum							
1	CG1029*	**205**	7.5	8.5	7.5	7.0	**7.6**
2	HI1634^{Q}*	**201**	7.0	7.5	7.0	7.0	**7.1**
3	HD2932 (C)	**202**	4.0	5.0	6.0	3.0	**4.5**
4	MP3336 (C)	**203**	3.5	5.0	6.5	4.0	**4.8**
5	HD2864 (C)	**204**	4.0	4.5	5.5	3.0	**4.3**
	Mean		**5.2**	**6.1**	**6.5**	**4.8**	**5.7**
Restricted Irrigated Timely Sown							
T. durum							
1	HI8627(d) (C)	**302**	0.0	0.0	0.0	0.0	**0.0**
2	UAS466(d)(I) (C)	**303**	0.0	0.0	0.0	0.0	**0.0**
3	DDW47(d)(I) (C)	**308**	0.0	0.0	0.0	0.0	**0.0**
6	HI 8823(d)	**307**	0.0	0.0	0.0	0.0	**0.0**
7	MPO1357(d)	**301**	0.0	0.0	0.0	0.0	**0.0**
8	UAS472(d)	**304**	0.0	0.0	0.0	0.0	**0.0**
	Mean		0.0	0.0	0.0	0.0	**0.0**
T. aestivum							
4	DBW110 (C)	**305**	7.5	7.5	8.5	8.0	**7.9**
5	MP3288 (C)	**306**	8.0	8.0	8.5	8.0	**8.1**
Mean			**7.8**	**7.8**	**8.5**	**8.0**	**8.0**

Table 30: Yellow pigment (ppm) of *T. aestivum* and *T. durum* genotypes in Central Zone (CZ) AVTs

S. No.	Entries	Code	Vijapur	Junagarh	P.Kheda	Indore	Mean
Irrigated Timely Sown							
T. aestivum							
1	GW322 (C)	**109**					
2	HI1544 (C)	**110**					
3	TAW155	**101**					
4	HI1636	**102**					
5	MP1361	**103**					
6	MACS6747	**104**					
7	HD3377^{B}	**105**					
8	HI1637	**106**					
9	RAJ4541^{B}	**107**					
10	GW513	**108**					
Irrigated Late Sown							
T. aestivum							
1	CG1029*	**205**					
2	HI1634^{Q}*	**201**					
3	HD2932 (C)	**202**					
4	MP3336 (C)	**203**					
5	HD2864 (C)	**204**					
Restricted Irrigated Timely Sown							
T. durum							
1	HI8627(d) (C)	**302**	5.45	5.43	5.77	5.84	**5.62**
2	UAS466(d)(I) (C)	**303**	6.68	6.94	6.52	6.84	**6.75**
3	DDW47(d)(I) (C)	**308**	6.84	6.78	7.91	7.46	**7.25**
6	HI 8823(d)	**307**	5.45	5.14	5.35	5.03	**5.24**
7	MPO1357(d)	**301**	5.56	6.24	5.29	7.02	**6.03**
8	UAS472(d)	**304**	5.74	6.16	6.55	6.13	**6.14**
	Mean		**5.95**	**6.11**	**6.23**	**6.39**	**6.17**
T. aestivum							
4	DBW110 (C)	**305**					
5	MP3288 (C)	**306**					

Table 31: Hardness index of *T. aestivum* and*T. durum* genotypes in Central Zone (CZ) AVTs

S. No.	Entries	Code	Vijapur	Junagarh	P.Kheda	Indore	Mean
Irrigated Timely Sown							
T. aestivum							
1	GW322 (C)	**109**				87	87
2	HI1544 (C)	**110**				77	77
3	TAW155	**101**				71	71
4	HI1636	**102**				65	65
5	MP1361	**103**				51	51
6	MACS6747	**104**				61	61
7	HD3377^{B}	**105**				81	81
8	HI1637	**106**				53	53
9	RAJ4541^{B}	**107**				77	77
10	GW513	**108**				65	65
	Mean					**69**	**69**
Irrigated Late Sown							
T. aestivum							
1	CG1029*	**205**				59	59
2	HI1634^{Q}*	**201**				85	85
3	HD2932 (C)	**202**				74	74
4	MP3336 (C)	**203**				69	69
5	HD2864 (C)	**204**				73	73
	Mean					**72**	**72**
Restricted Irrigated Timely Sown							
T. durum							
1	HI8627(d) (C)	**302**				94	94
2	UAS466(d)(I) (C)	**303**				81	81
3	DDW47(d)(I) (C)	**308**				94	94
6	HI 8823(d)	**307**				92	92
7	MPO1357(d)	**301**				94	94
8	UAS472(d)	**304**				80	80
	Mean					89	89
T. aestivum							
4	DBW110 (C)	**305**				75	**75**
5	MP3288 (C)	**306**				85	**85**
Mean						**80**	**80**

Table 32: Grain iron content (ppm) of *T. aestivum* and *T. durum* genotypes in Central Zone (CZ) AVTs

S. No.	Entries	Code	Vijapur	Junagarh	P.Kheda	Indore	Mean
Irrigated Timely Sown							
T. aestivum							
1	GW322 (C)	**109**	33.5	34.7	36.1	35.1	**34.9**
2	HI1544 (C)	**110**	37.1	44.8	37.0	40.4	**39.8**
3	TAW155	**101**	36.8	43.9	37.3	39.0	**39.3**
4	HI1636	**102**	32.9	36.2	35.9	39.6	**36.2**
5	MP1361	**103**	32.2	38.4	37.8	35.9	**36.1**
6	MACS6747	**104**	38.1	40.1	40.1	39.0	**39.3**
7	HD3377^{B}	**105**	38.6	45.3	35.6	40.3	**40.0**
8	HI1637	**106**	34.5	43.8	40.9	35.7	**38.7**
9	RAJ4541^{B}	**107**	36.1	47.3	36.9	39.6	**40.0**
10	GW513	**108**	31.0	44.6	32.7	39.1	**36.9**
	Mean		**35.1**	**41.9**	**37.0**	**38.4**	**38.1**
Irrigated Late Sown							
T. aestivum							
1	CG1029*	**205**	37.4	35.2	35.2	35.9	**35.9**
2	HI1634^{Q}*	**201**	34.9	37.7	39.5	33.3	**36.4**
3	HD2932 (C)	**202**	39.5	35.2	33.8	35.0	**35.9**
4	MP3336 (C)	**203**	39.9	37.0	40.3	36.8	**38.5**
5	HD2864 (C)	**204**	39.8	40.1	37.1	37.6	**38.7**
	Mean		**38.3**	**37.0**	**37.2**	**35.7**	**37.1**
Restricted Irrigated Timely Sown							
T. durum							
1	HI8627(d) (C)	**302**	40.2	40.6	35.3	39.8	**39.0**
2	UAS466(d)(I) (C)	**303**	34.9	40.0	36.7	41.5	**38.3**
3	DDW47(d)(I) (C)	**308**	34.4	37.6	42.0	44.3	**39.6**
6	HI 8823(d)	**307**	38.5	36.9	41.1	39.6	**39.0**
7	MPO1357(d)	**301**	39.6	38.5	37.6	40.2	**39.0**
8	UAS472(d)	**304**	34.3	36.7	35.1	36.6	**35.7**
	Mean		**37.0**	**38.4**	**38.0**	**40.3**	**38.4**
T. aestivum							
4	DBW110 (C)	**305**	38.9	36.0	33.7	41.8	**37.6**
5	MP3288 (C)	**306**	41.3	36.5	38.3	41.1	**39.3**
Mean			**40.1**	**36.3**	**36.0**	**41.5**	**38.5**

Table 33: Grain zinc content (ppm) of *T. aestivum* and *T. durum* genotypes in Central Zone (CZ) AVTs

S. No.	Entries	Code	Vijapur	Junagarh	P.Kheda	Indore	Mean
Irrigated Timely Sown							
T. aestivum							
1	GW322 (C)	**109**	47.3	44.0	41.0	39.6	**43.0**
2	HI1544 (C)	**110**	44.9	43.7	37.7	36.5	**40.7**
3	TAW155	**101**	37.7	48.5	36.6	32.8	**38.9**
4	HI1636	**102**	41.5	44.8	47.6	37.1	**42.8**
5	MP1361	**103**	35.8	43.2	41.9	33.4	**38.6**
6	MACS6747	**104**	42.4	38.5	49.0	32.1	**40.5**
7	HD3377^{B}	**105**	43.5	43.9	33.6	37.4	**39.6**
8	HI1637	**106**	42.6	45.5	44.2	35.2	**41.9**
9	RAJ4541^{B}	**107**	48.3	48.7	44.3	40.2	**45.4**
10	GW513	**108**	37.6	43.0	34.6	38.0	**38.3**
	Mean		**42.2**	**44.4**	**41.1**	**36.2**	**41.0**
Irrigated Late Sown							
T. aestivum							
1	CG1029*	**205**	34.0	35.2	36.7	31.9	**34.5**
2	HI1634^{Q}*	**201**	36.4	38.5	40.3	31.1	**36.6**
3	HD2932 (C)	**202**	40.6	34.1	35.6	33.8	**36.0**
4	MP3336 (C)	**203**	45.5	36.1	41.7	34.3	**39.4**
5	HD2864 (C)	**204**	32.6	35.7	37.6	36.0	**35.5**
	Mean		**37.8**	**35.9**	**38.4**	**33.4**	**36.4**
Restricted Irrigated Timely Sown							
T. durum							
1	HI8627(d) (C)	**302**	39.9	43.8	27.8	37.8	**37.3**
2	UAS466(d)(I) (C)	**303**	30.5	44.4	26.7	36.4	**34.5**
3	DDW47(d)(I) (C)	**308**	34.0	47.4	22.7	38.1	**35.6**
6	HI 8823(d)	**307**	38.9	45.8	28.9	39.2	**38.2**
7	MPO1357(d)	**301**	34.1	43.9	26.0	36.7	**35.2**
8	UAS472(d)	**304**	31.0	42.7	28.9	31.6	**33.6**
	Mean		**34.7**	**44.7**	**26.8**	**36.6**	**35.7**
T. aestivum							
4	DBW110 (C)	**305**	28.3	46.9	19.4	32.6	**31.8**
5	MP3288 (C)	**306**	30.6	40.6	25.8	31.5	**32.1**
Mean			**29.5**	**43.8**	**22.6**	**32.1**	**32.0**

Table 34: Yellow berry (%) of *T. durum* genotypes in Central Zone (CZ) AVTs

S. No.	Entries	Code	Vijapur	Junagarh	P.Kheda	Indore	Mean
Irrigated Timely Sown							
T. aestivum							
1	GW322 (C)	**109**					
2	HI1544 (C)	**110**					
3	TAW155	**101**					
4	HI1636	**102**					
5	MP1361	**103**					
6	MACS6747	**104**					
7	HD3377^{B}	**105**					
8	HI1637	**106**					
9	RAJ4541^{B}	**107**					
10	GW513	**108**					
Irrigated Late Sown							
T. aestivum							
1	CG1029*	**205**					
2	HI1634^{Q}*	**201**					
3	HD2932 (C)	**202**					
4	MP3336 (C)	**203**					
5	HD2864 (C)	**204**					
Restricted Irrigated Timely Sown							
T. durum							
1	HI8627(d) (C)	**302**	0	0	20	10	**8**
2	UAS466(d)(I) (C)	**303**	0	0	20	60	**20**
3	DDW47(d)(I) (C)	**308**	0	0	10	40	**13**
6	HI 8823(d)	**307**	0	20	30	50	**25**
7	MPO1357(d)	**301**	0	0	20	30	**13**
8	UAS472(d)	**304**	0	50	40	70	**40**
	Mean		**0**	**12**	**23**	**43**	**20**
T. aestivum							
4	DBW110 (C)	**305**	0	0	0	20	**5**
5	MP3288 (C)	**306**	0	0	10	0	**3**
Mean					0	0	5

Table 35: Grain appearance score (Max-10) of *T. aestivum* and *T. durum* genotypes in Peninsular Zone (PZ) AVTs

S. No.	Entries	Code	Pune	Dharwad	Niphad	Mean
Irrigated Timely Sown						
T. durum						
1	DDW48(d)^{Q}*	**102**	6.2	6.6	7.0	**6.6**
2	DDW49(d)^{Q}*	**107**	6.6	6.4	7.4	**6.8**
3	UAS428(d) (C)	**106**	6.2	6.6	7.0	**6.6**
4	MACS3949(d) (C)	**104**	6.2	7.0	7.4	**6.9**
5	HI8818(d)	**105**	6.2	6.8	7.2	**6.7**
6	WHD964(d)	**101**	5.8	5.8	6.0	**5.9**
	Mean		**6.2**	**6.5**	**7.0**	**6.6**
T. aestivum						
1	MACS6222 (C)	**103**	6.4	6.2	6.2	**6.3**
2	GW322 (C)	**108**	5.8	5.6	6.6	**6.0**
			6.1	**5.9**	**6.4**	**6.1**
Irrigated Late Sown						
T. aestivum						
1	HI1633*	**210**	5.8	6.0	6.2	**6.0**
2	HD3090 (C)	**203**	5.8	5.4	6.2	**5.8**
3	HD2932 (C)	**207**	5.8	5.8	6.0	**5.9**
4	RAJ4083 (C)	**204**	5.8	6.0	6.6	**6.1**
5	GW519	**201**	5.8	6.2	6.2	**6.1**
6	HI1641	**208**	5.6	6.4	6.6	**6.2**
7	HI1642	**209**	6.2	6.2	7.0	**6.5**
8	HI1646	**202**	5.6	5.8	5.8	**5.7**
9	MACS6749	**206**	5.6	5.8	5.8	**5.7**
10	MACS6752	**211**	5.4	6.0	6.2	**5.9**
11	UAS3008	**205**	5.8	6.0	5.8	**5.9**
	Mean		**5.7**	**6.0**	**6.0**	**6.0**
Restricted Irrigated Timely Sown						
T. aestivum						
1	HI 1605 (C)	**303**	6.2	6.2	6.2	**6.2**
2	NIAW3170(I) (C)	**310**	5.2	6.0	5.8	**5.7**
3	MP 1358	**305**	6.2	6.2	6.2	**6.2**
	Mean		**5.9**	**6.1**	**6.0**	**6.0**
T. durum						
1	NIDW 1149(d)*	**301**	6.4	6.4	7.6	**6.8**
2	UAS446(d) (C)	**302**	6.0	6.2	6.8	**6.3**
3	AKDW 2997-16(d) (C)	**306**	6.0	6.8	6.2	**6.3**
4	HI8805(d)(I) (C)	**307**	6.4	7.4	7.6	**7.1**
5	MACS 4087(d)	**304**	6.4	7.0	8.0	**7.1**
6	UAS 472(d)	**308**	6.0	6.0	7.0	**6.3**
7	MPO 1357(d)^{Q}	**309**	6.4	6.2	7.4	**6.7**
	Mean		**6.2**	**6.6**	**7.2**	**6.7**

Table 36: Hectolitre weight (Kg/hl) of *T. aestivum* and *T. durum* genotypes in Peninsular Zone (PZ) AVTs

S. No.	Entries	Code	Pune	Dharwad	Niphad	Mean
Irrigated Timely Sown						
T. durum						
1	DDW48(d)^{Q}*	**102**	82.3	79.9	83.3	**81.8**
2	DDW49(d)^{Q}*	**107**	83.5	79.5	84.3	**82.4**
3	UAS428(d) (C)	**106**	82.1	80.6	83.4	**82.0**
4	MACS3949(d) (C)	**104**	83.4	81.9	83.9	**83.1**
5	HI8818(d)	**105**	82.5	81.6	83.6	**82.6**
6	WHD964(d)	**101**	82.6	80.6	83.7	**82.3**
	Mean		**82.7**	**80.7**	**83.7**	**82.4**
T. aestivum						
1	MACS6222 (C)	**103**	81.8	79.6	82.2	**81.2**
2	GW322 (C)	**108**	79.4	73.7	79.8	**77.6**
	Mean		**80.6**	**76.7**	**81.0**	**79.4**
Irrigated Late Sown						
T. aestivum						
1	HI1633*	**210**	79.4	78.5	82.6	**80.2**
2	HD3090 (C)	**203**	77.9	75.5	79.6	**77.7**
3	HD2932 (C)	**207**	77.8	75.8	79.2	**77.6**
4	RAJ4083 (C)	**204**	79.6	78.4	81.8	**79.9**
5	GW519	**201**	77.6	77.3	80.0	**78.3**
6	HI1641	**208**	80.3	80.5	82.5	**81.1**
7	HI1642	**209**	80.4	78.9	82.0	**80.4**
8	HI1646	**202**	77.2	75.8	77.3	**76.8**
9	MACS6749	**206**	78.1	78.2	80.5	**78.9**
10	MACS6752	**211**	80.9	80.1	83.6	**81.5**
11	UAS3008	**205**	77.6	77.0	79.5	**78.0**
	Mean		**78.8**	**77.8**	**80.8**	**79.1**
Restricted Irrigated Timely Sown						
T. aestivum						
1	HI 1605 (C)	**303**	80.6	79.9	81.6	**80.7**
2	NIAW3170(I) (C)	**310**	76.7	77.0	78.6	**77.4**
3	MP 1358	**305**	81.5	77.5	80.3	**79.8**
	Mean		**79.6**	**78.1**	**80.2**	**79.3**
T. durum						
1	NIDW 1149(d)*	**301**	78.7	77.3	78.0	**78.0**
2	UAS446(d) (C)	**302**	80.3	80.6	82.2	**81.0**
3	AKDW 2997-16(d) (C)	**306**	81.5	79.5	78.6	**79.9**
4	HI8805(d)(I) (C)	**307**	81.3	80.7	82.3	**81.4**
5	MACS 4087(d)	**304**	81.1	81.4	82.0	**81.5**
6	UAS 472(d)	**308**	81.8	80.3	82.4	**81.5**
7	MPO 1357(d)^{Q}	**309**	82.1	80.9	82.1	**81.7**
	Mean		**81.0**	**80.1**	**81.1**	**80.7**

Table 37: Protein content (%) at 12% moisture basis of *T. aestivum* and *T. durum* genotypes in Peninsular Zone (PZ) AVTs

S. No.	Entries	Code	Pune	Dharwad	Niphad	Mean
Irrigated Timely Sown						
T. durum						
1	DDW48(d)^{Q}*	**102**	11.0	14.2	11.3	**12.2**
2	DDW49(d)^{Q}*	**107**	11.1	13.5	11.1	**11.9**
3	UAS428(d) (C)	**106**	11.6	13.7	11.4	**12.3**
4	MACS3949(d) (C)	**104**	11.6	13.1	11.0	**11.9**
5	HI8818(d)	**105**	12.0	13.2	11.7	**12.3**
6	WHD964(d)	**101**	10.4	12.8	10.3	**11.1**
	Mean		**11.3**	**13.4**	**11.1**	**11.9**
T. aestivum						
1	MACS6222 (C)	**103**	12.1	14.3	12.2	**12.9**
2	GW322 (C)	**108**	10.4	12.5	11.0	**11.3**
	Mean		**11.3**	**13.4**	**11.6**	**12.1**
Irrigated Late Sown						
T. aestivum						
1	HI1633*	**210**	12.1	14.4	12.2	**12.9**
2	HD3090 (C)	**203**	11.9	14.4	12.5	**12.9**
3	HD2932 (C)	**207**	11.7	13.9	10.8	**12.1**
4	RAJ4083 (C)	**204**	12.5	13.0	12.5	**12.7**
5	GW519	**201**	10.6	14.3	12.8	**12.6**
6	HI1641	**208**	10.8	14.5	13.5	**12.9**
7	HI1642	**209**	11.8	15.6	12.7	**13.4**
8	HI1646	**202**	11.3	14.4	11.2	**12.3**
9	MACS6749	**206**	11.5	13.8	12.4	**12.5**
10	MACS6752	**211**	12.6	15.1	12.9	**13.5**
11	UAS3008	**205**	10.4	13.2	11.0	**11.5**
	Mean		**11.6**	**14.2**	**12.2**	**12.7**
Restricted Irrigated Timely Sown						
T. aestivum						
1	HI 1605 (C)	**303**	11.5	13.2	10.5	**11.7**
2	NIAW3170(I) (C)	**310**	12.2	12.5	10.1	**11.6**
3	MP 1358	**305**	12.4	13.4	9.8	**11.9**
	Mean		**12.0**	**13.0**	**10.1**	**11.7**
T. durum						
1	NIDW 1149(d)*	**301**	11.0	11.7	10.8	**11.2**
2	UAS446(d) (C)	**302**	12.3	13.8	11.1	**12.4**
3	AKDW 2997-16(d) (C)	**306**	11.3	11.9	12.1	**11.8**
4	HI8805(d)(I) (C)	**307**	10.8	13.0	12.1	**12.0**
5	MACS 4087(d)	**304**	11.3	12.4	11.5	**11.7**
6	UAS 472(d)	**308**	10.7	10.7	11.1	**10.8**
7	MPO 1357(d)^{Q}	**309**	12.3	12.3	11.7	**12.1**
	Mean		**11.4**	**12.3**	**11.5**	**11.7**

Table 38: Sedimentation value (ml) of *T. aestivum* and *T. durum* genotypes in Peninsular Zone (PZ) AVTs

S. No.	Entries	Code	Pune	Dharwad	Niphad	Mean
Irrigated Timely Sown						
T. durum						
1	DDW48(d)^{Q}*	**102**	39	50	41	**43**
2	DDW49(d)^{Q}*	**107**	43	54	50	**49**
3	UAS428(d) (C)	**106**	40	50	44	**45**
4	MACS3949(d) (C)	**104**	43	54	45	**47**
5	HI8818(d)	**105**	35	46	34	**39**
6	WHD964(d)	**101**	36	46	31	**37**
	Mean		**39**	**50**	**41**	**43**
T. aestivum						
1	MACS6222 (C)	**103**	51	47	47	**48**
2	GW322 (C)	**108**	43	52	48	**48**
	Mean		**47**	**50**	**48**	**48**
Irrigated Late Sown						
T. aestivum						
1	HI1633*	**210**	51	61	53	**55**
2	HD3090 (C)	**203**	54	55	54	**54**
3	HD2932 (C)	**207**	57	61	55	**58**
4	RAJ4083 (C)	**204**	60	64	61	**62**
5	GW519	**201**	49	48	56	**51**
6	HI1641	**208**	50	53	57	**53**
7	HI1642	**209**	57	62	65	**62**
8	HI1646	**202**	61	69	62	**64**
9	MACS6749	**206**	47	48	51	**48**
10	MACS6752	**211**	48	56	51	**52**
11	UAS3008	**205**	48	57	55	**54**
	Mean		**53**	**58**	**56**	**56**
Restricted Irrigated Timely Sown						
T. aestivum						
1	HI 1605 (C)	**303**	68	69	66	**68**
2	NIAW3170(I) (C)	**310**	60	70	54	**61**
3	MP 1358	**305**	64	67	63	**65**
	Mean		**64**	**69**	**61**	**65**
T. durum						
1	NIDW 1149(d)*	**301**	41	35	39	**38**
2	UAS446(d) (C)	**302**	56	59	54	**56**
3	AKDW 2997-16(d) (C)	**306**	34	53	49	**45**
4	HI8805(d)(I) (C)	**307**	53	51	50	**52**
5	MACS 4087(d)	**304**	37	39	41	**39**
6	UAS 472(d)	**308**	36	32	32	**34**
7	MPO 1357(d)^{Q}	**309**	34	38	39	**37**
	Mean		**42**	**44**	**43**	**43**

Table 39: Phenol test (Max-10) of *T. aestivum* and *T. durum* genotypes in Peninsular Zone (PZ) AVTs

S. No.	Entries	Code	Pune	Dharwad	Niphad	Mean
Irrigated Timely Sown						
T. durum						
1	DDW48(d)^{Q}*	**102**	0.0	0.0	0.0	**0.0**
2	DDW49(d)^{Q}*	**107**	0.0	0.0	0.0	**0.0**
3	UAS428(d) (C)	**106**	0.0	0.0	0.0	**0.0**
4	MACS3949(d) (C)	**104**	0.0	0.0	0.0	**0.0**
5	HI8818(d)	**105**	0.0	0.0	0.0	**0.0**
6	WHD964(d)	**101**	0.0	0.0	0.0	**0.0**
	Mean		0.0	0.0	0.0	**0.0**
T. aestivum						
1	MACS6222 (C)	**103**	8.0	8.5	8.5	**8.3**
2	GW322 (C)	**108**	8.0	8.5	8.0	**8.2**
	Mean		**8.0**	**8.5**	**8.3**	**8.3**
Irrigated Late Sown						
T. aestivum						
1	HI1633*	**210**	7.5	7.5	6.0	**7.0**
2	HD3090 (C)	**203**	8.0	8.0	6.0	**7.3**
3	HD2932 (C)	**207**	5.5	6.0	5.0	**5.5**
4	RAJ4083 (C)	**204**	8.0	7.5	6.0	**7.2**
5	GW519	**201**	6.5	6.5	5.0	**6.0**
6	HI1641	**208**	7.5	7.5	6.0	**7.0**
7	HI1642	**209**	8.0	8.0	6.5	**7.5**
8	HI1646	**202**	7.5	7.5	5.5	**6.8**
9	MACS6749	**206**	6.0	6.0	4.5	**5.5**
10	MACS6752	**211**	7.5	7.5	5.5	**6.8**
11	UAS3008	**205**	8.0	8.0	6.5	**7.5**
	Mean		**7.3**	**7.3**	**5.7**	**6.7**
Restricted Irrigated Timely Sown						
T. aestivum						
1	HI 1605 (C)	**303**	6.5	5.5	6	**6.0**
2	NIAW3170(I) (C)	**310**	8.5	7.5	7.5	**7.8**
3	MP 1358	**305**	6.0	7.0	6.5	**6.5**
	Mean		**7.0**	**6.7**	**6.7**	**6.8**
T. durum						
1	NIDW 1149(d)*	**301**	0.0	0.0	0.0	**0.0**
2	UAS446(d) (C)	**302**	0.0	0.0	0.0	**0.0**
3	AKDW 2997-16(d) (C)	**306**	0.0	0.0	0.0	**0.0**
4	HI8805(d)(I) (C)	**307**	0.0	0.0	0.0	**0.0**
5	MACS 4087(d)	**304**	0.0	0.0	0.0	**0.0**
6	UAS 472(d)	**308**	0.0	0.0	0.0	**0.0**
7	MPO 1357(d)^{Q}	**309**	0.0	0.0	0.0	**0.0**
	Mean		0.0	0.0	0.0	**0.0**

Table 40: Yellow pigment (ppm) of *T. aestivum* and *T. durum* genotypes in Peninsular Zone (PZ) AVTs

S. No.	Entries	Code	Pune	Dharwad	Niphad	Mean
Irrigated Timely Sown						
T. durum						
1	DDW48(d)^{Q}*	**102**	6.26	5.58	5.84	**5.90**
2	DDW49(d)^{Q}*	**107**	5.45	5.84	4.72	**5.34**
3	UAS428(d) (C)	**106**	4.85	4.64	4.35	**4.61**
4	MACS3949(d) (C)	**104**	5.61	5.27	4.61	**5.16**
5	HI8818(d)	**105**	6.37	5.43	4.48	**5.43**
6	WHD964(d)	**101**	8.80	8.75	7.12	**8.22**
	Mean		**6.22**	**5.92**	**5.19**	**5.78**
T. aestivum						
1	MACS6222 (C)	**103**	3.20	2.23	2.34	2.59
2	GW322 (C)	**108**	1.92	2.03	1.58	1.84
	Mean		**2.56**	**2.13**	**1.96**	**2.22**
Irrigated Late Sown						
T. aestivum						
1	HI1633*	**210**				
2	HD3090 (C)	**203**				
3	HD2932 (C)	**207**				
4	RAJ4083 (C)	**204**				
5	GW519	**201**				
6	HI1641	**208**				
7	HI1642	**209**				
8	HI1646	**202**				
9	MACS6749	**206**				
10	MACS6752	**211**				
11	UAS3008	**205**				
Restricted Irrigated Timely Sown						
T. aestivum						
1	HI 1605 (C)	**303**	1.89	1.42	1.24	**1.52**
2	NIAW3170(I) (C)	**310**	2.34	1.53	1.66	**1.84**
3	MP 1358	**305**	2.10	1.95	1.74	**1.93**
	Mean		**2.11**	**1.63**	**1.55**	**1.76**
T. durum						
1	NIDW 1149(d)*	**301**	4.14	4.04	3.78	**3.99**
2	UAS446(d) (C)	**302**	5.35	4.33	4.59	**4.75**
3	AKDW 2997-16(d) (C)	**306**	3.36	3.54	3.02	**3.31**
4	HI8805(d)(I) (C)	**307**	5.09	4.80	3.80	**4.56**
5	MACS 4087(d)	**304**	3.05	2.84	2.89	**2.92**
6	UAS 472(d)	**308**	5.90	5.14	4.88	**5.30**
7	MPO 1357(d)^{Q}	**309**	5.56	5.19	4.17	**4.97**
	Mean		**4.63**	**4.27**	**3.87**	**4.26**

Table 41: Hardness index of *T. aestivum* and *T. durum* genotypes in Peninsular Zone (PZ) AVTs

S. No.	Entries	Code	Pune	Dharwad	Niphad	Mean
Irrigated Timely Sown						
T. durum						
1	DDW48(d)^{Q}*	**102**	101			101
2	DDW49(d)^{Q}*	**107**	105			105
3	UAS428(d) (C)	**106**	102			102
4	MACS3949(d) (C)	**104**	92			92
5	HI8818(d)	**105**	99			99
6	WHD964(d)	**101**	91			91
	Mean		**98**			**98**
T. aestivum						
1	MACS6222 (C)	**103**	87			87
2	GW322 (C)	**108**	79			79
	Mean		**83**			**83**
Irrigated Late Sown						
T. aestivum						
1	HI1633*	**210**	69			69
2	HD3090 (C)	**203**	69			69
3	HD2932 (C)	**207**	63			63
4	RAJ4083 (C)	**204**	71			71
5	GW519	**201**	51			51
6	HI1641	**208**	69			69
7	HI1642	**209**	68			68
8	HI1646	**202**	63			63
9	MACS6749	**206**	74			74
10	MACS6752	**211**	72			72
11	UAS3008	**205**	54			54
	Mean		**66**			**66**
Restricted Irrigated Timely Sown						
T. aestivum						
1	HI 1605 (C)	**303**	94			94
2	NIAW3170(I) (C)	**310**	33			33
3	MP 1358	**305**	76			76
	Mean		**67**			**68**
T. durum						
1	NIDW 1149(d)*	**301**	91			91
2	UAS446(d) (C)	**302**	95			95
3	AKDW 2997-16(d) (C)	**306**	88			88
4	HI8805(d)(I) (C)	**307**	96			96
5	MACS 4087(d)	**304**	97			97
6	UAS 472(d)	**308**	91			91
7	MPO 1357(d)^{Q}	**309**	95			95
	Mean		**93**			**93**

Table 42: Grain iron content (ppm) of *T. aestivum* and *T. durum* genotypes in Peninsular Zone (PZ) AVTs

S. No.	Entries	Code	Pune	Dharwad	Niphad	Mean
Irrigated Timely Sown						
T. durum						
1	DDW48(d)^{Q}*	**102**	37.2	41.7	38.0	**39.0**
2	DDW49(d)^{Q}*	**107**	32.1	43.6	37.1	**37.6**
3	UAS428(d) (C)	**106**	39.4	38.1	35.1	**37.5**
4	MACS3949(d) (C)	**104**	37.1	42.1	35.7	**38.3**
5	HI8818(d)	**105**	39.7	41.7	37.9	**39.8**
6	WHD964(d)	**101**	34.1	41.5	37.0	**37.5**
	Mean		**36.6**	**41.5**	**36.8**	**38.3**
T. aestivum						
1	MACS6222 (C)	**103**	36.9	43.6	41.3	**40.6**
2	GW322 (C)	**108**	36.1	37.0	35.9	**36.3**
	Mean		**36.5**	**40.3**	**38.6**	**38.5**
Irrigated Late Sown						
T. aestivum						
1	HI1633*	**210**	38.3	43.7	40.5	**40.8**
2	HD3090 (C)	**203**	33.5	42.6	39.9	**38.7**
3	HD2932 (C)	**207**	40.0	37.4	31.1	**36.2**
4	RAJ4083 (C)	**204**	36.6	39.7	43.4	**39.9**
5	GW519	**201**	36.2	43.9	39.2	**39.8**
6	HI1641	**208**	42.6	40.3	45.1	**42.7**
7	HI1642	**209**	39.3	44.7	44.4	**42.8**
8	HI1646	**202**	36.1	40.6	34.3	**37.0**
9	MACS6749	**206**	36.6	39.5	42.2	**39.4**
10	MACS6752	**211**	36.3	47.1	40.0	**41.1**
11	UAS3008	**205**	34.0	37.9	43.2	**38.4**
	Mean		**37.2**	**41.6**	**40.3**	**39.7**
Restricted Irrigated Timely Sown						
T. aestivum						
1	HI 1605 (C)	**303**	40.4	42.4	45.7	**42.8**
2	NIAW3170(I) (C)	**310**	38.7	39.1	37.6	**38.5**
3	MP 1358	**305**	44.1	42.6	41.2	**42.6**
	Mean		**41.1**	**41.4**	**41.5**	**41.3**
T. durum						
1	NIDW 1149(d)*	**301**	37.4	41.0	36.7	**38.4**
2	UAS446(d) (C)	**302**	37.7	37.7	36.0	**37.1**
3	AKDW 2997-16(d) (C)	**306**	39.3	41.3	40.4	**40.3**
4	HI8805(d)(I) (C)	**307**	38.0	39.3	39.2	**38.8**
5	MACS 4087(d)	**304**	39.8	40.2	42.4	**40.8**
6	UAS 472(d)	**308**	40.3	36.1	37.9	**38.1**
7	MPO 1357(d)^{Q}	**309**	42.6	37.2	40.5	**40.1**
	Mean		**39.3**	**39.0**	**39.0**	**39.1**

Table 43: Grain zinc content (ppm) of *T. aestivum* and *T. durum* genotypes in Peninsular Zone (PZ) AVTs

S. No.	Entries	Code	Pune	Dharwad	Niphad	Mean
Irrigated Timely Sown						
T. durum						
1	DDW48(d)^{Q}*	**102**	40.1	38.0	40.4	**39.5**
2	DDW49(d)^{Q}*	**107**	40.7	39.8	44.2	**41.6**
3	UAS428(d) (C)	**106**	39.0	41.0	44.5	**41.5**
4	MACS3949(d) (C)	**104**	37.3	38.4	41.9	**39.2**
5	HI8818(d)	**105**	36.8	36.7	44.9	**39.5**
6	WHD964(d)	**101**	37.5	37.6	41.2	**38.8**
	Mean		**38.6**	**38.6**	**42.9**	**40.0**
T. aestivum						
1	MACS6222 (C)	**103**	34.9	39.7	45.7	**40.1**
2	GW322 (C)	**108**	34.2	33.8	44.2	**37.4**
	Mean		**34.6**	**36.8**	**45.0**	**38.8**
Irrigated Late Sown						
T. aestivum						
1	HI1633*	**210**	44.1	45.6	38.8	**42.8**
2	HD3090 (C)	**203**	39.1	44.9	38.6	**40.9**
3	HD2932 (C)	**207**	41.0	39.7	33.8	**38.2**
4	RAJ4083 (C)	**204**	40.1	43.4	34.5	**39.3**
5	GW519	**201**	37.0	44.7	35.5	**39.1**
6	HI1641	**208**	44.0	43.7	38.2	**42.0**
7	HI1642	**209**	44.8	45.1	36.2	**42.0**
8	HI1646	**202**	41.8	42.1	32.6	**38.8**
9	MACS6749	**206**	40.7	38.5	33.1	**37.4**
10	MACS6752	**211**	40.8	44.3	35.6	**40.2**
11	UAS3008	**205**	38.8	39.0	35.6	**37.8**
	Mean		**41.1**	**42.8**	**35.7**	**39.9**
Restricted Irrigated Timely Sown						
T. aestivum						
1	HI 1605 (C)	**303**	35.1	38.0	38.9	**37.3**
2	NIAW3170(I) (C)	**310**	35.1	38.4	30.4	**34.6**
3	MP 1358	**305**	38.7	33.9	33.9	**35.5**
	Mean		36.3	36.8	34.4	35.8
T. durum						
1	NIDW 1149(d)*	**301**	36.6	45.9	30.3	**37.6**
2	UAS446(d) (C)	**302**	38.9	46.7	33.5	**39.7**
3	AKDW 2997-16(d) (C)	**306**	36.1	42.0	36.7	**38.3**
4	HI8805(d)(I) (C)	**307**	39.8	44.2	37.2	**40.4**
5	MACS 4087(d)	**304**	38.6	46.1	38.8	**41.2**
6	UAS 472(d)	**308**	38.6	45.1	34.3	**39.3**
7	MPO 1357(d)^{Q}	**309**	40.1	46.0	35.0	**40.4**
	Mean		**38.4**	**45.1**	**35.1**	**39.6**

Table 44: Yellow berry (%) of *T. durum* genotypes in Peninsular Zone (PZ) AVTs

S. No.	Entries	Code	Pune	Dharwad	Niphad	Mean
Irrigated Timely Sown						
T. durum						
1	DDW48(d)^{Q}*	**102**	40	10	0	**17**
2	DDW49(d)^{Q}*	**107**	0	10	30	**13**
3	UAS428(d) (C)	**106**	20	20	50	**30**
4	MACS3949(d) (C)	**104**	10	20	20	**17**
5	HI8818(d)	**105**	0	10	20	**10**
6	WHD964(d)	**101**	70	50	80	**67**
	Mean		**23**	**20**	**33**	**26**
T. aestivum						
1	MACS6222 (C)	**103**				
2	GW322 (C)	**108**				
Irrigated Late Sown						
T. aestivum						
1	HI1633*	**210**				
2	HD3090 (C)	**203**				
3	HD2932 (C)	**207**				
4	RAJ4083 (C)	**204**				
5	GW519	**201**				
6	HI1641	**208**				
7	HI1642	**209**				
8	HI1646	**202**				
9	MACS6749	**206**				
10	MACS6752	**211**				
11	UAS3008	**205**				
Restricted Irrigated Timely Sown						
T. aestivum						
1	HI 1605 (C)	**303**				
2	NIAW3170(I) (C)	**310**				
3	MP 1358	**305**				
T. durum						
1	NIDW 1149(d)*	**301**	60	60	50	**57**
2	UAS446(d) (C)	**302**	0	10	20	**10**
3	AKDW 2997-16(d) (C)	**306**	70	60	10	**47**
4	HI8805(d)(I) (C)	**307**	40	20	20	**27**
5	MACS 4087(d)	**304**	20	30	20	**23**
6	UAS 472(d)	**308**	50	70	60	**60**
7	MPO 1357(d)^{Q}	**309**	0	40	0	**13**
	Mean		**34**	**41**	**26**	**34**

HMW glutenin subunit profiles of AVTs

Table 45: High molecular weight glutenin subunits of *T. aestivum* genotypes in North Hills Zone (NHZ) AVTs

S. No.	Entries	Code	Glu-D1	Glu-A1	Glu-B1	Score
Irrigated Timely Sown						
1	HS 507 (C)	**1901**	5+10	1	7	8
2	HS 562 (C)	**1902**	5+10	1	17+18	10
3	HPW 349 (C)	**1903**	5+10	1	7	8
4	VL 907 (C)	**1905**	5+10	1	17+18	10
5	HS 668	**1904**	5+10	N	7+8	8
6	VL 2036	**1906**	2+12	2*	20	6
Rainfed Timely Sown						
1	HS 507 (C)	**1901**	5+10	1	7	8
2	HS 562 (C)	**1902**	5+10	1	17+18	10
3	HPW 349 (C)	**1903**	5+10	1	7	8
4	VL 907 (C)	**1905**	5+10	1	17+18	10
5	HS 668	**1904**	5+10	N	7+8	8
6	VL 2036	**1906**	2+12	2*	20	6
Restricted Irrigated Late Sown						
1	VL 892 (C)	**1908**	2+12	2*	7	6
2	HS 490 (C)	**1910**	2+12	2*	7	6
3	HS 681	**1901**	2+12	N	13+16	6
4	VL 3022	**1902**	2+12	N	7+8	6
5	HS 680	**1903**	2+12	N	7+8	6
6	VL 3023	**1904**	5+10	N	7+8	6
7	HPW 474	**1905**	5+10	2*	13+16	10
8	UP 3069	**1906**	5+10	2*	7+8	10
9	HPW 473	**1907**	5+10	2*	13+16	10
10	VL 3024	**1909**	5+10	N	7+8	8
11	HS 679	**1911**	5+10	2*	7+8	10

Table 46: High molecular weight glutenin subunits of *T. aestivum* genotypes in North Western Plains Zone (NWPZ) AVTs

S. No.	Entries	Code	Glu-D1	Glu-A1	Glu-B1	Score
Irrigated Timely sown						
1	DBW88 (C)	**101**	5+10	2*	17+18	10
2	DBW187(I) (C)	**102**	5+10	2*	17+18	10
3	HD2967 (C)	**103**	5+10	2*	17+18	10
4	WH1105 (C)	**104**	5+10	2*	7	8
5	DBW222(I) (C)	**105**	5+10	2*	17+18	10
6	HD3086 (C)	**106**	5+10	1	17+18	10
7	PBW550 (C)	**109**	5+10	2*	7+9	9
8	PBW840^{M}	**107**	2+12	2*	7+9	7
9	PBW803	**108**	5+10	2*	-	7
Irrigated Late Sown						
1	HD3298*	**215**	5+10	2*	7+8	10
2	HD3059 (C)	**202**	5+10	2*	17+18	10
3	DBW173 (C)	**204**	5+10	2*	17+18	10
4	WH1021 (C)	**205**	2+12	2*	7+8	8
5	WH1124 (C)	**216**	5+10	1	17+18	10
6	PBW771(I) (C)	**212**	5+10	N	7+9	7
7	HD3334	**201**				
8	HD3332	**203**	5+10	N	7	6
9	PBW811	**206**	5+10	N	7	6
10	DBW291	**207**	5+10	N	7	6
11	WH1264	**208**	2+12	2*	17+18	8
12	PBW812	**209**	5+10	2*	17+18	10
13	JKW261	**210**	5+10	N	7	6
14	DBW290	**211**	5+10	N	17+18	8
15	PBW813	**213**	5+10	N	7	6
16	HD3331$^{\#WB}$	**214**	5+10	N	7	6
17	UP3033	**217**	5+10	2*	7	8
Restricted Irrigated Timely Sown						
1	HD3043 (C)	**302**	5+10	2*	7	8
2	PBW644 (C)	**303**	2+12	1	7+8	8
3	WH1080 (C)	**306**	5+10	1	7	8
4	WH1142 (C)	**308**	5+10	1	7	8
5	NIAW3170(I) (C)	**309**	2+12	N	17+18	6
6	HI1628(I) (C)	**305**	5+10	2*	7	8
7	DBW296	**304**	5+10	2*	13+16	10
8	JAUW672	**307**	5+10	N	17+18	8
9	HUW838$^{\#WB}$	**301**	5+10	N	7	6

Table 47: High molecular weight glutenin subunits of *T. aestivum* genotypes in North Eastern Plains Zone (NEPZ) AVTs

S. No.	Entries	Code	Glu-D1	Glu-A1	Glu-B1	Score
ITS						
1	DBW187 (C)	**102**	5+10	2*	17+18	10
2	K1006 (C)	**103**	2+12	2*	17+18	8
3	DBW39 (C)	**104**	5+10	2*	7+9	9
4	HD2733 (C)	**106**	5+10	2*	7+9	9
5	HD3249(I) (C)	**105**	5+10	N	17+18	8
6	PBW804	**101**	2+12	2*	13+16	8
RITS						
1	HD3293*	**303**	5+10	2*	7	8
2	HD3171 (C)	**301**	5+10	2*	7	8
3	HD2888 (C)	**302**	2+12	N	20	4
4	K1317 (C)	**304**	2+12	N	7	4
5	HI1612 (C)	**305**	5+10	2*	7	8
6	DBW252(I) (C)	**306**	5+10	N	7	6

Table 48: High molecular weight glutenin subunits of *T. aestivum* genotypes in Central Zone (CZ) AVTs

S. No.	Entries	Code	Glu-D1	Glu-A1	Glu-B1	Score
Irrigated Timely Sown						
T. aestivum						
1	GW322 (C)	**109**	2+12	2*	7+8	8
2	HI1544 (C)	**110**	2+12	N	7+8	6
3	TAW155	**101**	5+10	N	7+9	7
4	HI1636	**102**	2+12	N	7+8	6
5	MP1361	**103**	2+12	N	17+18	6
6	MACS6747	**104**	5+10	2*	7+8	10
7	HD3377^{B}	**105**	5+10	N	17+18	8
8	HI1637	**106**	5+10	2*	7+8	10
9	RAJ4541^{B}	**107**	5+10	2*	7+8	10
10	GW513	**108**	5+10	N	17+18	8
Irrigated Late Sown						
T. aestivum						
1	CG1029*	**205**	2+12	2*	7+8	8
2	HI1634^{Q}*	**201**	5+10	2*	7	8
3	HD2932 (C)	**202**	2+12	2*	17+18	8
4	MP3336 (C)	**203**	2+12	2*	7+8	8
5	HD2864 (C)	**204**	2+12	1	7+8	8

Table 49: High molecular weight glutenin subunits of *T. aestivum* genotypes in Peninsular Zone (PZ) AVTs

S. No.	Entries	Code	Glu-D1	Glu-A1	Glu-B1	Score
T. aestivum						
1	MACS6222 (C)	**103**	2+12	2*	7+9	7
2	GW322 (C)	**108**	2+12	2*	7+8	8
Irrigated Late Sown						
T. aestivum						
1	HI1633*	**210**	5+10	2*	7	8
2	HD3090 (C)	**203**	5+10	1	7	8
3	HD2932 (C)	**207**	2+12	2*	17+18	8
4	RAJ4083 (C)	**204**	5+10	1	7+8	10
5	GW519	**201**	5+10	2*	7+8	10
6	HI1641	**208**	5+10	N	7+8	8
7	HI1642	**209**	5+10	N	7+8	8
8	HI1646	**202**	5+10	2*	17+18	10
9	MACS6749	**206**	5+10	N	17+18	8
10	MACS6752	**211**	5+10	N	7+8	8
11	UAS3008	**205**	5+10	N	7+8	8
Restricted Irrigated Timely Sown						
T. aestivum						
1	HI 1605 (C)	**303**	5+10	2*	7	8
2	NIAW3170(I) (C)	**310**	2+12	N	17+18	6
3	MP 1358	**305**	5+10	2*	7+8	10

Table 50: High molecular weight glutenin subunits of *T. aestivum* genotypes in HYPT trial

S. No.	Entries	Code	Glu-D1	Glu-A1	Glu-B1	Score
T. aestivum						
1	HD3378	**SPL-HYPT-9**	5+10	N	7	6
2	DBW187*	**SPL-HYPT-6**	5+10	2*	17+18	10
3	DBW303*	**SPL-HYPT-4**	5+10	2*	7	8
4	DBW327	**SPL-HYPT-1**	5+10	N	7+9	7
5	DBW328	**SPL-HYPT-13**	5+10	N	17+18	8
6	DBW329	**SPL-HYPT-7**	5+10	N	7+9	7
7	DBW330	**SPL-HYPT-12**	5+10	N	17+18	8
8	DBW331	**SPL-HYPT-14**	5+10	2*	17+18	10
9	DBW332	**SPL-HYPT-3**	5+10	N	7+9	7
10	DBW333	**SPL-HYPT-11**	5+10	N	7	6
11	WH1270*	**SPL-HYPT-10**	5+10	2*	7	8
12	WH1252	**SPL-HYPT-8**	5+10	N	7	6
13	HD3086 (C)	**SPL-HYPT-2**	5+10	1	17+18	10
14	HD2967 (C)	**SPL-HYPT-5**	5+10	2*	17+18	10

SECTION B

SPECIAL TRIALS, IVT and QCWBN

i. HYPT and CI-HYT

ii. Dicoccum Trial

iii. QCWBN

SPECIAL TRIALS

High Yield Potential Trial and CI-HYT (Tables 1 - 13)

Under this trial, fifteen entries including two checks from five centres (Karnal, Ludhiana, Pantnagar, Delhi and Hisar) were evaluated for grain appearance, hectolitre weight, protein content, sedimentation value, hardness index, phenol test and Iron & Zinc content.

Dicoccum Trial (Tables 14-17)

Four dicoccum entries along with three checks from two centres of PZ namely Dharwad, and Pune were analysed for 1000 grain weight (TGW), protein content , sedimentation value and yellow pigments content.

HYPT Trial

Table 1: Grain appearance score (Max.10) of *T. aestivum* entries of HYPT Trial

S. No.	Entry	Trial Code	Ludhiana	Hisar	Karnal	Pantnagar	Delhi	Mean
1	DBW303*	**4**	6.2	6.0	6.6	6.0	5.4	**6.0**
2	DBW187*	**6**	6.0	6.0	6.2	6.2	5.6	**6.0**
3	WH1270*	**10**	5.8	5.8	6.4	6.4	6.0	**6.1**
4	HD2967 (C)	**5**	6.0	5.8	5.6	6.0	5.8	**5.8**
5	HD3086 (C)	**2**	6.4	6.6	6.6	6.8	5.8	**6.4**
6	DBW327	**1**	6.6	6.4	6.8	7.2	6.0	**6.6**
7	DBW332	**3**	5.8	6.0	6.6	6.6	5.4	**6.1**
8	DBW329	**7**	6.0	5.6	6.4	6.0	5.4	**5.9**
9	WH1252	**8**	6.2	5.2	6.6	6.2	6.0	**6.0**
10	HD3378	**9**	6.0	5.6	6.2	6.2	5.8	**6.0**
11	DBW333	**11**	6.0	6.6	5.8	6.2	6.2	**6.2**
12	DBW330	**12**	6.2	6.4	6.4	6.4	6.2	**6.3**
13	DBW328	**13**	6.2	6.4	6.6	5.8	5.8	**6.2**
14	DBW331	**14**	6.0	5.8	6.6	6.0	5.2	**5.9**
	Mean		**6.1**	**6.0**	**6.4**	**6.3**	**5.8**	**6.1**

Table 2: Hectolitre weight (kg/hl) of *T. aestivum* entries of HYPT Trial

S. No.	Entry	Trial Code	Ludhiana	Hisar	Karnal	Pantnagar	Delhi	Mean
1	DBW303*	**4**	81.5	79.3	78.0	79.9	78.5	**79.4**
2	DBW187*	**6**	80.3	76.8	77.0	80.3	78.9	**78.7**
3	WH1270*	**10**	82.1	78.0	80.2	81.3	81.1	**80.5**
4	HD2967 (C)	**5**	80.1	76.7	73.0	79.1	79.6	**77.7**
5	HD3086 (C)	**2**	81.7	81.0	79.4	79.5	78.8	**80.1**
6	DBW327	**1**	82.5	77.0	81.2	80.6	81.7	**80.6**
7	DBW332	**3**	80.7	76.6	76.5	81.7	80.6	**79.2**
8	DBW329	**7**	78.9	77.5	77.0	80.1	79.7	**78.6**
9	WH1252	**8**	82.1	71.5	80.0	80.6	81.0	**79.0**
10	HD3378	**9**	81.3	79.5	77.0	78.7	79.9	**79.3**
11	DBW333	**11**	80.1	80.3	79.0	78.4	80.6	**79.7**
12	DBW330	**12**	78.9	77.0	75.0	77.4	78.4	**77.3**
13	DBW328	**13**	81.7	78.2	79.6	78.9	80.3	**79.7**
14	DBW331	**14**	79.9	76.0	76.2	79.7	76.9	**77.7**
	Mean		**80.8**	**77.5**	**77.8**	**79.7**	**79.7**	**79.1**

Table 3: Protein content (%) at 12% moisture basis of *T. aestivum* entries of HYPT Trial

S. No.	Entry	Trial Code	Ludhiana	Hisar	Karnal	Pantnagar	Delhi	Mean
1	DBW303*	**4**	11.6	13.3	13.1	12.0	13.4	**12.7**
2	DBW187*	**6**	9.3	13.6	13.2	10.9	13.7	**12.2**
3	WH1270*	**10**	11.6	13.0	12.4	12.1	12.6	**12.4**
4	HD2967 (C)	**5**	9.4	13.2	12.5	10.4	12.7	**11.6**
5	HD3086 (C)	**2**	9.8	13.0	12.4	10.8	13.9	**12.0**
6	DBW327	**1**	9.4	13.1	12.0	10.4	11.5	**11.3**
7	DBW332	**3**	10.5	12.9	12.9	10.2	11.9	**11.7**
8	DBW329	**7**	11.3	12.9	12.7	10.7	12.9	**12.1**
9	WH1252	**8**	11.7	14.2	12.7	12.2	13.4	**12.9**
10	HD3378	**9**	9.7	12.6	13.0	10.3	13.6	**11.8**
11	DBW333	**11**	9.9	13.4	12.5	12.2	14.1	**12.4**
12	DBW330	**12**	10.6	13.1	12.3	12.0	12.2	**12.1**
13	DBW328	**13**	12.0	13.3	13.5	11.4	14.1	**12.8**
14	DBW331	**14**	10.3	13.1	12.6	11.1	12.6	**11.9**
	Mean		**10.5**	**13.2**	**12.7**	**11.2**	**13.0**	**12.1**

Table 4: Sedimentation value (ml) of *T. aestivum* entries of HYPT Trial

S. No.	Entry	Trial Code	Ludhiana	Hisar	Karnal	Pantnagar	Delhi	Mean
1	DBW303*	**4**	64.4	66.7	69.1	58.7	65.3	**64.8**
2	DBW187*	**6**	59.7	73.8	73.8	64.4	71.9	**68.7**
3	WH1270*	**10**	62.5	60.6	58.3	67.2	62.0	**62.1**
4	HD2967 (C)	**5**	58.7	70.0	68.1	59.7	62.5	**63.8**
5	HD3086 (C)	**2**	52.6	58.7	64.4	63.4	71.9	**62.2**
6	DBW327	**1**	54.5	62.0	60.6	57.3	60.1	**58.9**
7	DBW332	**3**	65.3	69.1	71.4	64.4	72.8	**68.6**
8	DBW329	**7**	65.3	66.7	72.8	60.6	73.8	**67.9**
9	WH1252	**8**	58.7	60.6	62.0	57.3	60.6	**59.9**
10	HD3378	**9**	59.7	63.4	64.4	55.9	71.4	**63.0**
11	DBW333	**11**	55.9	65.3	71.4	61.6	71.4	**65.1**
12	DBW330	**12**	57.8	70.0	64.4	57.8	66.7	**63.3**
13	DBW328	**13**	70.0	65.3	72.4	52.6	69.1	**65.9**
14	DBW331	**14**	56.8	57.3	62.0	57.3	72.8	**61.3**
	Mean		**60.1**	**65.0**	**66.8**	**59.9**	**68.0**	**64.0**

Table 5: Hardness index of *T. aestivum* entries of HYPT Trial

S. No.	Entry	Trial Code	Ludhiana	Hisar	Karnal	Pantnagar	Delhi	Mean
1	DBW303*	**4**					74	74
2	DBW187*	**6**					79	79
3	WH1270*	**10**					79	79
4	HD2967 (C)	**5**					82	82
5	HD3086 (C)	**2**					80	80
6	DBW327	**1**					82	82
7	DBW332	**3**					74	74
8	DBW329	**7**					71	71
9	WH1252	**8**					66	66
10	HD3378	**9**					80	80
11	DBW333	**11**					66	66
12	DBW330	**12**					63	63
13	DBW328	**13**					76	76
14	DBW331	**14**					67	67
	Mean						74	74

Table 6: Phenol test score (Max. 10) of *T. aestivum* entries of HYPT Trial

S. No.	Entry	Trial Code	Ludhiana	Hisar	Karnal	Pantnagar	Delhi	Mean
1	DBW303*	**4**	6.5	5.0	6.5	6.0	7.5	**6.3**
2	DBW187*	**6**	6.0	7.0	7.5	7.5	8.0	**7.2**
3	WH1270*	**10**	7.5	5.5	7.5	7.5	6.5	**6.9**
4	HD2967 (C)	**5**	6.0	6.0	6.5	5.5	7.0	**6.2**
5	HD3086 (C)	**2**	7.0	4.5	7.0	7.0	8.0	**6.7**
6	DBW327	**1**	6.5	5.0	7.5	7.5	8.0	**6.9**
7	DBW332	**3**	7.0	4.5	7.0	6.0	7.0	**6.3**
8	DBW329	**7**	7.5	7.5	7.5	7.0	7.0	**7.3**
9	WH1252	**8**	6.5	5.0	6.0	6.0	6.5	**6.0**
10	HD3378	**9**	7.5	5.5	6.5	6.5	6.0	**6.4**
11	DBW333	**11**	6.5	5.5	6.5	5.5	6.0	**6.0**
12	DBW330	**12**	6.0	6.0	7.0	6.0	6.5	**6.3**
13	DBW328	**13**	7.5	7.0	7.0	6.0	7.0	**6.9**
14	DBW331	**14**	8.0	8.0	8.0	6.0	7.2	**7.4**
	Mean		**6.9**	**5.9**	**7.0**	**6.4**	**7.0**	**6.6**

Table 7: Grain iron content (ppm) of *T. aestivum* entries of HYPT Trial

S. No.	Entry	Trial Code	Ludhiana	Hisar	Karnal	Pantnagar	Delhi	Mean
1	DBW303*	**4**	35.5	35.0	37.6	43.0	37.2	**37.7**
2	DBW187*	**6**	37.9	44.7	39.9	42.2	42.7	**41.5**
3	WH1270*	**10**	38.1	32.1	36.2	45.6	37.5	**37.9**
4	HD2967 (C)	**5**	31.5	36.2	41.3	43.1	36.6	**37.7**
5	HD3086 (C)	**2**	33.5	40.2	45.1	46.4	46.2	**42.3**
6	DBW327	**1**	39.1	38.5	36.7	43.0	37.0	**38.9**
7	DBW332	**3**	31.9	35.0	38.1	41.7	41.6	**37.7**
8	DBW329	**7**	38.8	37.1	44.2	37.9	43.9	**40.4**
9	WH1252	**8**	41.9	37.1	41.2	46.3	45.9	**42.5**
10	HD3378	**9**	34.9	36.9	36.2	40.0	43.8	**38.4**
11	DBW333	**11**	37.5	38.1	41.4	44.2	48.5	**41.9**
12	DBW330	**12**	33.2	39.0	38.2	49.8	41.0	**40.2**
13	DBW328	**13**	38.3	39.6	43.5	49.8	40.6	**42.4**
14	DBW331	**14**	43.4	34.8	38.5	38.1	41.6	**39.3**
	Mean		**36.8**	**37.5**	**39.9**	**43.7**	**41.7**	**39.9**

Table 8: Grain zinc content (ppm) of *T .aestivum* entries of HYPT Trial

S. No.	Entry	Trial Code	Ludhiana	Hisar	Karnal	Pantnagar	Delhi	Mean
1	DBW303*	**4**	29.7	44.6	29.4	29.3	54.9	**37.6**
2	DBW187*	**6**	32.7	42.6	26.4	28.6	55.2	**37.1**
3	WH1270*	**10**	31.7	44.1	28.8	29.8	54.4	**37.8**
4	HD2967 (C)	**5**	26.3	47.9	32.5	25.4	51.5	**36.7**
5	HD3086 (C)	**2**	28.7	49.4	29.5	29.4	54.2	**38.2**
6	DBW327	**1**	39.2	47.5	28.7	29.6	52.3	**39.5**
7	DBW332	**3**	25.6	37.0	28.4	25.8	55.4	**34.4**
8	DBW329	**7**	28.6	44.5	33.8	29.1	57.3	**38.7**
9	WH1252	**8**	27.3	52.8	28.8	28.6	58.7	**39.2**
10	HD3378	**9**	24.7	42.1	29.7	24.9	40.5	**32.4**
11	DBW333	**11**	33.3	52.3	30.8	29.3	59.3	**41.0**
12	DBW330	**12**	32.4	40.9	30.7	27.8	46.2	**35.6**
13	DBW328	**13**	32.1	44.0	29.6	28.6	56.4	**38.1**
14	DBW331	**14**	34.1	46.1	29.5	25.4	59.5	**38.9**
	Mean		**30.5**	**45.4**	**29.8**	**28.0**	**54.0**	**37.5**

CI-HYT Trial

Table 9: Grain appearance score (Max.10) of *T. aestivum* entries of CI-HYT Trial

S. No.	Variety	CI-HYT	Ludhiana	Hisar	Karnal	P.Nagar	Delhi	Mean
1	DBW187 (C)	**11**	6.2	5.0	6.6	6.0	5.8	**5.9**
2	HD3086 (C)	**17**	6.4	6.0	6.6	6.4	5.6	**6.2**
3	HD2967 (C)	**19**	5.6	5.8	6.2	6.4	5.8	**6.0**
4	DBW340	**1**	6.2	5.6	6.8	6.0	5.4	**6.0**
5	HD3374	**2**	5.0	5.2	6.2	5.8	5.6	**5.6**
6	DBW341	**3**	6.2	5.2	7.0	6.0	5.2	**5.9**
7	DBW338	**4**	6.8	5.2	6.6	6.2	5.0	**6.0**
8	PBW846	**5**	6.0	6.4	6.8	5.8	5.6	**6.1**
9	WH1285	**6**	5.0	5.2	6.0	5.4	5.2	**5.4**
10	HD3375	**7**	5.8	5.2	6.6	6.6	5.0	**5.8**
11	HD3373	**8**	5.8	4.8	6.6	6.4	5.2	**5.8**
12	DBW337	**9**	6.0	5.2	6.4	5.8	5.2	**5.7**
13	PBW847	**10**	5.4	6.2	6.6	6.2	5.6	**6.0**
14	UP3066	**12**	6.0	5.8	6.0	6.6	5.6	**6.0**
15	UP3068	**13**	5.8	5.0	5.8	6.2	4.8	**5.5**
16	PBW844	**14**	6.2	4.8	6.4	6.2	5.6	**5.8**
17	DBW339	**15**	6.2	5.0	6.2	6.2	5.6	**5.8**
18	DBW299	**16**	6.4	6.4	6.4	6.6	5.0	**6.2**
19	DBW336	**18**	6.0	5.2	6.4	6.4	5.6	**5.9**
20	WH1287	**20**	6.0	6.4	6.8	6.6	5.6	**6.3**
21	WH1286	**21**	6.0	6.4	6.8	6.2	6.0	**6.3**
22	PBW843	**22**	6.0	5.6	6.6	5.8	5.8	**6.0**
23	HD3379	**23**	5.4	4.8	5.0	6.0	5.4	**5.3**
24	DBW281	**24**	6.4	5.4	6.6	6.6	5.8	**6.2**
25	UP3067	**25**	5.2	5.6	6.4	6.2	5.6	**5.8**
	Mean		**5.9**	**5.5**	**6.4**	**6.2**	**5.5**	**5.9**

Table 10: Hectolitre weight (kg/hl) of *T. aestivum* entries of CI-HYT Trial

S. No.	Variety	CI-HYT	Ludhiana	Hisar	Karnal	P.Nagar	Delhi	Mean
1	DBW187 (C)	**11**	80.1	75.0	78.0	78.6	79.4	**78.2**
2	HD3086 (C)	**17**	80.0	76.6	79.5	78.6	77.7	**78.5**
3	HD2967 (C)	**19**	76.3	74.0	75.6	79.7	78.9	**76.9**
4	DBW340	**1**	80.7	74.4	78.0	79.5	78.1	**78.1**
5	HD3374	**2**	73.2	75.0	73.0	77.1	77.6	**75.2**
6	DBW341	**3**	76.1	74.2	77.0	77.3	74.5	**75.8**
7	DBW338	**4**	74.9	73.5	77.0	79.0	73.3	**75.5**
8	PBW846	**5**	77.1	78.0	78.3	77.8	78.5	**77.9**
9	WH1285	**6**	73.2	74.0	71.4	75.1	74.3	**73.6**
10	HD3375	**7**	78.7	76.0	77.0	79.9	75.1	**77.3**
11	HD3373	**8**	75.3	73.3	79.5	78.9	75.5	**76.5**
12	DBW337	**9**	79.8	75.3	75.4	78.2	76.8	**77.1**
13	PBW847	**10**	77.2	75.6	80.0	79.1	79.5	**78.3**
14	UP3066	**12**	75.1	77.0	77.4	79.9	75.7	**77.0**
15	UP3068	**13**	78.3	74.0	77.0	77.9	74.7	**76.4**
16	PBW844	**14**	79.3	74.5	80.3	80.2	78.7	**78.6**
17	DBW339	**15**	78.2	72.0	75.7	79.2	76.5	**76.3**
18	DBW299	**16**	80.6	78.0	78.6	80.2	73.3	**78.1**
19	DBW336	**18**	77.6	76.7	77.0	78.6	77.4	**77.5**
20	WH1287	**20**	79.1	76.8	78.0	78.4	77.0	**77.9**
21	WH1286	**21**	76.9	75.0	79.6	79.9	79.0	**78.1**
22	PBW843	**22**	78.7	75.3	77.6	78.6	78.5	**77.7**
23	HD3379	**23**	75.2	74.0	72.5	76.8	75.5	**74.8**
24	DBW281	**24**	81.0	77.7	80.0	78.9	80.8	**79.7**
25	UP3067	**25**	71.2	71.7	73.5	73.7	75.8	**73.2**
	Mean		**77.4**	**75.1**	**77.1**	**78.4**	**76.9**	**77.0**

Table 11: Protein Content (%) at 12% Moisture basis of *T. aestivum* entries of CI-HYT Trial

S. No.	Variety	CI-HYT	Ludhiana	Hisar	Karnal	P.Nagar	Delhi	Mean
1	DBW187 (C)	**11**	12.0	14.2	12.6	11.5	13.4	**12.8**
2	HD3086 (C)	**17**	11.7	13.4	12.5	12.1	13.8	**12.7**
3	HD2967 (C)	**19**	11.4	14.3	12.5	9.6	14.4	**12.5**
4	DBW340	**1**	9.6	14.3	13.3	10.4	14.9	**12.5**
5	HD3374	**2**	11.6	12.4	12.6	11.2	13.0	**12.2**
6	DBW341	**3**	11.4	13.3	12.6	11.2	14.3	**12.6**
7	DBW338	**4**	10.9	12.8	12.0	10.3	12.9	**11.8**
8	PBW846	**5**	12.0	12.9	12.1	9.9	12.6	**11.9**
9	WH1285	**6**	11.4	11.2	12.7	11.2	12.2	**11.7**
10	HD3375	**7**	10.9	13.0	12.5	11.6	13.6	**12.3**
11	HD3373	**8**	11.8	13.4	12.5	11.6	13.5	**12.6**
12	DBW337	**9**	10.4	13.9	13.3	10.4	13.9	**12.4**
13	PBW847	**10**	12.9	14.4	12.4	11.2	13.3	**12.9**
14	UP3066	**12**	10.5	12.4	12.2	10.8	13.1	**11.8**
15	UP3068	**13**	10.9	13.2	12.4	10.2	13.9	**12.1**
16	PBW844	**14**	10.5	13.0	11.3	10.8	12.5	**11.6**
17	DBW339	**15**	11.3	14.8	12.9	11.0	14.4	**12.9**
18	DBW299	**16**	11.5	13.1	12.9	11.0	13.8	**12.4**
19	DBW336	**18**	11.4	12.9	12.3	11.5	12.6	**12.1**
20	WH1287	**20**	10.7	12.9	12.6	11.2	13.9	**12.3**
21	WH1286	**21**	11.5	13.1	12.4	11.3	13.0	**12.3**
22	PBW843	**22**	12.0	13.5	12.5	9.9	13.5	**12.3**
23	HD3379	**23**	11.2	12.8	12.5	11.1	12.6	**12.1**
24	DBW281	**24**	10.5	14.2	12.3	11.3	12.8	**12.2**
25	UP3067	**25**	11.1	13.5	13.1	11.6	12.9	**12.4**
	Mean		**11.3**	**13.3**	**12.5**	**11.0**	**13.4**	**12.3**

Table 12: Sedimentation value (ml) of *T. aestivum* entries of CI-HYT Trial

S. No.	Variety	CI-HYT	Ludhiana	Hisar	Karnal	P.Nagar	Delhi	Mean
1	DBW187 (C)	**11**	71.9	73.8	71.9	72.4	76.2	**73.3**
2	HD3086 (C)	**17**	57.8	55.0	65.4	62.5	69.1	**62.0**
3	HD2967 (C)	**19**	64.4	54.1	62.1	58.8	73.8	**62.6**
4	DBW340	**1**	59.7	62.1	62.1	59.7	76.2	**63.9**
5	HD3374	**2**	63.5	57.3	51.2	52.6	60.6	**57.1**
6	DBW341	**3**	62.1	60.6	52.6	52.2	66.8	**58.9**
7	DBW338	**4**	59.2	59.7	59.7	58.8	74.8	**62.4**
8	PBW846	**5**	69.6	68.2	71.5	61.6	73.8	**68.9**
9	WH1285	**6**	71.0	64.4	62.1	62.1	74.8	**66.9**
10	HD3375	**7**	69.1	69.1	69.1	70.1	75.7	**70.6**
11	HD3373	**8**	70.1	57.3	57.3	57.3	73.4	**63.1**
12	DBW337	**9**	66.8	70.5	73.8	64.4	76.6	**70.4**
13	PBW847	**10**	71.5	71.0	71.9	64.4	72.9	**70.3**
14	UP3066	**12**	63.0	66.8	70.5	62.5	74.3	**67.4**
15	UP3068	**13**	69.1	76.2	73.8	56.9	75.7	**70.3**
16	PBW844	**14**	68.2	73.8	70.1	62.1	70.1	**68.8**
17	DBW339	**15**	67.2	72.9	71.5	62.1	73.8	**69.5**
18	DBW299	**16**	60.2	64.4	71.5	67.2	76.2	**67.9**
19	DBW336	**18**	71.9	66.8	72.9	71.9	76.2	**71.9**
20	WH1287	**20**	64.4	60.6	66.8	67.2	76.2	**67.0**
21	WH1286	**21**	70.1	59.7	59.7	57.3	67.2	**62.8**
22	PBW843	**22**	63.5	54.1	57.8	53.1	65.4	**58.8**
23	HD3379	**23**	71.0	64.4	68.2	62.5	73.8	**68.0**
24	DBW281	**24**	62.5	70.1	66.8	61.6	73.8	**67.0**
25	UP3067	**25**	59.7	69.1	59.7	58.8	72.9	**64.0**
	Mean		**65.9**	**64.9**	**65.6**	**61.6**	**72.8**	**66.2**

Table 13: Phenol test score (Max. 10) of *T. aestivum* entries of CI-HYT Trial

S. No.	Variety	CI-HYT	Ludhiana	Hisar	Karnal	P.Nagar	Delhi	Mean
1	DBW187 (C)	**11**	8.0	8.0	7.5	7.5	8.0	**7.8**
2	HD3086 (C)	**17**	7.0	7.0	7.0	6.5	6.5	**6.8**
3	HD2967 (C)	**19**	6.5	6.5	6.0	6.5	6.0	**6.3**
4	DBW340	**1**	7.5	8.5	7.5	7.5	6.0	**7.4**
5	HD3374	**2**	7.5	6.0	7.0	6.5	5.5	**6.5**
6	DBW341	**3**	6.5	3.0	5.5	3.5	4.5	**4.6**
7	DBW338	**4**	4.0	8.0	6.0	5.0	5.0	**5.6**
8	PBW846	**5**	8.0	8.0	7.0	6.5	7.0	**7.3**
9	WH1285	**6**	7.5	7.0	7.0	6.5	7.0	**7.0**
10	HD3375	**7**	8.0	7.5	7.0	6.5	7.5	**7.3**
11	HD3373	**8**	7.5	7.5	7.5	7.0	7.5	**7.4**
12	DBW337	**9**	7.5	8.0	7.5	7.5	8.5	**7.8**
13	PBW847	**10**	7.5	8.0	6.5	6.0	8.5	**7.3**
14	UP3066	**12**	7.0	7.5	7.0	6.5	7.0	**7.0**
15	UP3068	**13**	8.0	8.0	8.0	7.0	7.0	**7.6**
16	PBW844	**14**	7.5	7.5	7.0	6.0	6.5	**6.9**
17	DBW339	**15**	7.5	7.5	8.0	7.0	6.0	**7.2**
18	DBW299	**16**	7.0	6.5	6.5	7.0	8.0	**7.0**
19	DBW336	**18**	7.5	7.5	7.5	7.5	8.0	**7.6**
20	WH1287	**20**	7.5	7.0	6.5	7.5	6.5	**7.0**
21	WH1286	**21**	7.5	7.0	6.0	7.0	7.0	**6.9**
22	PBW843	**22**	8.0	7.0	7.0	7.0	6.5	**7.1**
23	HD3379	**23**	8.0	3.0	7.5	7.5	7.0	**6.6**
24	DBW281	**24**	7.5	7.0	8.0	7.0	8.5	**7.6**
25	UP3067	**25**	8.0	7.0	8	7.5	7.5	**7.6**
	Mean		**7.4**	**7.0**	**7.0**	**6.7**	**6.9**	**7.0**

Dicoccum Trial

Table 14: Thousand grain weight (g) of Dicoccum genotypes

S. No.	Variety	PZ			SHZ	Overall Mean
		Dharwad	Pune	Mean	Wellington	
1	MACS5055	39.56	38.75	**39.16**	38.75	39.05
2	MACS6222 (a) (C) D	39.26	38.00	**38.63**	38.00	38.47
3	DDK1029 (C)	38.23	38.54	**38.38**	38.54	38.42
4	MACS5054	40.71	41.33	**41.02**	41.33	41.10
5	DDK1058	34.24	34.06	**34.15**	34.06	34.13
6	HW1098 (C)	40.56	42.03	**41.29**	42.03	41.48
7	DDK1059	41.91	42.46	**42.19**	42.46	42.26
	Mean	**39.21**	**39.31**	**39.26**	**39.31**	**39.27**
	Max	**41.91**	**42.46**	**42.19**	**42.46**	**42.26**
	Min	**34.24**	**34.06**	**34.15**	**34.06**	**34.13**

Table 15: Protein content (%) at 12% moisture basis of Dicoccum genotypes

S. No.	Variety	PZ			SHZ	Overall Mean
		Dharwad	Pune	Mean	Wellington	
1	MACS5055	14.87	14.08	**14.48**	15.40	14.71
2	MACS6222 (a) (C) D	14.17	12.41	**13.29**	13.55	13.35
3	DDK1029 (C)	12.94	12.06	**12.50**	13.73	12.80
4	MACS5054	13.20	12.76	**12.98**	13.90	13.21
5	DDK1058	15.22	12.76	**13.99**	14.17	14.04
6	HW1098 (C)	14.61	13.38	**13.99**	14.87	14.21
7	DDK1059	14.34	12.58	**13.46**	13.20	13.40
	Mean	**14.19**	**12.86**	**13.53**	**14.12**	**13.67**
	Max	**15.22**	**14.08**	**14.48**	**15.40**	**14.71**
	Min	**12.94**	**12.06**	**12.50**	**13.20**	**12.80**

Table 16: Sedimentation Value (ml) of Dicoccum genotypes

S. No.	Variety	PZ			SHZ	Overall Mean
		Dharwad	Pune	Mean	Wellington	
1	MACS5055	32	25	**28**	29	29
2	MACS6222 (a) (C) D	41	38	**39**	39	39
3	DDK1029 (C)	27	23	**25**	23	24
4	MACS5054	26	23	**24**	24	24
5	DDK1058	24	20	**22**	23	22
6	HW1098 (C)	31	25	**28**	29	28
7	DDK1059	30	24	**27**	21	26
	Mean	**30**	**25**	**28**	**27**	**27**
	Max	**41**	**38**	**39**	**39**	**39**
	Min	**24**	**20**	**22**	**21**	**22**

Table 17: Yellow Pigment content (ppm) of Dicoccum genotypes

S. No.	Variety	PZ			SHZ	Overall Mean
		Dharwad	Pune	Mean	Wellington	
1	MACS5055	2.67	2.24	**2.46**	3.17	2.64
2	MACS6222 (a) (C) D	3.61	2.54	**3.07**	4.81	3.51
3	DDK1029 (C)	5.04	3.35	**4.19**	5.48	4.51
4	MACS5054	3.98	2.59	**3.28**	4.35	3.55
5	DDK1058	3.55	2.73	**3.14**	3.50	3.23
6	HW1098 (C)	4.09	2.55	**3.32**	3.59	3.39
7	DDK1059	4.48	3.07	**3.77**	4.35	3.92
	Mean	**3.91**	**2.72**	**3.32**	**4.18**	**3.53**
	Max	**5.04**	**3.35**	**4.19**	**5.48**	**4.51**
	Min	**2.67**	**2.24**	**2.46**	**3.17**	**2.64**

SECTION C

WHEAT PRODUCT QUALITY

I. **Chapati**

II. **Bread**

III. **Biscuit**

IV. **Gluten**

V. **Pasta**

Table 1: Chapati quality (Max Score - 10) of *T. aestivum* genotypes

North Western Plains Zone (Irrigated Late Sown)

S. No.	Variety	Code	Ludhiana	Hisar	Delhi	Pantnagar	Durgapura	Mean
1	HD3298*	**215**	7.45	7.95	7.83	7.83	7.83	**7.78**
2	HD3059 (C)	**202**	7.91	7.58	7.70	8.00	8.08	**7.85**
3	DBW173 (C)	**204**	7.66	7.83	7.58	7.91	8.04	**7.80**
4	WH1021 (C)	**205**	7.65	8.04	8.00	7.79	7.50	**7.80**
5	WH1124 (C)	**216**	7.91	7.66	7.87	7.95	7.75	**7.83**
6	PBW771(I) (C)	**212**	7.95	7.75	7.54	7.95	7.95	**7.83**
	Mean		**7.76**	**7.80**	**7.75**	**7.91**	**7.86**	**7.81**

North Western Plains Zone (HYPT)

S. No.	Variety	Code	Ludhiana	Hisar	Karnal	Pantnagar	Delhi	Mean
1	DBW303*	**4**	8.50	7.79	7.54	8.12	7.45	**7.88**
2	DBW187*	**6**	7.95	7.62	7.16	7.70	7.33	**7.55**
3	WH1270*	**10**	7.37	8.04	7.45	7.79	7.66	**7.66**
4	HD2967 (C)	**5**	8.00	8.00	7.66	7.83	8.08	**7.91**
5	HD3086 (C)	**2**	8.04	7.91	7.37	8.00	7.54	**7.77**
	Mean		**7.97**	**7.87**	**7.44**	**7.89**	**7.61**	**7.76**

North Eastern Plains Zone (Restricted Irrigation Timely Sown)

S. No.	Variety	Code	Kanpur	Pusa	Sabour	Varanasi	Mean
1	HD3293*	**303**	8.20	6.33	6.20	7.91	**7.16**
2	HD3171 (C)	**301**	8.20	6.54	6.54	7.79	**7.27**
3	HD2888 (C)	**302**	7.95	6.62	6.83	7.45	**7.21**
4	K1317 (C)	**304**	8.54	7.83	6.70	8.00	**7.77**
5	HI1612 (C)	**305**	8.08	6.87	7.08	7.87	**7.48**
6	DBW252(I) (C)	**306**	8.16	7.16	6.95	7.70	**7.49**
	Mean		**8.19**	**6.89**	**6.72**	**7.79**	**7.40**

Central Zone (Irrigated Late Sown)

S. No.	Variety	Code	Vijapur	Junagarh	P.Kheda	Indore	Mean
1	CG1029*	**205**	8.00	7.87	6.91	7.62	**7.60**
2	HI1634^{Q}*	**201**	8.08	8.08	7.25	8.04	**7.86**
3	HD2932 (C)	**202**	7.95	7.95	6.87	7.66	**7.61**
4	MP3336 (C)	**203**	8.04	7.91	7.12	7.79	**7.72**
5	HD2864 (C)	**204**	8.33	7.62	6.70	7.45	**7.53**
	Mean		**8.08**	**7.89**	**6.97**	**7.71**	**7.66**

Peninsular Zone (Irrigated Late Sown)

S. No.	Variety	Code	Pune	Dharwad	Niphad	Mean
1	HI1633*	**210**	7.45	7.54	7.91	**7.63**
2	HD3090 (C)	**203**	7.7	7.37	7.66	**7.58**
3	HD2932 (C)	**207**	7.91	7.62	7.95	**7.83**
4	RAJ4083 (C)	**204**	7.62	7.45	7.79	**7.62**
	Mean		**7.67**	**7.50**	**7.83**	**7.66**

Table 2: Bread Quality Loaf volume (ml) of *T. aestivum* genotypes

North Western Plains Zone (Irrigated Late Sown)

S. No.	Variety	Code	Ludhiana	Hisar	Delhi	Pantnagar	Durgapura	Mean
1	HD3298*	**215**	600	610	550	650	590	**600**
2	HD3059 (C)	**202**	620	610	615	595	635	**615**
3	DBW173 (C)	**204**	610	625	605	620	630	**618**
4	WH1021 (C)	**205**	575	550	555	600	600	**576**
5	WH1124 (C)	**216**	595	620	595	640	605	**611**
6	PBW771(I) (C)	**212**	500	515	540	600	420	**515**
	Mean		**583**	**588**	**577**	**618**	**580**	**589**

North Western Plains Zone (HYPT)

S. No.	Variety	Code	Ludhiana	Hisar	Karnal	Pantnagar	Delhi	Mean
1	DBW303*	**4**	545	550	555	565	510	**545**
2	DBW187*	**6**	515	600	570	580	595	**572**
3	WH1270*	**10**	525	530	555	570	595	**555**
4	HD2967 (C)	**5**	570	600	580	575	590	**583**
5	HD3086 (C)	**2**	550	570	550	570	600	**568**
	Mean		**541**	**570**	**562**	**572**	**578**	**565**

North Eastern Plains Zone (Restricted Irrigation Timely Sown)

S. No.	Variety	Code	Kanpur	Pusa	Sabour	Varanasi	Mean
1	HD3293*	**303**	460	565	510	515	**513**
2	HD3171 (C)	**301**	585	585	590	585	**586**
3	HD2888 (C)	**302**	500	620	600	525	**561**
4	K1317 (C)	**304**	480	575	610	505	**543**
5	HI1612 (C)	**305**	495	655	545	555	**563**
6	DBW252(I) (C)	**306**	465	565	590	515	**534**
	Mean		**498**	**594**	**574**	**533**	**550**

Central Zone (Irrigated Late Sown)

S. No.	Variety	Code	Vijapur	Junagarh	P.Kheda	Indore	Mean
1	CG1029*	**205**	485	475	500	400	**465**
2	HI1634^{Q}*	**201**	490	510	515	415	**483**
3	HD2932 (C)	**202**	545	530	550	515	**535**
4	MP3336 (C)	**203**	480	460	495	450	**471**
5	HD2864 (C)	**204**	515	510	455	485	**491**
	Mean		**503**	**497**	**503**	**453**	**489**

Peninsular Zone (Irrigated Late Sown)

S. No.	Variety	Code	Pune	Dharwad	Niphad	Mean
1	HI1633*	**210**	565	560	520	**548**
2	HD3090 (C)	**203**	570	600	550	**573**
3	HD2932 (C)	**207**	550	560	520	**543**
4	RAJ4083 (C)	**204**	550	590	550	**563**
	Mean		**559**	**578**	**535**	**557**

Table 3: Bread Quality Score (Max 10l) of *T. aestivum* genotypes

North Western Plains Zone (Irrigated Late Sown)

S. No.	Variety	Code	Ludhiana	Hisar	Delhi	Pantnagar	Durgapura	Mean
1	HD3298*	**215**	6.89	7.83	7.03	7.05	7.57	**7.27**
2	HD3059 (C)	**202**	8.24	8.51	8.31	8.04	8.85	**8.39**
3	DBW173 (C)	**204**	8.24	8.31	8.31	8.51	8.65	**8.40**
4	WH1021 (C)	**205**	6.55	6.35	6.41	6.75	7.03	**6.62**
5	WH1124 (C)	**216**	7.77	8.37	8.04	8.51	8.31	**8.20**
6	PBW771(I) (C)	**212**	5.54	5.87	6.48	7.84	3.92	**5.93**
	Mean		**7.21**	**7.54**	**7.43**	**7.78**	**7.39**	**7.47**

North Western Plains Zone (HYPT)

S. No.	Variety	Code	Ludhiana	Hisar	Karnal	Pantnagar	Delhi	Mean
1	DBW303*	**4**	6.82	6.89	6.82	7.09	4.59	**6.44**
2	DBW187*	**6**	6.01	8.24	7.30	7.29	8.17	**7.40**
3	WH1270*	**10**	6.41	6.35	6.82	6.62	8.31	**6.90**
4	HD2967 (C)	**5**	7.03	7.84	7.57	7.50	7.43	**7.47**
5	HD3086 (C)	**2**	7.29	7.70	7.16	6.89	7.97	**7.40**
	Mean		**6.71**	**7.40**	**7.13**	**7.08**	**7.29**	**7.12**

North Eastern Plains Zone (Restricted Irrigation Timely Sown)

S. No.	Variety	Code	Kanpur	Pusa	Sabour	Varanasi	Mean
1	HD3293*	**303**	5.27	6.01	4.32	6.01	**5.40**
2	HD3171 (C)	**301**	7.91	6.14	6.76	7.90	**7.18**
3	HD2888 (C)	**302**	5.68	7.03	7.43	6.01	**6.54**
4	K1317 (C)	**304**	5.27	6.41	7.16	5.61	**6.11**
5	HI1612 (C)	**305**	6.15	8.17	7.36	6.82	**7.13**
6	DBW252(I) (C)	**306**	5.20	7.09	7.57	6.14	**6.50**
	Mean		**5.91**	**6.81**	**6.77**	**6.42**	**6.48**

Central Zone (Irrigated Late Sown)

S. No.	Variety	Code	Vijapur	Junagarh	P.Kheda	Indore	Mean
1	CG1029*	**205**	5.07	4.80	5.27	3.38	**4.63**
2	HI1634^{Q}*	**201**	5.41	6.62	6.28	4.26	**5.64**
3	HD2932 (C)	**202**	6.96	5.81	7.03	6.01	**6.45**
4	MP3336 (C)	**203**	5.27	4.59	5.47	4.86	**5.05**
5	HD2864 (C)	**204**	5.61	5.81	4.93	5.07	**5.36**
	Mean		**5.66**	**5.53**	**5.80**	**4.72**	**5.43**

Peninsular Zone (Irrigated Late Sown)

S. No.	Variety	Code	Pune	Dharwad	Niphad	Mean
1	HI1633*	**210**	7.23	6.76	5.81	**6.60**
2	HD3090 (C)	**203**	7.16	8.37	6.89	**7.47**
3	HD2932 (C)	**207**	6.49	6.76	5.95	**6.40**
4	RAJ4083 (C)	**204**	6.89	7.84	7.03	**7.25**
	Mean		**6.94**	**7.43**	**6.42**	**6.93**

Table 4: Biscuit spread factor of *T. aestivum* genotypes

North Western Plains Zone (Irrigated Late Sown)

S. No.	Variety	Code	Ludhiana	Hisar	Delhi	Pantnagar	Durgapura	Mean
1	HD3298*	**215**	7.37	7.33	7.19	7.85	6.82	**7.31**
2	HD3059 (C)	**202**	8.02	6.84	7.91	8.10	7.25	**7.62**
3	DBW173 (C)	**204**	7.64	7.20	8.04	7.68	7.12	**7.54**
4	WH1021 (C)	**205**	6.80	7.63	8.19	7.96	7.51	**7.62**
5	WH1124 (C)	**216**	7.74	7.38	7.12	7.47	6.96	**7.33**
6	PBW771(I) (C)	**212**	7.18	6.75	6.45	7.20	6.60	**6.84**
	Mean		**7.46**	**7.19**	**7.48**	**7.71**	**7.04**	**7.38**

North Western Plains Zone (HYPT)

S. No.	Variety	Code	Ludhiana	Hisar	Karnal	Pantnagar	Delhi	Mean
1	DBW303*	**4**	6.59	6.20	7.17	6.83	6.92	**6.74**
2	DBW187*	**6**	6.86	6.68	7.49	6.14	6.30	**6.70**
3	WH1270*	**10**	6.78	6.23	6.46	6.76	7.17	**6.68**
4	HD2967 (C)	**5**	7.00	6.96	7.29	7.21	6.93	**7.08**
5	HD3086 (C)	**2**	6.16	6.85	6.67	6.64	6.24	**6.51**
	Mean		**6.68**	**6.58**	**7.02**	**6.72**	**6.71**	**6.74**

North Eastern Plains Zone (Restricted Irrigation Timely Sown)

S. No.	Variety	Code	Kanpur	Pusa	Sabour	Varanasi	Mean
1	HD3293*	**303**	6.49	7.74	7.38	6.76	**7.09**
2	HD3171 (C)	**301**	7.18	7.28	7.23	7.10	**7.20**
3	HD2888 (C)	**302**	6.76	6.76	7.23	6.58	**6.83**
4	K1317 (C)	**304**	6.08	6.86	7.22	6.67	**6.71**
5	HI1612 (C)	**305**	7.46	6.82	6.97	6.34	**6.90**
6	DBW252(I) (C)	**306**	6.24	7.81	6.87	6.56	**6.87**
	Mean		**6.70**	**7.21**	**7.15**	**6.67**	**6.93**

Central Zone (Irrigated Late Sown)

S. No.	Variety	Code	Vijapur	Junagarh	P.Kheda	Indore	Mean
1	CG1029*	**205**	6.65	6.44	6.78	7.11	**6.75**
2	HI1634^{Q}*	**201**	6.89	6.83	6.75	6.44	**6.73**
3	HD2932 (C)	**202**	6.87	6.63	6.88	7.12	**6.88**
4	MP3336 (C)	**203**	6.83	6.40	6.62	6.61	**6.62**
5	HD2864 (C)	**204**	6.23	6.52	6.88	6.77	**6.60**
	Mean		**6.69**	**6.56**	**6.78**	**6.81**	**6.71**

Peninsular Zone (Irrigated Late Sown)

S. No.	Variety	Code	Pune	Dharwad	Niphad	Mean
1	HI1633*	**210**	7.16	7.38	6.70	**7.08**
2	HD3090 (C)	**203**	7.32	7.33	7.19	**7.28**
3	HD2932 (C)	**207**	7.34	7.65	6.88	**7.29**
4	RAJ4083 (C)	**204**	7.26	7.10	7.22	**7.19**
	Mean		**7.27**	**7.36**	**7.00**	**7.21**

Table 5: Wet gluten (%) of *T. aestivum* genotypes

North Western Plains Zone (Irrigated Late Sown)

S. No.	Variety	Code	Ludhiana	Hisar	Delhi	Pantnagar	Durgapura	Mean
1	HD3298*	**215**	27.2	32.3	31.5	23.3	33.6	**29.6**
2	HD3059 (C)	**202**	26.1	31.9	32.0	24.0	32.4	**29.3**
3	DBW173 (C)	**204**	30.8	31.2	32.4	24.8	33.1	**30.5**
4	WH1021 (C)	**205**	29.6	32.4	32.9	27.4	38.1	**32.1**
5	WH1124 (C)	**216**	29.5	25.6	29.9	25.8	37.1	**29.6**
6	PBW771(I) (C)	**212**	32.1	27.9	33.1	25.0	32.1	**30.0**
	Mean		**29.2**	**30.2**	**32.0**	**25.1**	**34.4**	**30.2**

North Western Plains Zone (HYPT)

S. No.	Variety	Code	Ludhiana	Hisar	Karnal	Pantnagar	Delhi	Mean
1	DBW303*	**4**	29.8	38.1	38.9	29.9	37.6	**34.9**
2	DBW187*	**6**	19.8	35.2	33.6	25.1	34.0	**29.5**
3	WH1270*	**10**	26.3	35.4	33.2	32.3	35.4	**32.5**
4	HD2967 (C)	**5**	23.5	34.3	34.8	23.5	36.2	**30.5**
5	HD3086 (C)	**2**	27.5	36.1	33.2	30.4	36.6	**32.8**
	Mean		**25.4**	**35.8**	**34.7**	**28.2**	**36.0**	**32.0**

North Eastern Plains Zone (Restricted Irrigation Timely Sown)

S. No.	Variety	Code	Kanpur	Pusa	Sabour	Varanasi	Mean
1	HD3293*	**303**	28.6	31.0	23.5	34.0	**29.3**
2	HD3171 (C)	**301**	25.0	30.4	31.5	22.0	**27.2**
3	HD2888 (C)	**302**	33.9	35.6	24.0	34.4	**32.0**
4	K1317 (C)	**304**	32.8	31.8	30.7	37.2	**33.1**
5	HI1612 (C)	**305**	26.3	29.4	32.7	32.4	**30.2**
6	DBW252(I) (C)	**306**	31.2	30.0	34.8	37.4	**33.4**
	Mean		**29.6**	**31.4**	**29.5**	**32.9**	**30.9**

Central Zone (Irrigated Late Sown)

S. No.	Variety	Code	Vijapur	Junagarh	P.Kheda	Indore	Mean
1	CG1029*	**205**	30.1	32.5	30.4	22.8	**29.0**
2	HI1634^{Q}*	**201**	29.0	31.9	27.6	21.9	**27.6**
3	HD2932 (C)	**202**	29.1	33.8	33.6	24.9	**30.4**
4	MP3336 (C)	**203**	34.3	34.9	38.8	24.0	**33.0**
5	HD2864 (C)	**204**	26.8	34.7	30.7	24.7	**29.2**
	Mean		**29.9**	**33.6**	**32.2**	**23.7**	**29.8**

Peninsular Zone (Irrigated Late Sown)

S. No.	Variety	Code	Pune	Dharwad	Niphad	Mean
1	HI1633*	**210**	31.4	37.7	34.2	**34.4**
2	HD3090 (C)	**203**	32.0	36.0	34.5	**34.2**
3	HD2932 (C)	**207**	30.0	35.4	32.8	**32.7**
4	RAJ4083 (C)	**204**	32.8	34.6	35.9	**34.4**
	Mean		**31.6**	**35.9**	**34.4**	**33.9**

Table 6: Dry gluten (%) of *T. aestivum* genotypes

North Western Plains Zone (Irrigated Late Sown)

S. No.	Variety	Code	Ludhiana	Hisar	Delhi	Pantnagar	Durgapura	Mean
1	HD3298*	**215**	8.6	9.6	10.6	7.4	11.1	**9.5**
2	HD3059 (C)	**202**	8.6	9.9	10.0	8.7	10.6	**9.6**
3	DBW173 (C)	**204**	10.3	10.5	10.7	8.1	11.4	**10.2**
4	WH1021 (C)	**205**	9.6	9.7	11.1	8.9	12.5	**10.4**
5	WH1124 (C)	**216**	8.9	8.0	9.5	7.9	12.4	**9.3**
6	PBW771(I) (C)	**212**	9.7	9.2	10.6	8.2	10.5	**9.6**
	Mean		**9.3**	**9.5**	**10.4**	**8.2**	**11.4**	**9.8**

North Western Plains Zone (HYPT)

S. No.	Variety	Code	Ludhiana	Hisar	Karnal	Pantnagar	Delhi	Mean
1	DBW303*	**4**	9.7	12.0	12.8	9.7	12.1	**11.3**
2	DBW187*	**6**	6.8	11.6	11.9	8.3	11.2	**10.0**
3	WH1270*	**10**	9.0	11.4	10.9	10.0	11.0	**10.5**
4	HD2967 (C)	**5**	8.2	10.9	10.8	7.6	11.0	**9.7**
5	HD3086 (C)	**2**	9.1	11.0	10.6	9.2	11.5	**10.3**
	Mean		**8.6**	**11.4**	**11.4**	**9.0**	**11.4**	**10.3**

North Eastern Plains Zone (Restricted Irrigation Timely Sown)

S. No.	Variety	Code	Kanpur	Pusa	Sabour	Varanasi	Mean
1	HD3293*	**303**	8.9	9.3	7.9	10.2	**9.1**
2	HD3171 (C)	**301**	9.0	9.6	9.9	6.2	**8.7**
3	HD2888 (C)	**302**	10.9	10.8	8.2	11.1	**10.3**
4	K1317 (C)	**304**	10.5	9.9	9.5	11.9	**10.5**
5	HI1612 (C)	**305**	8.5	9.6	10.9	10.0	**9.8**
6	DBW252(I) (C)	**306**	9.3	9.4	11.0	12.0	**10.4**
	Mean		**9.5**	**9.8**	**9.6**	**10.2**	**9.8**

Central Zone (Irrigated Late Sown)

S. No.	Variety	Code	Vijapur	Junagarh	P.Kheda	Indore	Mean
1	CG1029*	**205**	8.9	10.0	9.0	6.5	**8.6**
2	HI1634^{Q}*	**201**	8.9	9.8	9.2	7.2	**8.8**
3	HD2932 (C)	**202**	9.5	10.6	10.3	7.9	**9.6**
4	MP3336 (C)	**203**	10.8	11.0	11.4	7.2	**10.1**
5	HD2864 (C)	**204**	8.4	11.0	9.9	7.6	**9.2**
	Mean		**9.3**	**10.5**	**10.0**	**7.3**	**9.3**

Peninsular Zone (Irrigated Late Sown)

S. No.	Variety	Code	Pune	Dharwad	Niphad	Mean
1	HI1633*	**210**	9.7	11.3	10.4	**10.5**
2	HD3090 (C)	**203**	9.3	11.9	11.0	**10.7**
3	HD2932 (C)	**207**	9.8	11.3	10.0	**10.4**
4	RAJ4083 (C)	**204**	10.2	11.0	11.4	**10.9**
	Mean		**9.8**	**11.4**	**10.7**	**10.6**

Table 7: Gluten Index (Max 100) of *T. aestivum* genotypes

North Western Plains Zone (Irrigated Late Sown)

S. No.	Variety	Code	Ludhiana	Hisar	Delhi	Pantnagar	Durgapura	Mean
1	HD3298*	**215**	80	62	69	88	71	**74**
2	HD3059 (C)	**202**	98	81	89	97	89	**91**
3	DBW173 (C)	**204**	80	78	77	96	94	**85**
4	WH1021 (C)	**205**	60	51	56	49	57	**55**
5	WH1124 (C)	**216**	71	80	75	84	79	**78**
6	PBW771(I) (C)	**212**	42	50	47	52	54	**49**
	Mean		**72**	**67**	**69**	**78**	**74**	**72**

North Western Plains Zone (HYPT)

S. No.	Variety	Code	Ludhiana	Hisar	Karnal	Pantnagar	Delhi	Mean
1	DBW303*	**4**	58	56	59	57	78	**62**
2	DBW187*	**6**	96	72	80	85	80	**83**
3	WH1270*	**10**	71	60	61	69	63	**65**
4	HD2967 (C)	**5**	96	64	64	94	68	**77**
5	HD3086 (C)	**2**	80	56	66	61	75	**68**
	Mean		**80**	**62**	**66**	**73**	**73**	**71**

North Eastern Plains Zone (Restricted Irrigation Timely Sown)

S. No.	Variety	Code	Kanpur	Pusa	Sabour	Varanasi	Mean
1	HD3293*	**303**	54	63	90	56	**66**
2	HD3171 (C)	**301**	85	71	64	94	**79**
3	HD2888 (C)	**302**	50	52	81	51	**59**
4	K1317 (C)	**304**	59	74	80	37	**63**
5	HI1612 (C)	**305**	95	82	91	94	**91**
6	DBW252(I) (C)	**306**	54	55	71	62	**61**
	Mean		**66**	**66**	**80**	**66**	**69**

Central Zone (Irrigated Late Sown)

S. No.	Variety	Code	Vijapur	Junagarh	P.Kheda	Indore	Mean
1	CG1029*	**205**	**66**	**53**	**66**	**78**	**66**
2	HI1634^{Q}*	**201**	66	57	69	87	**70**
3	HD2932 (C)	**202**	94	77	75	87	**83**
4	MP3336 (C)	**203**	53	48	55	68	**56**
5	HD2864 (C)	**204**	86	74	75	88	**81**
	Mean		**73**	**61.8**	**68**	**82**	**71**

Peninsular Zone (Irrigated Late Sown)

S. No.	Variety	Code	Pune	Dharwad	Niphad	Mean
1	HI1633*	**210**	65	55	54	**58**
2	HD3090 (C)	**203**	57	62	65	**61**
3	HD2932 (C)	**207**	80	89	73	**81**
4	RAJ4083 (C)	**204**	75	82	71	**76**
	Mean		**69**	**72**	**66**	**69**

Table 8: Pasta Cooking Quality of *T. durum* genotypes in AVT's

Sr. No.	Entry	Code	Cooking time (Min.)	Water absorption (%)	Water uptake ratio	Gruel solid loss (%)	Stickiness
PZ-ITS							
1	DDW48(d)^{Q}*	**102**	12.0	136.7	1.4	**5.0**	PS
2	DDW49(d)^{Q}*	**107**	10.5	117.0	1.2	**7.5**	MS
3	UAS428(d) (C)	**106**	8.5	110.4	1.1	**7.5**	MS
4	MACS3949(d) (C)	**104**	11.5	111.2	1.1	**7.5**	S
	Mean		**10.6**	**118.8**	**1.2**	**6.9**	
PZ-RITS							
1	NIDW 1149(d)*	**301**	5.5	106.4	1.1	**7.5**	S
2	UAS446(d) (C)	**302**	10.5	109.4	1.1	**7.5**	PS
3	AKDW 2997-16(d) (C)	**306**	7.0	111.8	1.1	**5.0**	S
4	HI8805(d)(I) (C)	**307**	8.5	109.6	1.1	**10.0**	PS
	Mean		**7.9**	**109.3**	**1.1**	**7.5**	

PS = partial sticky; S = Sticky; MS = Medium Sticky

Table 9: Pasta sensory evaluation of *T. durum* genotypes in AVT's

Sr. No.	Entry	Code	Colour	Texture	Flavour/ Aroma	Taste	Overall acceptability (Out of 9)
PZ-ITS							
1	DDW48(d)^{Q}*	**102**	6.7	6.5	6.3	6.5	6.5
2	DDW49(d)^{Q}*	**107**	6.2	6.2	4.8	6.2	5.8
3	UAS428(d) (C)	**106**	5.5	5.8	6.5	5.7	5.9
4	MACS3949(d) (C)	**104**	4.3	4.7	5.5	5.7	5.1
	Mean		5.7	5.8	5.8	6.0	5.8
PZ-RITS							
1	NIDW 1149(d)*	**301**	6.0	6.3	5.2	6.3	6.0
2	UAS446(d) (C)	**302**	7.3	6.8	6.3	6.7	6.8
3	AKDW 2997-16(d) (C)	**306**	6.0	6.3	6.3	6.3	6.3
4	HI8805(d)(I) (C)	**307**	7.2	7.0	5.3	6.3	6.4
	Mean		6.6	6.6	5.8	6.4	6.4

Section D

NATIONAL INITIAL VARIETAL TRIALS
&
IVT, NHZ

NATIONAL INITIAL VARIETAL TRIALS

All entries received for initial varietal screening in the coordinated trials were examined for important quality parameters like grain appearance score, grain protein content (on 12 % moisture basis), sedimentation value and hectolitre weight. In addition, the durum entries were also evaluated for yellow berry incidence and yellow pigments content. There were eight such multi-zone trials and one IVT trial of NHZ, the results of which are discussed below:

NIVT 1A (Irrigated Timely Sown) – Table 1-5
In this trial, 36 entries were evaluated from 5 locations (Ludhiana, Hisar, Durgapura, Delhi and Pantnagar) in NWPZ and 4 locations (Pusa, Kanpur, Varanasi and Sabour) in NEPZ.

NIVT 1B (Irrigated Timely Sown) – Table 6-10
In this trial, 36 genotypes were evaluated from 5 locations of NWPZ (Ludhiana, Hisar, Durgapura, Pantnagar and Delhi) and 4 locations of NEPZ (Kanpur, Pusa, Sabour and Varanasi).

NIVT 2 (Irrigated Timely Sown) – Table 11-15
In this trial, 36 entries were evaluated from 4 locations (Indore, Junagarh, Powarkheda and Vijapur) in CZ and 2 locations (Pune, Niphad) in PZ.

NIVT 3A (Irrigated Late Sown) – Table 16-20
In this trial, 36 entries were evaluated from 6 locations in NWPZ (Pantnagar, Ludhiana, Hisar, Delhi, Durgapura and Karnal) and 3 locations in NEPZ (Kanpur, Samastipur and Varanasi).

NIVT 3B (Irrigated Late Sown) – Table 21-24
In this trial 25 entries were evaluated from 4 locations (Indore, Vijapur, Junagarh and Powarkheda) in CZ and 2 locations (Pune, Niphad) in PZ

NIVT 4 (Irrigated Timely Sown – T. durum) – Table 25-30
In this trial, 25 entries were evaluated from 4 locations (Indore, Junagarh, Powarkheda and Vijapur) in CZ and 3 locations (Pune, Dharwad, and Niphad) in PZ

NIVT 5A (Restricted Irrigated Timely Sown) – Table 31-35
In this trial, 25 genotypes were evaluated from 5 locations (Ludhiana, Hisar, Delhi, Karnal and Pantnagar) in NWPZ and 3 locations (Kanpur, Samastipur and Varanasi) in NEPZ

NIVT 5B (Restricted Irrigated Timely Sown) – T. aestivum **and** T. durum**) – Table 36-41**
In this trial, 25 entries were evaluated from 4 locations (Vijapur, Indore, Powarkheda and Junagarh) in CZ and 3 locations (Pune, Dharwad, and Niphad) in PZ.

IVT-NHZ – Table 42-49
These trials were conducted under RTS condition of NHZ (Almora, Shimla, Malan).

Table 1: Grain appearance score (Max. 10) of *T. aestivum* genotypes in NIVT-1A

S. No.	Entry	Trial Code	NWPZ						NEPZ					Overall Mean
			Ludhiana	Hisar	Durgapura	Delhi	Pantnagar	Mean	Pusa	Kanpur	Varanasi	Sabour	Mean	
1	Raj4548	101	5.9	6.4	5.8	5.4	6.0	**5.9**	5.7	5.7	6.0	5.6	**5.8**	**5.8**
2	UP3052	102	5.7	5.6	5.7	5.7	5.8	**5.7**	5.8	5.9	5.7	4.9	**5.6**	**5.6**
3	HD3348	103	5.0	5.0	5.0	4.8	4.9	**4.9**	5.0	4.9	5.0	4.8	**4.9**	**4.9**
4	DBW334	104	5.4	6.0	5.3	5.1	5.6	**5.5**	5.7	5.6	5.4	5.2	**5.5**	**5.5**
5	UP3053	105	5.9	6.0	5.4	5.5	6.2	**5.8**	5.6	5.8	6.1	5.4	**5.7**	**5.8**
6	HUW 839	106	6.3	6.2	5.9	6.0	5.9	**6.1**	5.6	6.2	5.9	5.2	**5.7**	**5.9**
7	K1901	107	6.2	6.0	5.8	5.5	6.0	**5.9**	5.7	5.7	5.4	5.4	**5.6**	**5.7**
8	HD3352	108	6.3	6.2	6.1	5.6	6.3	**6.1**	5.6	5.7	5.8	5.3	**5.6**	**5.9**
9	KRL1810	109	5.7	5.8	5.2	5.9	6.1	**5.7**	5.2	6.4	4.9	4.8	**5.3**	**5.6**
10	DBW309	110	5.6	6.0	5.6	5.7	5.7	**5.7**	5.8	6.0	5.8	5.4	**5.7**	**5.7**
11	PBW828	111	7.2	6.2	5.8	6.1	6.3	**6.3**	5.8	6.6	6.0	5.7	**6.0**	**6.2**
12	K1006 (C)	112	5.1	5.4	5.2	5.9	6.5	**5.6**	5.4	6.2	6.4	5.6	**5.9**	**5.7**
13	HD3349	113	5.9	6.4	5.8	5.2	5.6	**5.8**	5.7	5.3	5.4	5.4	**5.4**	**5.6**
14	PBW841	114	5.8	5.8	5.0	5.7	5.6	**5.6**	5.4	5.3	5.6	5.1	**5.3**	**5.5**
15	HD2967 (C)	115	5.6	5.8	5.5	5.6	5.5	**5.6**	5.5	5.5	5.8	5.2	**5.5**	**5.5**
16	PBW829	116	7.0	5.0	5.8	6.5	5.9	**6.0**	6.4	6.1	6.0	5.8	**6.1**	**6.0**
17	DBW308	117	7.2	5.8	5.9	6.0	6.6	**6.3**	5.7	7.5	6.5	5.9	**6.4**	**6.3**
18	AAI-W29	118	4.7	5.8	5.6	5.3	5.6	**5.4**	5.2	5.0	5.4	4.1	**4.9**	**5.2**
19	HD3353	119	5.7	5.2	5.3	5.7	5.9	**5.6**	5.3	5.2	5.4	4.8	**5.2**	**5.4**
20	DBW306	120	5.8	6.4	5.4	5.6	5.5	**5.7**	5.5	5.4	5.6	5.4	**5.5**	**5.6**
21	WH1284	121	7.8	6.2	5.8	5.8	7.8	**6.7**	5.7	5.9	5.9	5.5	**5.7**	**6.3**
22	UP3051	122	6.4	5.4	5.7	5.7	6.1	**5.9**	6.1	5.8	5.8	5.6	**5.8**	**5.8**
23	WH1272	123	5.4	5.4	5.7	5.2	5.5	**5.4**	5.7	5.5	5.1	5.1	**5.3**	**5.4**
24	HD3350	124	5.6	6.2	5.6	5.7	5.8	**5.8**	5.7	5.6	5.4	5.2	**5.5**	**5.6**
25	HD3086 (C)	125	5.8	6.0	5.6	6.4	6.1	**6.0**	6.0	5.9	6.0	5.5	**5.8**	**5.9**
26	Raj4547	126	5.3	5.0	5.3	5.3	5.7	**5.3**	5.4	5.4	5.0	4.8	**5.1**	**5.2**
27	UP3054	127	7.5	6.4	5.7	6.3	6.6	**6.5**	6.0	7.8	6.0	6.0	**6.5**	**6.5**
28	NW7079	128	5.7	5.8	5.7	5.5	5.7	**5.7**	5.6	5.7	5.6	5.4	**5.6**	**5.6**
29	PBW827	129	5.7	6.0	5.6	5.9	6.2	**5.9**	5.6	6.3	6.1	6.2	**6.0**	**6.0**
30	HD3351	130	6.4	6.0	6.0	7.2	7.2	**6.5**	6.6	6.2	6.5	5.7	**6.2**	**6.4**
31	DBW187 (C)	131	5.9	5.8	5.0	5.5	5.8	**5.6**	5.4	5.5	5.8	5.4	**5.5**	**5.6**
32	PBW826	132	6.2	6.4	6.2	6.0	7.4	**6.4**	5.9	5.9	5.8	5.9	**5.9**	**6.2**
33	Raj4546	133	6.7	6.0	6.1	5.9	6.4	**6.2**	5.6	5.9	5.8	6.4	**5.9**	**6.1**
34	WH1273	134	5.7	5.0	5.1	6.0	5.6	**5.5**	5.7	5.8	5.5	5.0	**5.5**	**5.5**
35	DBW307	135	5.8	5.2	5.3	5.8	5.7	**5.5**	5.4	5.6	5.5	5.4	**5.5**	**5.5**
36	WH1271	136	5.9	5.4	5.8	5.7	6.2	**5.8**	5.4	6.0	5.6	5.6	**5.6**	**5.7**
Mean			**6.0**	**5.8**	**5.6**	**5.7**	**6.0**	**5.8**	**5.6**	**5.8**	**5.7**	**5.4**	**5.6**	**5.7**

Table 2: Hectolitre weight (kg/hl) of *T. aestivum* genotypes in NIVT-1A

S. No.	Entry	Trial Code	NWPZ						NEPZ					Overall Mean
			Ludhiana	Hisar	Durgapura	Delhi	Pantnagar	Mean	Pusa	Kanpur	Varanasi	Sabour	Mean	
1	Raj4548	101	78.8	80.2	74.5	76.0	79.5	**77.8**	77.5	76.3	78.0	70.3	**75.5**	**76.8**
2	UP3052	102	78.0	76.2	74.0	77.3	78.3	**76.7**	76.8	76.3	74.3	65.5	**73.2**	**75.2**
3	HD3348	103	77.0	78.7	73.3	75.0	78.5	**76.5**	74.5	75.5	74.8	67.0	**72.9**	**74.9**
4	DBW334	104	77.0	78.0	72.8	75.3	77.0	**76.0**	75.8	75.0	74.0	67.3	**73.0**	**74.7**
5	UP3053	105	78.5	81.0	71.0	76.3	75.3	**76.4**	76.5	75.3	77.0	68.3	**74.3**	**75.4**
6	HUW 839	106	80.8	81.0	76.5	78.3	80.3	**79.4**	76.5	77.0	76.8	67.5	**74.4**	**77.2**
7	K1901	107	80.5	78.0	77.8	78.5	80.8	**79.1**	77.8	75.8	75.3	68.5	**74.3**	**77.0**
8	HD3352	108	79.8	80.0	76.5	76.8	79.3	**78.5**	76.0	74.3	76.3	66.5	**73.3**	**76.1**
9	KRL1810	109	77.3	76.2	67.0	76.0	77.8	**74.8**	73.5	75.8	70.8	61.5	**70.4**	**72.9**
10	DBW309	110	79.8	81.0	76.3	77.8	79.0	**78.8**	77.8	77.0	78.0	71.3	**76.0**	**77.5**
11	PBW828	111	78.8	80.0	74.0	77.5	78.3	**77.7**	78.3	75.8	75.8	70.5	**75.1**	**76.5**
12	K1006 (C)	112	73.5	76.2	71.8	77.5	80.5	**75.9**	78.5	75.5	79.0	72.3	**76.3**	**76.1**
13	HD3349	113	78.8	80.0	74.0	74.3	79.0	**77.2**	76.8	74.5	76.5	69.5	**74.3**	**75.9**
14	PBW841	114	79.5	78.0	71.5	76.3	78.3	**76.7**	76.0	72.5	75.3	67.0	**72.7**	**74.9**
15	HD2967 (C)	115	76.0	79.0	74.3	77.0	77.0	**76.7**	76.3	75.0	75.3	70.8	**74.3**	**75.6**
16	PBW829	116	81.0	78.0	75.0	77.5	79.0	**78.1**	77.3	75.5	76.0	71.3	**75.0**	**76.7**
17	DBW308	117	80.0	76.7	73.5	76.3	79.3	**77.1**	76.8	75.3	78.5	71.5	**75.5**	**76.4**
18	AAI-W29	118	70.0	78.5	75.0	75.3	77.0	**75.2**	74.8	74.0	74.5	66.3	**72.4**	**73.9**
19	HD3353	119	77.0	75.0	71.5	77.3	77.5	**75.7**	76.5	73.0	75.8	65.8	**72.8**	**74.4**
20	DBW306	120	77.0	77.5	71.3	77.3	77.3	**76.1**	76.8	76.0	76.8	67.8	**74.3**	**75.3**
21	WH1284	121	79.5	80.2	75.5	77.5	79.0	**78.3**	78.3	75.5	76.0	70.5	**75.1**	**76.9**
22	UP3051	122	79.3	79.0	73.8	77.5	81.3	**78.2**	78.5	76.5	77.0	70.8	**75.7**	**77.1**
23	WH1272	123	77.5	77.2	76.8	75.5	77.0	**76.8**	76.3	75.8	73.8	67.3	**73.3**	**75.2**
24	HD3350	124	78.0	80.0	73.3	76.3	79.0	**77.3**	76.5	74.3	74.8	67.5	**73.3**	**75.5**
25	HD3086 (C)	125	76.0	80.3	74.0	78.5	78.8	**77.5**	77.8	75.5	77.8	69.0	**75.0**	**76.4**
26	Raj4547	126	76.0	76.0	72.3	75.8	77.5	**75.5**	76.5	76.3	73.0	64.8	**72.6**	**74.2**
27	UP3054	127	80.0	80.6	73.3	77.5	80.3	**78.3**	77.3	77.5	78.3	71.8	**76.2**	**77.4**
28	NW7079	128	79.0	79.2	75.3	76.0	78.8	**77.6**	76.0	73.8	75.5	68.5	**73.4**	**75.8**
29	PBW827	129	78.3	79.5	72.3	76.8	79.0	**77.2**	77.5	76.3	77.0	70.0	**75.2**	**76.3**
30	HD3351	130	78.0	80.3	76.3	78.5	81.0	**78.8**	77.5	76.8	76.8	68.8	**74.9**	**77.1**
31	DBW187 (C)	131	78.3	77.8	70.5	75.5	79.0	**76.2**	76.5	75.0	77.3	69.5	**74.6**	**75.5**
32	PBW826	132	79.5	81.5	75.5	77.8	80.3	**78.9**	79.0	78.0	78.5	70.8	**76.6**	**77.9**
33	Raj4546	133	80.0	78.0	77.8	78.8	79.8	**78.9**	77.5	77.0	77.3	72.8	**76.1**	**77.6**
34	WH1273	134	77.0	77.2	69.0	77.8	76.8	**75.5**	75.8	74.8	75.3	66.5	**73.1**	**74.4**
35	DBW307	135	79.0	79.5	72.3	78.5	78.5	**77.6**	77.0	76.8	77.3	69.5	**75.1**	**76.5**
36	WH1271	136	78.5	80.0	75.3	76.5	79.3	**77.9**	76.5	76.3	75.5	70.8	**74.8**	**76.5**
Mean			**78.1**	**78.8**	**73.7**	**76.9**	**78.7**	**77.2**	**76.8**	**75.6**	**76.1**	**68.7**	**74.3**	**75.9**

Table 3: Protein content (%) at 12% moisture basis of *T. aestivum* genotypes in NIVT-1A

S. No.	Entry	Trial Code	NWPZ						NEPZ					Overall Mean
			Ludhiana	Hisar	Durgapura	Delhi	Pantnagar	Mean	Pusa	Kanpur	Varanasi	Sabour	Mean	
1	Raj4548	101	9.9	11.4	12.5	13.4	10.6	**11.6**	13.6	11.0	9.3	12.5	**11.6**	**11.6**
2	UP3052	102	9.5	11.9	13.2	12.9	9.7	**11.4**	10.4	11.1	10.3	12.6	**11.1**	**11.3**
3	HD3348	103	11.4	10.5	12.6	13.3	10.1	**11.6**	12.3	11.2	9.6	12.8	**11.5**	**11.5**
4	DBW334	104	12.3	11.3	13.0	13.5	9.7	**12.0**	12.4	11.6	9.6	12.5	**11.5**	**11.8**
5	UP3053	105	9.5	11.4	14.5	13.7	11.6	**12.1**	13.4	11.6	9.3	13.3	**11.9**	**12.0**
6	HUW 839	106	9.7	10.6	13.2	13.2	10.3	**11.4**	13.3	11.5	9.9	12.5	**11.8**	**11.6**
7	K1901	107	11.6	13.6	13.6	15.1	11.0	**13.0**	13.7	12.2	10.6	12.2	**12.2**	**12.6**
8	HD3352	108	9.8	11.9	13.0	14.1	9.0	**11.6**	12.4	12.1	8.9	12.8	**11.5**	**11.5**
9	KRL1810	109	10.2	10.6	13.9	12.8	10.4	**11.6**	14.2	11.4	10.6	13.0	**12.3**	**11.9**
10	DBW309	110	13.2	12.1	13.5	14.1	11.4	**12.9**	11.9	12.2	10.7	12.4	**11.8**	**12.4**
11	PBW828	111	12.5	11.3	12.8	12.6	9.0	**11.6**	13.1	11.4	10.2	11.0	**11.4**	**11.6**
12	K1006 (C)	112	12.5	12.1	12.4	13.7	10.0	**12.1**	12.5	11.2	8.6	12.3	**11.1**	**11.7**
13	HD3349	113	10.0	12.1	12.9	14.0	11.1	**12.0**	13.6	11.0	9.7	11.9	**11.5**	**11.8**
14	PBW841	114	10.0	11.8	13.9	12.4	9.8	**11.6**	14.2	12.4	9.3	12.0	**12.0**	**11.7**
15	HD2967 (C)	115	10.9	11.9	13.6	14.6	9.7	**12.2**	13.7	13.5	10.0	13.0	**12.5**	**12.3**
16	PBW829	116	14.3	11.8	14.4	14.3	10.0	**13.0**	14.1	12.8	9.6	12.2	**12.2**	**12.6**
17	DBW308	117	10.7	12.9	14.6	14.6	11.8	**12.9**	13.8	12.5	9.0	12.3	**11.9**	**12.5**
18	AAI-W29	118	11.7	11.1	14.8	14.9	9.3	**12.4**	14.6	14.0	10.3	15.8	**13.7**	**13.0**
19	HD3353	119	9.6	12.0	13.5	12.8	9.4	**11.5**	12.7	11.5	9.2	12.4	**11.5**	**11.5**
20	DBW306	120	11.8	11.8	13.6	13.8	13.2	**12.8**	12.0	11.8	10.1	12.4	**11.6**	**12.3**
21	WH1284	121	12.6	12.0	12.7	13.8	9.6	**12.1**	13.7	11.9	10.0	11.6	**11.8**	**12.0**
22	UP3051	122	10.6	11.1	13.7	13.7	11.3	**12.1**	12.2	11.9	9.4	12.7	**11.6**	**11.9**
23	WH1272	123	11.8	11.6	12.4	13.6	9.5	**11.8**	13.7	11.0	9.5	11.0	**11.3**	**11.6**
24	HD3350	124	11.4	12.1	12.9	13.4	10.3	**12.0**	11.4	12.0	9.4	12.5	**11.3**	**11.7**
25	HD3086 (C)	125	12.5	11.6	13.5	13.2	10.4	**12.2**	11.9	11.9	8.9	12.8	**11.4**	**11.9**
26	Raj4547	126	12.7	12.8	14.0	13.3	10.6	**12.7**	12.5	11.4	9.9	12.5	**11.6**	**12.2**
27	UP3054	127	11.6	11.3	13.2	13.3	9.9	**11.8**	12.3	11.1	9.1	11.4	**11.0**	**11.5**
28	NW7079	128	11.8	11.9	12.6	13.5	10.4	**12.0**	12.7	10.4	8.8	11.2	**10.8**	**11.5**
29	PBW827	129	13.6	11.6	14.7	14.4	9.6	**12.8**	14.1	12.5	10.7	12.0	**12.3**	**12.6**
30	HD3351	130	12.4	11.3	13.3	13.9	9.2	**12.0**	12.7	11.8	9.5	12.5	**11.6**	**11.8**
31	DBW187 (C)	131	9.4	12.2	13.6	14.6	9.4	**11.9**	11.8	12.1	8.5	12.1	**11.1**	**11.5**
32	PBW826	132	12.9	10.6	12.1	13.2	10.5	**11.9**	12.7	11.0	10.4	13.2	**11.8**	**11.8**
33	Raj4546	133	11.2	14.5	13.2	14.7	10.8	**12.9**	14.2	12.2	9.9	13.7	**12.5**	**12.7**
34	WH1273	134	10.8	11.3	14.5	12.8	10.1	**11.9**	12.4	11.8	9.6	14.0	**11.9**	**11.9**
35	DBW307	135	10.7	11.3	13.1	14.0	11.6	**12.1**	13.6	12.0	9.4	11.8	**11.7**	**11.9**
36	WH1271	136	10.5	10.5	14.1	14.4	10.7	**12.0**	14.3	12.5	10.4	12.3	**12.4**	**12.2**
Mean			**11.3**	**11.7**	**13.4**	**13.7**	**10.3**	**12.1**	**13.0**	**11.8**	**9.7**	**12.5**	**11.7**	**11.9**

Table 4: Sedimentation value (ml) of *T. aestivum* genotypes in NIVT-1A

S. No.	Entry	Trial Code	NWPZ						NEPZ					Overall Mean
			Ludhiana	Hisar	Durgapura	Delhi	Pantnagar	Mean	Pusa	Kanpur	Varanasi	Sabour	Mean	
1	Raj4548	101	40	56	57	48	45	**49**	49	45	50	50	**48**	**49**
2	UP3052	102	37	62	58	48	48	**50**	51	44	45	52	**48**	**49**
3	HD3348	103	37	59	57	49	51	**50**	54	51	53	54	**53**	**51**
4	DBW334	104	42	58	56	47	51	**51**	52	51	46	52	**50**	**50**
5	UP3053	105	47	62	52	49	56	**53**	51	53	58	51	**53**	**53**
6	HUW 839	106	43	54	58	48	52	**51**	54	47	50	45	**49**	**50**
7	K1901	107	47	72	58	48	52	**55**	65	53	58	61	**59**	**57**
8	HD3352	108	48	61	57	50	50	**53**	59	52	47	56	**53**	**53**
9	KRL1810	109	43	53	59	45	48	**49**	52	55	49	59	**54**	**51**
10	DBW309	110	44	64	57	45	48	**51**	48	53	43	45	**47**	**49**
11	PBW828	111	45	40	57	44	42	**45**	47	46	43	44	**45**	**45**
12	K1006 (C)	112	46	36	46	44	44	**43**	45	52	43	42	**45**	**44**
13	HD3349	113	46	69	60	42	48	**53**	48	52	54	55	**52**	**52**
14	PBW841	114	47	67	63	44	44	**53**	50	52	47	46	**49**	**51**
15	HD2967 (C)	115	46	64	57	52	44	**52**	41	46	51	44	**45**	**49**
16	PBW829	116	46	49	54	53	45	**49**	44	45	52	47	**47**	**48**
17	DBW308	117	48	58	52	49	47	**51**	56	47	54	47	**51**	**51**
18	AAI-W29	118	45	60	58	45	47	**51**	59	45	45	55	**51**	**51**
19	HD3353	119	48	53	59	53	43	**51**	52	51	44	53	**50**	**50**
20	DBW306	120	49	71	60	45	48	**54**	56	48	45	55	**51**	**53**
21	WH1284	121	46	54	57	46	45	**49**	44	54	45	57	**50**	**50**
22	UP3051	122	42	69	58	44	44	**51**	51	57	56	60	**56**	**53**
23	WH1272	123	55	70	57	46	56	**57**	55	58	58	53	**56**	**56**
24	HD3350	124	61	71	57	50	47	**57**	51	54	60	50	**53**	**55**
25	HD3086 (C)	125	51	62	56	45	47	**52**	55	55	48	44	**50**	**51**
26	Raj4547	126	42	69	55	45	49	**52**	58	55	50	45	**52**	**52**
27	UP3054	127	46	56	59	42	45	**49**	55	48	47	53	**51**	**50**
28	NW7079	128	50	57	57	44	51	**52**	60	46	49	56	**53**	**52**
29	PBW827	129	41	56	56	45	48	**49**	49	52	45	53	**50**	**49**
30	HD3351	130	47	60	56	46	44	**50**	54	48	45	47	**48**	**49**
31	DBW187 (C)	131	47	67	56	54	50	**55**	52	57	51	60	**55**	**55**
32	PBW826	132	45	60	55	43	44	**49**	55	49	50	47	**50**	**50**
33	Raj4546	133	44	56	55	46	43	**48**	52	46	50	57	**51**	**50**
34	WH1273	134	43	55	54	45	45	**48**	53	50	50	53	**51**	**50**
35	DBW307	135	45	62	57	44	45	**50**	54	50	48	51	**51**	**50**
36	WH1271	136	43	61	57	46	54	**52**	56	50	52	55	**53**	**52**
Mean			**45**	**60**	**56**	**46**	**47**	**51**	**52**	**50**	**49**	**51**	**51**	**51**

Table 5: Phenol test (Max-10) of *T. aestivum* genotypes in NIVT-1A

S. No.	Entry	Trial Code	NWPZ						NEPZ					Overall Mean
			Ludhiana	Hisar	Durgapura	Delhi	Pantnagar	Mean	Pusa	Kanpur	Varanasi	Sabour	Mean	
1	Raj4548	101	1.8	3.5	3.2	2.6	2.2	**2.7**	2.8	2.2	2.4	2.5	**2.5**	**2.6**
2	UP3052	102	4.1	7.0	5.7	4.9	5.0	**5.3**	3.6	3.4	4.4	4.0	**3.9**	**4.7**
3	HD3348	103	3.5	6.0	3.9	3.6	3.6	**4.1**	3.7	3.3	3.8	6.2	**4.3**	**4.2**
4	DBW334	104	3.7	7.0	3.8	5.9	5.1	**5.1**	4.1	4.1	3.9	5.4	**4.4**	**4.8**
5	UP3053	105	5.8	6.5	5.6	5.9	5.5	**5.8**	6.0	5.5	5.4	6.6	**5.9**	**5.9**
6	HUW 839	106	4.5	6.0	5.3	4.5	4.2	**4.9**	5.8	4.2	4.0	5.6	**4.9**	**4.9**
7	K1901	107	5.0	7.0	4.9	6.8	4.2	**5.6**	5.8	3.8	5.0	4.7	**4.8**	**5.2**
8	HD3352	108	2.6	3.0	3.4	2.5	2.4	**2.8**	2.7	2.3	2.7	2.8	**2.6**	**2.7**
9	KRL1810	109	4.5	6.5	3.9	4.9	5.6	**5.1**	4.9	4.0	5.5	6.3	**5.2**	**5.1**
10	DBW309	110	3.7	6.0	3.8	4.1	5.3	**4.6**	4.8	3.6	5.0	6.4	**4.9**	**4.7**
11	PBW828	111	2.1	4.0	3.1	2.9	2.8	**3.0**	2.8	2.4	2.8	2.6	**2.7**	**2.8**
12	K1006 (C)	112	4.2	5.5	4.2	3.4	3.2	**4.1**	3.5	3.0	3.6	3.6	**3.4**	**3.8**
13	HD3349	113	5.1	8.0	6.6	4.4	5.8	**6.0**	4.4	3.8	4.5	6.3	**4.7**	**5.4**
14	PBW841	114	4.0	7.5	6.4	3.7	4.4	**5.2**	3.9	4.8	4.2	3.9	**4.2**	**4.7**
15	HD2967 (C)	115	4.9	6.5	5.4	4.3	4.9	**5.2**	4.0	3.0	3.5	4.7	**3.8**	**4.6**
16	PBW829	116	5.0	7.5	5.6	4.4	3.9	**5.3**	5.9	3.8	5.1	3.7	**4.6**	**5.0**
17	DBW308	117	4.5	6.0	3.8	4.7	4.1	**4.6**	4.5	5.9	4.6	4.0	**4.8**	**4.7**
18	AAI-W29	118	3.0	5.0	5.0	3.8	3.9	**4.1**	4.0	3.4	5.0	3.4	**4.0**	**4.1**
19	HD3353	119	4.2	7.0	6.2	4.8	3.7	**5.2**	5.0	4.2	5.0	6.7	**5.2**	**5.2**
20	DBW306	120	5.2	6.0	6.5	3.7	4.1	**5.1**	4.1	4.0	6.2	6.5	**5.2**	**5.1**
21	WH1284	121	5.3	6.0	4.4	4.9	4.6	**5.0**	6.0	5.5	4.3	4.0	**5.0**	**5.0**
22	UP3051	122	5.5	6.5	6.6	4.2	5.4	**5.6**	6.8	4.6	5.7	4.1	**5.3**	**5.5**
23	WH1272	123	6.1	6.5	4.3	3.8	3.7	**4.9**	6.0	4.7	4.6	5.5	**5.2**	**5.0**
24	HD3350	124	5.9	7.0	7.3	6.7	4.6	**6.3**	5.0	3.9	5.8	6.4	**5.3**	**5.8**
25	HD3086 (C)	125	6.0	6.5	4.7	4.1	4.9	**5.2**	5.5	4.8	6.1	4.8	**5.3**	**5.3**
26	Raj4547	126	5.4	5.5	3.7	3.8	5.6	**4.8**	6.1	4.5	5.6	5.0	**5.3**	**5.0**
27	UP3054	127	5.3	5.5	4.0	3.7	4.1	**4.5**	6.1	5.4	4.6	4.7	**5.2**	**4.8**
28	NW7079	128	4.9	6.0	6.2	3.8	3.9	**5.0**	4.6	5.7	5.9	5.8	**5.5**	**5.2**
29	PBW827	129	4.0	6.5	4.8	3.6	3.6	**4.5**	5.9	3.9	5.9	3.9	**4.9**	**4.7**
30	HD3351	130	5.6	6.0	5.8	5.5	5.1	**5.6**	4.6	4.7	5.3	4.8	**4.8**	**5.3**
31	DBW187 (C)	131	5.8	7.5	6.9	5.5	5.0	**6.1**	4.5	6.7	6.4	6.2	**6.0**	**6.1**
32	PBW826	132	4.1	6.0	5.2	3.6	4.4	**4.7**	4.0	3.4	4.2	4.0	**3.9**	**4.3**
33	Raj4546	133	6.2	6.0	5.8	4.0	4.9	**5.4**	5.5	6.2	5.5	4.8	**5.5**	**5.4**
34	WH1273	134	4.3	6.0	5.6	3.9	4.9	**4.9**	4.7	5.6	5.3	5.1	**5.2**	**5.0**
35	DBW307	135	5.6	6.5	6.9	6.1	4.9	**6.0**	4.6	6.9	5.9	5.3	**5.7**	**5.8**
36	WH1271	136	4.9	8.0	5.7	6.8	7.1	**6.5**	6.6	5.7	6.3	7.8	**6.6**	**6.5**
Mean			**4.6**	**6.2**	**5.1**	**4.4**	**4.4**	**5.0**	**4.8**	**4.3**	**4.8**	**4.9**	**4.7**	**4.9**

Table 6: Grain appearance score (Max-10) of *T. aestivum* genotypes in NIVT-1B

S. No.	Entry	Trial Code	NWPZ							NEPZ				Overall Mean
			Ludhiana	Durgapura	Delhi	Pantnagar	Hisar	Mean	Kanpur	Pusa	Sabour	Varanasi	Mean	
1	WH1274	201	6.0	7.0	7.0	7.0	6.8	**6.8**	6.0	7.0	6.0	7.0	**6.5**	**6.6**
2	JKW275	202	5.0	6.0	6.0	6.0	6.0	**5.8**	5.0	6.0	6.0	6.0	**5.8**	**5.8**
3	K1905	203	7.0	6.0	6.0	7.0	6.4	**6.5**	7.0	5.0	5.0	7.0	**6.0**	**6.3**
4	UP3055	204	6.0	5.0	6.0	6.0	6.0	**5.8**	7.0	7.0	5.0	6.0	**6.3**	**6.0**
5	NW7093	205	6.0	5.0	5.0	6.0	5.2	**5.4**	5.0	6.0	4.0	5.0	**5.0**	**5.2**
6	Raj4549	206	5.0	5.0	7.0	7.0	5.4	**5.9**	6.0	6.0	5.0	5.0	**5.5**	**5.7**
7	K1903	207	6.0	7.0	6.0	5.0	5.4	**5.9**	7.0	7.0	5.0	4.0	**5.8**	**5.8**
8	PBW830	208	5.0	7.0	5.0	5.0	6.0	**5.6**	6.0	7.0	6.0	5.0	**6.0**	**5.8**
9	PBW831	209	5.0	7.0	5.0	5.0	5.2	**5.4**	5.0	6.0	5.0	5.0	**5.3**	**5.4**
10	NW7094	210	6.0	5.0	6.0	6.0	5.2	**5.6**	5.0	7.0	5.0	6.0	**5.8**	**5.7**
11	UP3057	211	5.0	5.0	6.0	5.0	5.0	**5.2**	6.0	5.0	6.0	7.0	**6.0**	**5.6**
12	WH1283	212	5.0	5.0	5.0	6.0	6.4	**5.5**	6.0	6.0	5.0	5.0	**5.5**	**5.5**
13	Raj4550	213	6.0	6.0	7.0	6.0	6.2	**6.2**	5.0	7.0	7.0	6.0	**6.3**	**6.2**
14	DBW313	214	5.0	6.0	6.0	7.0	6.4	**6.1**	5.0	7.0	7.0	7.0	**6.5**	**6.3**
15	BRW3877	215	6.0	5.0	5.0	6.0	5.8	**5.6**	6.0	6.0	5.0	7.0	**6.0**	**5.8**
16	DBW312	216	5.0	6.0	5.0	5.0	4.8	**5.2**	6.0	6.0	5.0	5.0	**5.5**	**5.3**
17	UP3056	217	6.0	7.0	6.0	6.0	6.2	**6.2**	7.0	7.0	6.0	5.0	**6.3**	**6.2**
18	NW7088	218	7.0	6.0	5.0	5.0	5.8	**5.8**	6.0	5.0	5.0	6.0	**5.5**	**5.6**
19	HD3355	219	5.0	5.0	5.0	6.0	5.8	**5.4**	7.0	7.0	6.0	7.0	**6.8**	**6.0**
20	HUW841	220	6.0	6.0	6.0	6.0	5.6	**5.9**	7.0	6.0	5.0	5.0	**5.8**	**5.8**
21	K1904	221	5.0	5.0	7.0	7.0	5.8	**6.0**	6.0	6.0	6.0	7.0	**6.3**	**6.1**
22	HD3356	222	5.0	5.0	7.0	7.0	5.4	**5.9**	6.0	6.0	5.0	5.0	**5.5**	**5.7**
23	AAI-W22	223	5.0	5.0	6.0	7.0	5.6	**5.7**	7.0	6.0	5.0	5.0	**5.8**	**5.7**
24	HD3357	224	6.0	6.0	7.0	6.0	6.2	**6.2**	7.0	7.0	6.0	6.0	**6.5**	**6.4**
25	HUW840	225	5.0	5.0	5.0	6.0	6.0	**5.4**	6.0	6.0	4.0	7.0	**5.8**	**5.6**
26	HD2967 (C)	226	6.0	7.0	6.0	6.0	6.0	**6.2**	6.0	6.0	5.0	6.0	**5.8**	**6.0**
27	KRL1803	227	7.0	6.0	5.0	7.0	6.2	**6.2**	6.0	7.0	6.0	6.0	**6.3**	**6.2**
28	KRL1808	228	5.0	6.0	7.0	7.0	6.2	**6.2**	7.0	6.0	5.0	7.0	**6.3**	**6.2**
29	JKW277	229	7.0	5.0	7.0	6.0	5.8	**6.2**	6.0	6.0	6.0	7.0	**6.3**	**6.2**
30	HD3086 (C)	230	6.0	6.0	6.0	6.0	6.0	**6.0**	5.0	7.0	5.0	6.0	**5.8**	**5.9**
31	DBW187 (C)	231	7.0	6.0	5.0	5.0	6.0	**5.8**	7.0	5.0	5.0	5.0	**5.5**	**5.7**
32	BRW3869	232	5.0	6.0	6.0	6.0	5.8	**5.8**	6.0	6.0	5.0	4.0	**5.3**	**5.5**
33	HD3354	233	7.0	5.0	5.0	5.0	6.2	**5.6**	6.0	6.0	5.0	5.0	**5.5**	**5.6**
34	DBW311	234	5.0	5.0	6.0	6.0	6.2	**5.6**	7.0	7.0	6.0	6.0	**6.5**	**6.0**
35	K1006 (C)	235	6.0	6.0	5.0	6.0	6.2	**5.8**	5.0	5.0	7.0	7.0	**6.0**	**5.9**
36	DBW310	236	6.0	6.0	6.0	5.0	6.2	**5.8**	6.0	5.0	7.0	6.0	**6.0**	**5.9**
Mean			**5.7**	**5.8**	**5.9**	**6.0**	**5.9**	**5.8**	**6.1**	**6.2**	**5.5**	**5.9**	**5.9**	**5.9**

Table 7: Hectolitre weight (kg/hl) of *T. aestivum* genotypes in NIVT-1B

S. No.	Entry	Trial Code	NWPZ							NEPZ				Overall Mean
			Ludhiana	Durgapura	Delhi	Pantnagar	Hisar	Mean	Kanpur	Pusa	Sabour	Varanasi	Mean	
1	WH1274	201	76.6	79.0	76.9	79.4	81.0	**78.6**	76.4	76.8	62.0	75.2	**72.6**	**75.9**
2	JKW275	202	76.6	73.6	76.8	70.9	79.0	**75.4**	72.5	75.7	70.9	72.4	**72.9**	**74.3**
3	K1905	203	78.8	78.8	78.2	79.4	78.6	**78.8**	76.3	77.7	65.2	76.1	**73.8**	**76.6**
4	UP3055	204	78.6	73.4	77.3	77.6	79.2	**77.2**	75.1	78.0	66.4	72.6	**73.0**	**75.3**
5	NW7093	205	76.9	68.7	72.9	76.8	77.0	**74.5**	74.2	76.2	65.4	70.7	**71.6**	**73.2**
6	Raj4549	206	74.1	77.9	77.4	73.9	81.2	**76.9**	75.4	77.0	65.2	66.3	**70.9**	**74.2**
7	K1903	207	78.5	73.8	75.5	74.5	80.7	**76.6**	76.4	78.9	69.8	73.1	**74.5**	**75.7**
8	PBW830	208	78.4	74.6	75.3	69.9	76.0	**74.8**	73.0	75.8	65.0	73.1	**71.7**	**73.5**
9	PBW831	209	76.2	75.3	76.9	76.7	78.0	**76.6**	73.4	76.5	66.5	70.3	**71.7**	**74.4**
10	NW7094	210	77.2	73.2	77.2	70.8	81.2	**75.9**	71.7	76.5	68.4	73.6	**72.5**	**74.4**
11	UP3057	211	76.7	78.1	77.4	73.7	80.5	**77.3**	76.2	78.0	68.2	78.7	**75.2**	**76.4**
12	WH1283	212	79.2	73.1	76.7	73.9	83.6	**77.3**	77.0	75.1	68.9	74.5	**73.9**	**75.8**
13	Raj4550	213	78.3	77.1	73.4	64.0	80.5	**74.6**	72.2	75.2	60.8	71.3	**69.9**	**72.5**
14	DBW313	214	80.3	80.1	80.1	72.9	81.3	**78.9**	78.1	77.7	70.4	77.7	**76.0**	**77.6**
15	BRW3877	215	78.4	72.5	74.1	72.3	81.0	**75.7**	75.5	78.9	67.7	78.1	**75.0**	**75.4**
16	DBW312	216	76.3	80.4	78.8	72.6	80.0	**77.6**	74.6	76.0	65.9	73.3	**72.4**	**75.3**
17	UP3056	217	77.6	75.6	75.2	71.9	79.0	**75.9**	73.9	77.5	64.6	68.0	**71.0**	**73.7**
18	NW7088	218	80.4	75.0	78.8	70.7	79.0	**76.8**	75.7	77.9	65.1	72.5	**72.8**	**75.0**
19	HD3355	219	76.1	71.7	76.2	70.8	77.0	**74.4**	75.3	74.5	60.9	75.1	**71.5**	**73.1**
20	HUW841	220	77.6	76.2	77.9	72.7	77.0	**76.3**	75.1	76.7	64.7	71.8	**72.1**	**74.4**
21	K1904	221	80.5	80.3	76.7	79.9	82.0	**79.9**	74.3	77.8	66.9	73.7	**73.2**	**76.9**
22	HD3356	222	70.0	72.5	75.3	73.1	79.4	**74.1**	73.5	77.7	62.4	71.0	**71.1**	**72.8**
23	AAI-W22	223	73.9	70.3	76.2	74.0	78.0	**74.5**	73.7	76.7	68.5	68.6	**71.9**	**73.3**
24	HD3357	224	78.2	77.0	78.3	71.9	81.0	**77.3**	74.4	77.0	68.4	73.0	**73.2**	**75.5**
25	HUW840	225	77.2	77.7	78.9	77.8	82.0	**78.7**	78.8	78.2	71.0	74.1	**75.5**	**77.3**
26	HD2967 (C)	226	75.6	73.5	74.8	71.1	78.5	**74.7**	73.5	75.6	69.5	67.4	**71.5**	**73.3**
27	KRL1803	227	80.1	74.5	77.8	80.2	82.0	**78.9**	75.2	77.9	68.5	73.3	**73.7**	**76.6**
28	KRL1808	228	72.3	74.2	75.7	68.7	78.4	**73.9**	75.3	74.6	59.6	67.9	**69.3**	**71.9**
29	JKW277	229	76.0	75.1	75.6	72.9	77.0	**75.3**	75.0	76.8	66.9	73.2	**73.0**	**74.3**
30	HD3086 (C)	230	79.1	75.8	77.0	74.4	80.0	**77.2**	75.8	78.0	67.6	70.0	**72.8**	**75.3**
31	DBW187 (C)	231	77.1	74.0	77.0	72.5	79.2	**76.0**	74.1	77.4	69.4	77.3	**74.5**	**75.3**
32	BRW3869	232	77.6	74.6	74.7	70.6	77.6	**75.0**	76.2	75.3	68.7	74.2	**73.6**	**74.4**
33	HD3354	233	81.9	77.0	77.0	76.3	82.3	**78.9**	76.7	79.0	69.7	77.0	**75.6**	**77.4**
34	DBW311	234	75.6	75.2	75.9	71.0	78.7	**75.3**	74.2	76.5	65.2	75.4	**72.8**	**74.2**
35	K1006 (C)	235	79.4	75.7	77.7	78.8	79.5	**78.2**	75.0	78.2	71.2	78.4	**75.7**	**77.1**
36	DBW310	236	75.0	71.6	75.9	69.4	78.0	**74.0**	75.0	74.3	66.2	69.9	**71.3**	**72.8**
Mean			**77.3**	**75.2**	**76.6**	**73.6**	**79.6**	**76.4**	**74.9**	**76.8**	**66.7**	**73.0**	**72.9**	**74.9**

Table 8: Protein content (%) at 12% moisture basis of *T. aestivum* genotypes in NIVT-1B

S. No.	Entry	Trial Code	NWPZ							NEPZ				Overall Mean
			Ludhiana	Durgapura	Delhi	Pantnagar	Hisar	Mean	Kanpur	Pusa	Sabour	Varanasi	Mean	
1	WH1274	201	10.8	10.6	12.2	10.1	10.7	**10.9**	11.4	12.0	-	8.9	**10.7**	**10.8**
2	JKW275	202	10.6	12.7	13.5	12.2	11.3	**12.1**	11.9	10.8	-	9.8	**10.8**	**11.6**
3	K1905	203	9.5	11.4	13.9	10.1	11.2	**11.2**	11.1	11.4	-	9.0	**10.5**	**11.0**
4	UP3055	204	10.7	13.1	14.9	10.7	11.0	**12.1**	11.7	11.4	-	10.3	**11.1**	**11.7**
5	NW7093	205	8.4	14.3	13.7	8.5	11.7	**11.3**	9.5	12.2	-	9.1	**10.3**	**10.9**
6	Raj4549	206	9.7	13.2	13.4	10.9	10.3	**11.5**	12.3	12.3	-	11.7	**12.1**	**11.7**
7	K1903	207	8.9	14.3	13.7	10.6	11.1	**11.7**	11.2	12.6	-	10.6	**11.5**	**11.6**
8	PBW830	208	9.2	13.9	13.3	11.2	11.2	**11.8**	11.4	13.3	-	9.7	**11.5**	**11.7**
9	PBW831	209	8.1	10.9	12.8	8.4	10.9	**10.2**	11.3	10.6	-	8.4	**10.1**	**10.2**
10	NW7094	210	10.1	14.8	12.8	8.8	8.5	**11.0**	11.3	12.8	-	9.1	**11.1**	**11.0**
11	UP3057	211	9.9	12.0	13.6	11.2	8.9	**11.1**	10.3	12.1	-	8.9	**10.4**	**10.9**
12	WH1283	212	10.0	13.3	12.6	10.8	10.6	**11.5**	10.5	11.1	-	8.7	**10.1**	**10.9**
13	Raj4550	213	8.6	11.4	13.5	10.8	9.8	**10.8**	11.1	12.2	-	9.5	**10.9**	**10.9**
14	DBW313	214	9.7	11.5	14.6	10.7	12.0	**11.7**	11.8	12.3	-	9.4	**11.2**	**11.5**
15	BRW3877	215	9.2	13.4	12.4	10.3	9.4	**10.9**	11.3	11.3	-	8.3	**10.3**	**10.7**
16	DBW312	216	9.3	12.0	13.1	9.7	10.4	**10.9**	11.0	12.4	-	8.3	**10.6**	**10.8**
17	UP3056	217	10.3	13.2	13.4	11.4	11.5	**11.9**	11.1	12.2	-	11.3	**11.5**	**11.8**
18	NW7088	218	10.1	-	14.1	10.3	10.4	**9.0**	11.2	10.8	-	10.4	**10.8**	**11.0**
19	HD3355	219	10.0	13.1	13.5	10.6	11.1	**11.7**	11.3	12.4	-	9.2	**11.0**	**11.4**
20	HUW841	220	9.7	13.5	14.8	8.5	12.7	**11.8**	12.8	13.4	-	11.1	**12.4**	**12.1**
21	K1904	221	9.7	13.2	15.1	11.8	12.0	**12.4**	11.9	12.7	-	9.2	**11.3**	**11.9**
22	HD3356	222	11.0	13.8	12.1	10.0	9.7	**11.3**	11.1	13.3	-	11.1	**11.8**	**11.5**
23	AAI-W22	223	9.6	14.6	13.5	11.9	12.0	**12.3**	12.7	15.3	-	11.4	**13.1**	**12.6**
24	HD3357	224	9.2	13.0	13.9	11.0	9.5	**11.3**	11.4	12.2	-	9.9	**11.1**	**11.2**
25	HUW840	225	12.4	13.7	13.7	11.2	10.5	**12.3**	13.1	13.2	-	12.1	**12.8**	**12.5**
26	HD2967 (C)	226	9.4	13.4	14.4	10.8	12.8	**12.2**	13.6	15.3	-	9.4	**12.8**	**12.4**
27	KRL1803	227	7.9	13.4	13.7	11.7	9.3	**11.2**	11.0	11.3	-	9.1	**10.4**	**10.9**
28	KRL1808	228	11.6	12.2	12.7	11.4	10.3	**11.7**	10.5	11.4	-	10.6	**10.8**	**11.3**
29	JKW277	229	9.2	11.8	12.2	9.4	11.3	**10.8**	10.5	10.7	-	7.9	**9.7**	**10.4**
30	HD3086 (C)	230	9.7	12.7	12.1	10.6	11.3	**11.3**	11.5	13.0	-	10.6	**11.7**	**11.5**
31	DBW187 (C)	231	9.2	12.9	13.8	10.1	10.7	**11.4**	10.6	13.4	-	8.8	**10.9**	**11.2**
32	BRW3869	232	9.2	12.7	13.4	10.8	11.3	**11.5**	10.8	12.0	-	8.4	**10.4**	**11.1**
33	HD3354	233	9.9	12.6	12.1	10.6	11.3	**11.3**	10.9	12.8	-	8.4	**10.7**	**11.1**
34	DBW311	234	10.4	14.0	13.5	11.4	11.2	**12.1**	11.4	12.9	-	9.4	**11.2**	**11.8**
35	K1006 (C)	235	8.7	12.2	13.2	10.6	11.1	**11.2**	11.7	11.2	-	8.8	**10.6**	**10.9**
36	DBW310	236	9.9	14.3	13.3	10.5	10.9	**11.8**	12.0	13.9	-	10.7	**12.2**	**11.9**
Mean			**9.7**	**12.9**	**13.4**	**10.6**	**10.8**	**11.4**	**11.4**	**12.3**	**-**	**9.7**	**11.1**	**11.4**

Table 9: Sedimentation value (ml) of *T. aestivum* genotypes in NIVT-1B

S. No.	Entry	Trial Code	NWPZ							NEPZ				Overall Mean
			Ludhiana	Durgapura	Delhi	Pantnagar	Hisar	Mean	Kanpur	Pusa	Sabour	Varanasi	Mean	
1	WH1274	201	50.0	51.0	57.0	49.0	57.3	**52.9**	48.0	45.5	45.0	44.5	**45.8**	**49.7**
2	JKW275	202	52.0	60.5	62.5	50.0	69.1	**58.8**	53.0	66.5	63.0	44.0	**56.6**	**57.8**
3	K1905	203	55.0	68.5	62.0	60.0	70.1	**63.1**	60.3	65.0	42.0	49.5	**54.2**	**59.2**
4	UP3055	204	59.0	49.0	51.0	54.0	63.5	**55.3**	53.5	61.5	57.0	51.5	**55.9**	**55.6**
5	NW7093	205	36.0	37.0	42.5	44.0	43.2	**40.5**	37.5	50.5	56.0	45.0	**47.3**	**43.5**
6	Raj4549	206	39.0	36.0	41.0	43.0	41.8	**40.2**	44.5	48.0	49.0	42.5	**46.0**	**42.8**
7	K1903	207	60.0	60.5	36.5	51.0	65.4	**54.7**	51.0	59.5	56.0	48.0	**53.6**	**54.2**
8	PBW830	208	30.0	31.0	22.0	45.0	37.0	**33.0**	33.5	43.0	40.0	28.5	**36.3**	**34.4**
9	PBW831	209	52.0	50.0	45.0	35.0	55.9	**47.6**	45.0	52.5	57.0	42.5	**49.3**	**48.3**
10	NW7094	210	50.0	51.5	45.5	53.0	55.9	**51.2**	49.5	63.5	52.0	46.0	**52.8**	**51.9**
11	UP3057	211	49.0	59.5	53.5	46.0	57.3	**53.1**	54.0	59.0	49.0	39.0	**50.3**	**51.8**
12	WH1283	212	48.0	51.5	51.5	49.0	57.8	**51.6**	50.3	52.5	50.0	44.0	**49.2**	**50.5**
13	Raj4550	213	55.0	50.5	61.0	59.0	62.1	**57.5**	55.0	48.0	48.0	41.0	**48.0**	**53.3**
14	DBW313	214	66.0	64.5	59.5	58.0	73.8	**64.4**	64.0	59.0	55.0	60.5	**59.6**	**62.3**
15	BRW3877	215	39.0	34.0	42.0	36.0	46.5	**39.5**	40.5	45.5	50.0	49.5	**46.4**	**42.6**
16	DBW312	216	41.0	32.5	35.5	42.0	49.3	**40.1**	46.0	44.5	51.0	35.0	**44.1**	**41.9**
17	UP3056	217	67.0	59.0	60.5	68.0	76.2	**66.1**	63.5	61.5	63.0	54.0	**60.5**	**63.6**
18	NW7088	218	59.0	61.5	52.0	56.0	62.1	**58.1**	59.5	54.5	51.0	52.0	**54.3**	**56.4**
19	HD3355	219	57.0	37.0	42.5	47.0	59.7	**48.6**	52.5	57.5	67.0	45.0	**55.5**	**51.7**
20	HUW841	220	55.0	49.0	51.5	55.0	63.5	**54.8**	54.5	52.0	43.0	51.5	**50.3**	**52.8**
21	K1904	221	65.0	55.5	49.5	59.0	69.1	**59.6**	53.5	64.0	55.0	52.5	**56.3**	**58.1**
22	HD3356	222	48.0	59.0	34.0	47.0	55.0	**48.6**	47.5	51.5	51.0	47.0	**49.3**	**48.9**
23	AAI-W22	223	50.0	47.5	55.5	45.0	54.1	**50.4**	40.5	46.0	45.0	41.0	**43.1**	**47.2**
24	HD3357	224	57.0	49.5	43.5	50.0	55.9	**51.2**	47.5	55.5	37.0	41.0	**45.3**	**48.5**
25	HUW840	225	47.0	41.5	36.0	39.0	49.3	**42.6**	44.5	42.5	43.0	35.5	**41.4**	**42.0**
26	HD2967 (C)	226	53.0	53.0	51.5	49.0	57.3	**52.8**	51.0	61.5	33.0	50.5	**49.0**	**51.1**
27	KRL1803	227	52.0	55.0	53.5	56.0	62.1	**55.7**	53.5	63.5	59.0	48.0	**56.0**	**55.8**
28	KRL1808	228	62.0	53.0	49.0	51.0	58.8	**54.8**	51.5	51.5	60.0	58.5	**55.4**	**55.0**
29	JKW277	229	51.0	48.0	58.5	40.0	55.9	**50.7**	51.5	52.5	47.0	40.0	**47.8**	**49.4**
30	HD3086 (C)	230	60.3	52.0	51.5	52.0	65.4	**56.2**	56.0	60.5	61.0	47.0	**56.1**	**56.2**
31	DBW187 (C)	231	59.0	60.5	60.5	53.0	65.4	**59.7**	61.0	53.0	55.0	50.5	**54.9**	**57.5**
32	BRW3869	232	69.0	55.0	59.0	63.0	71.5	**63.5**	56.0	66.5	36.0	61.0	**54.9**	**59.7**
33	HD3354	233	58.0	50.0	57.0	52.0	65.4	**56.5**	44.0	55.5	49.0	45.0	**48.4**	**52.9**
34	DBW311	234	60.0	49.5	51.0	67.0	70.1	**59.5**	59.5	57.5	60.0	65.0	**60.5**	**60.0**
35	K1006 (C)	235	39.0	33.0	41.5	35.0	44.6	**38.6**	31.0	41.0	50.0	41.5	**40.9**	**39.6**
36	DBW310	236	54.0	66.5	40.5	56.0	61.1	**55.6**	48.0	59.0	53.0	53.0	**53.3**	**54.6**
Mean			**52.9**	**50.6**	**49.1**	**50.4**	**59.1**	**52.4**	**50.3**	**54.8**	**51.1**	**47.0**	**50.8**	**51.7**

Table 10: Phenol test (Max-10) of *T. aestivum* genotypes in NIVT-1B

S. No.	Entry	Trial Code	NWPZ							NEPZ				Overall Mean
			Ludhiana	Durgapura	Delhi	Pantnagar	Hisar	Mean	Kanpur	Pusa	Sabour	Varanasi	Mean	
1	WH1274	201	5.0	6.0	6.0	6.0	6.0	**5.8**	5.0	6.0	5.0	6.0	**5.5**	**5.7**
2	JKW275	202	6.0	5.0	5.0	6.0	7.0	**5.8**	6.0	7.0	5.0	5.0	**5.8**	**5.8**
3	K1905	203	6.0	7.0	6.0	6.0	4.0	**5.8**	8.0	7.0	8.0	5.0	**7.0**	**6.3**
4	UP3055	204	5.0	6.0	5.0	5.0	6.0	**5.4**	5.0	6.0	4.0	5.0	**5.0**	**5.2**
5	NW7093	205	6.0	4.0	6.0	7.0	7.0	**6.0**	5.0	6.0	5.0	4.0	**5.0**	**5.6**
6	Raj4549	206	5.0	5.0	6.0	6.0	6.0	**5.6**	6.0	7.0	4.0	5.0	**5.5**	**5.6**
7	K1903	207	5.0	6.0	4.0	5.0	7.0	**5.4**	5.0	7.0	6.0	5.0	**5.8**	**5.6**
8	PBW830	208	6.0	6.0	4.0	6.0	6.0	**5.6**	6.0	6.0	5.0	4.0	**5.3**	**5.4**
9	PBW831	209	5.0	7.0	5.0	5.0	5.0	**5.4**	5.0	6.0	4.0	4.0	**4.8**	**5.1**
10	NW7094	210	6.0	5.0	4.0	5.0	6.5	**5.3**	8.0	6.0	5.0	5.0	**6.0**	**5.6**
11	UP3057	211	4.0	6.0	7.0	6.0	6.5	**5.9**	4.0	7.0	6.0	6.0	**5.8**	**5.8**
12	WH1283	212	4.0	5.0	5.0	5.0	5.0	**4.8**	5.0	6.0	5.0	7.0	**5.8**	**5.2**
13	Raj4550	213	8.0	8.0	6.0	5.0	5.0	**6.4**	8.0	7.0	7.0	6.0	**7.0**	**6.7**
14	DBW313	214	5.0	6.0	5.0	6.0	5.0	**5.4**	6.0	7.0	7.0	8.0	**7.0**	**6.1**
15	BRW3877	215	7.0	6.0	6.0	5.0	5.0	**5.8**	5.0	7.0	5.0	6.0	**5.8**	**5.8**
16	DBW312	216	6.0	7.0	6.0	6.0	3.5	**5.7**	6.0	7.0	5.0	8.0	**6.5**	**6.1**
17	UP3056	217	5.0	6.0	5.0	5.0	5.0	**5.2**	4.0	8.0	5.0	6.0	**5.8**	**5.4**
18	NW7088	218	6.0	5.0	5.0	7.0	6.5	**5.9**	5.0	6.0	6.0	5.0	**5.5**	**5.7**
19	HD3355	219	5.0	7.0	6.0	5.0	4.0	**5.4**	4.0	7.0	5.0	5.0	**5.3**	**5.3**
20	HUW841	220	8.0	7.0	8.0	5.0	4.5	**6.5**	7.0	7.0	6.0	6.0	**6.5**	**6.5**
21	K1904	221	6.0	6.0	6.0	6.0	7.5	**6.3**	4.0	6.0	6.0	7.0	**5.8**	**6.1**
22	HD3356	222	5.0	5.0	6.0	7.0	6.0	**5.8**	5.0	7.0	5.0	6.0	**5.8**	**5.8**
23	AAI-W22	223	5.0	6.0	5.0	6.0	5.5	**5.5**	5.0	8.0	5.0	5.0	**5.8**	**5.6**
24	HD3357	224	6.0	5.0	4.0	7.0	6.0	**5.6**	4.0	8.0	8.0	6.0	**6.5**	**6.0**
25	HUW840	225	6.0	6.0	4.0	5.0	5.5	**5.3**	6.0	7.0	4.0	6.0	**5.8**	**5.5**
26	HD2967 (C)	226	5.0	5.0	5.0	6.0	5.0	**5.2**	5.0	7.0	5.0	7.0	**6.0**	**5.6**
27	KRL1803	227	6.0	5.0	6.0	6.0	7.5	**6.1**	5.0	8.0	6.0	5.0	**6.0**	**6.1**
28	KRL1808	228	5.0	5.0	5.0	6.0	5.0	**5.2**	6.0	6.0	5.0	4.0	**5.3**	**5.2**
29	JKW277	229	8.0	8.0	8.0	5.0	4.5	**6.7**	8.0	8.0	7.0	8.0	**7.8**	**7.2**
30	HD3086 (C)	230	6.0	5.0	6.0	6.0	7.5	**6.1**	5.0	7.0	5.0	6.0	**5.8**	**5.9**
31	DBW187 (C)	231	5.0	5.0	5.0	5.0	8.0	**5.6**	5.0	6.0	6.0	5.0	**5.5**	**5.6**
32	BRW3869	232	5.0	5.0	5.0	5.0	7.0	**5.4**	6.0	7.0	8.0	5.0	**6.5**	**5.9**
33	HD3354	233	6.0	6.0	6.0	7.0	7.0	**6.4**	4.0	7.0	3.0	5.0	**4.8**	**5.7**
34	DBW311	234	4.0	5.0	4.0	6.0	6.5	**5.1**	5.0	7.0	4.0	6.0	**5.5**	**5.3**
35	K1006 (C)	235	5.0	6.0	4.0	7.0	6.5	**5.7**	6.0	6.0	5.0	6.0	**5.8**	**5.7**
36	DBW310	236	4.0	5.0	5.0	5.0	5.0	**4.8**	5.0	7.0	4.0	7.0	**5.8**	**5.2**
Mean			**5.6**	**5.8**	**5.4**	**5.8**	**5.8**	**5.7**	**5.5**	**6.8**	**5.4**	**5.7**	**5.8**	**5.7**

Table 11: Grain Appearance Score (Max-10) of *T. aestivum* genotypes in NIVT-2

S. No.	Entry	Trial Code	CZ					PZ			
			Indore	Junagarh	P'kheda	Vijapur	Mean	Pune	Niphad	Mean	Overall Mean
1	GW521	301	6.6	7.0	6.6	6.5	**6.6**	6.6	6.7	**6.6**	**6.6**
2	MP3535	302	6.6	6.9	6.7	6.9	**6.7**	6.7	6.7	**6.7**	**6.7**
3	MACS6478 (C)	303	6.5	6.9	6.6	6.8	**6.7**	6.6	6.8	**6.7**	**6.7**
4	RVW4301	304	6.6	6.7	6.5	6.3	**6.5**	6.5	6.7	**6.6**	**6.5**
5	UAS3012	305	6.8	6.7	6.6	6.8	**6.7**	6.7	7.0	**6.8**	**6.8**
6	NWS2176	306	6.7	6.7	6.6	6.7	**6.7**	6.7	6.8	**6.7**	**6.7**
7	RVW4304	307	6.9	7.0	6.7	6.9	**6.9**	6.7	6.7	**6.7**	**6.8**
8	HI1544 (C)	308	7.0	7.0	6.7	6.9	**6.9**	6.8	6.8	**6.8**	**6.8**
9	DBW314	309	6.9	6.9	6.8	6.9	**6.8**	6.8	6.8	**6.8**	**6.8**
10	HI1650	310	6.9	7.0	6.7	6.7	**6.8**	6.7	6.7	**6.7**	**6.8**
11	HD3376	311	6.6	6.6	6.5	6.7	**6.6**	6.5	6.7	**6.6**	**6.6**
12	GW322 (C)	312	6.6	6.7	6.6	6.5	**6.6**	6.5	6.8	**6.6**	**6.6**
13	HI1648	313	6.8	6.9	6.7	6.6	**6.7**	6.8	6.7	**6.7**	**6.7**
14	WH1275	314	6.5	6.8	6.6	6.8	**6.7**	6.7	6.6	**6.6**	**6.6**
15	MACS3735	315	6.8	6.9	6.6	6.7	**6.7**	6.6	6.7	**6.6**	**6.7**
16	UAS3011	316	6.6	6.6	6.7	6.6	**6.6**	6.6	6.7	**6.6**	**6.6**
17	GW522	317	6.7	6.8	6.7	6.9	**6.7**	6.6	6.7	**6.6**	**6.7**
18	NIAW3889	318	6.7	6.8	6.7	6.9	**6.7**	6.6	6.8	**6.7**	**6.7**
19	HI1649	319	6.7	7.0	6.8	6.7	**6.8**	6.7	6.8	**6.7**	**6.8**
20	NIAW3882	320	6.7	6.7	6.8	6.8	**6.7**	6.6	6.8	**6.7**	**6.7**
21	AKAW5099	321	6.7	7.1	6.6	6.5	**6.7**	6.7	6.6	**6.6**	**6.7**
22	HD3359	322	6.6	6.8	6.5	6.5	**6.6**	6.6	6.7	**6.7**	**6.6**
23	MP1369	323	6.9	7.1	6.8	7.2	**7.0**	6.9	6.8	**6.8**	**6.9**
24	UP3058	324	6.6	6.7	6.6	6.5	**6.6**	6.5	6.5	**6.5**	**6.5**
25	HI1647	325	6.6	6.8	6.6	6.4	**6.6**	6.6	6.6	**6.6**	**6.6**
26	MACS6764	326	6.9	7.0	6.7	6.8	**6.8**	6.7	6.8	**6.7**	**6.8**
27	PBW832	327	6.8	6.9	6.6	7.2	**6.9**	6.7	6.8	**6.7**	**6.8**
28	GW523	328	6.6	6.9	6.7	6.8	**6.7**	6.6	6.7	**6.7**	**6.7**
29	MP1370	329	6.7	6.7	6.8	6.8	**6.7**	6.6	6.8	**6.7**	**6.7**
30	CG1034	330	6.8	7.0	6.7	7.1	**6.9**	6.7	6.9	**6.8**	**6.8**
31	MACS6768	331	6.8	7.0	6.8	7.1	**6.9**	6.8	6.9	**6.8**	**6.9**
32	Raj4551	332	6.8	6.9	6.6	6.7	**6.7**	6.6	6.7	**6.7**	**6.7**
33	DBW315	333	6.6	6.6	6.5	6.8	**6.6**	6.6	6.7	**6.6**	**6.6**
34	MP3526	334	6.7	6.6	6.6	6.9	**6.7**	6.7	6.6	**6.7**	**6.7**
35	MP1371	335	6.5	6.9	6.7	6.7	**6.7**	6.7	6.7	**6.7**	**6.7**
36	MACS6222 (C)	336	6.8	7.0	6.8	7.0	**6.9**	6.8	6.8	**6.8**	**6.8**
Mean			**6.7**	**6.8**	**6.6**	**6.7**	**6.7**	**6.6**	**6.7**	**6.7**	**6.7**

Table 12: Hectolitre weight (kg/hl) of *T. aestivum* genotypes in NIVT 2

S. No.	Entry	Trial Code	CZ					PZ			
			Indore	Junagarh	P'kheda	Vijapur	Mean	Pune	Niphad	Mean	Overall Mean
1	GW521	301	79.6	81.5	78.4	79.0	**79.6**	77.7	79.6	**78.6**	**79.3**
2	MP3535	302	79.3	81.9	78.9	79.0	**79.8**	79.8	80.3	**80.0**	**79.9**
3	MACS6478 (C)	303	73.6	80.0	75.2	73.0	**75.4**	75.5	79.3	**77.4**	**76.1**
4	RVW4301	304	81.0	81.3	80.2	79.7	**80.5**	79.3	80.4	**79.8**	**80.3**
5	UAS3012	305	80.0	80.7	77.6	80.0	**79.5**	79.5	81.7	**80.6**	**79.9**
6	NWS2176	306	79.1	82.0	77.6	77.9	**79.1**	78.0	79.8	**78.9**	**79.0**
7	RVW4304	307	80.8	81.8	78.9	79.7	**80.3**	79.3	81.0	**80.1**	**80.2**
8	HI1544 (C)	308	81.0	81.2	80.5	80.0	**80.7**	78.3	81.1	**79.7**	**80.3**
9	DBW314	309	80.4	80.9	79.6	79.5	**80.1**	79.4	80.8	**80.1**	**80.1**
10	HI1650	310	82.2	82.7	79.8	79.6	**81.0**	80.1	80.5	**80.3**	**80.7**
11	HD3376	311	78.9	78.9	75.9	75.6	**77.3**	75.7	79.3	**77.5**	**77.4**
12	GW322 (C)	312	78.3	80.1	75.7	76.8	**77.7**	75.2	79.3	**77.3**	**77.5**
13	HI1648	313	77.8	79.2	76.9	76.7	**77.6**	75.4	78.3	**76.8**	**77.3**
14	WH1275	314	75.7	80.8	79.0	77.8	**78.3**	78.5	77.2	**77.8**	**78.1**
15	MACS3735	315	80.3	81.0	78.7	78.6	**79.6**	76.5	78.5	**77.5**	**78.8**
16	UAS3011	316	77.8	79.2	77.7	75.4	**77.5**	78.3	80.1	**79.2**	**78.1**
17	GW522	317	80.1	80.6	79.8	78.6	**79.7**	77.9	79.3	**78.6**	**79.3**
18	NIAW3889	318	78.3	79.9	76.6	77.1	**78.0**	76.3	77.9	**77.1**	**77.6**
19	HI1649	319	79.7	82.2	80.6	79.9	**80.6**	79.4	80.5	**79.9**	**80.3**
20	NIAW3882	320	76.6	79.8	76.6	76.7	**77.4**	74.5	78.4	**76.4**	**77.0**
21	AKAW5099	321	79.1	81.0	78.9	78.5	**79.4**	78.2	79.3	**78.7**	**79.1**
22	HD3359	322	79.6	80.6	76.8	78.7	**78.9**	78.1	78.6	**78.3**	**78.7**
23	MP1369	323	81.3	82.3	80.5	81.0	**81.3**	80.0	80.3	**80.1**	**80.8**
24	UP3058	324	79.3	80.8	78.2	78.3	**79.1**	78.3	77.2	**77.7**	**78.6**
25	HI1647	325	76.5	80.3	76.1	76.3	**77.3**	75.0	77.2	**76.1**	**76.8**
26	MACS6764	326	81.3	81.5	80.4	80.7	**80.9**	80.7	81.2	**80.9**	**80.9**
27	PBW832	327	79.5	80.3	78.3	78.8	**79.2**	77.6	79.2	**78.4**	**78.9**
28	GW523	328	77.9	79.9	77.3	76.7	**77.9**	76.6	78.7	**77.6**	**77.8**
29	MP1370	329	79.3	78.9	79.2	78.2	**78.9**	77.3	78.5	**77.9**	**78.5**
30	CG1034	330	76.3	79.3	75.4	76.0	**76.7**	74.1	77.4	**75.7**	**76.4**
31	MACS6768	331	80.8	81.9	80.1	80.0	**80.7**	79.8	81.2	**80.5**	**80.6**
32	Raj4551	332	79.6	81.0	77.5	79.1	**79.3**	76.8	79.7	**78.2**	**78.9**
33	DBW315	333	75.9	77.9	75.3	76.2	**76.3**	76.2	78.8	**77.5**	**76.7**
34	MP3526	334	78.4	79.7	76.8	79.9	**78.7**	78.3	79.0	**78.6**	**78.7**
35	MP1371	335	80.1	82.1	78.7	80.1	**80.2**	78.9	79.9	**79.4**	**79.9**
36	MACS6222 (C)	336	81.8	81.8	79.5	79.1	**80.5**	80.3	80.6	**80.4**	**80.5**
Mean			**79.1**	**80.7**	**78.1**	**78.3**	**79.0**	**77.8**	**79.4**	**78.6**	**78.9**

Table 13: Protein content (%) at 12% moisture basis of *T. aestivum* genotypes in NIVT-2

S. No.	Entry	Trial Code	CZ					PZ			
			Indore	Junagarh	P'kheda	Vijapur	Mean	Pune	Niphad	Mean	Overall Mean
1	GW521	301	9.6	12.1	11.1	10.3	**10.8**	11.1	11.4	**11.3**	**11.0**
2	MP3535	302	10.2	12.4	12.1	10.8	**11.4**	12.4	12.6	**12.5**	**11.8**
3	MACS6478 (C)	303	9.2	11.9	12.5	10.6	**11.0**	12.0	11.8	**11.9**	**11.4**
4	RVW4301	304	9.6	12.8	11.8	11.1	**11.3**	12.9	11.7	**12.3**	**11.7**
5	UAS3012	305	10.3	11.3	11.8	9.7	**10.8**	11.1	12.2	**11.7**	**11.1**
6	NWS2176	306	10.3	12.4	12.9	10.8	**11.6**	12.1	12.0	**12.1**	**11.8**
7	RVW4304	307	10.5	12.2	11.5	11.0	**11.3**	12.1	12.6	**12.4**	**11.7**
8	HI1544 (C)	308	9.9	12.1	11.4	11.0	**11.1**	11.5	12.4	**11.9**	**11.4**
9	DBW314	309	10.4	11.8	12.0	10.8	**11.3**	11.6	12.6	**12.1**	**11.6**
10	HI1650	310	9.5	11.9	11.3	10.3	**10.7**	11.4	12.2	**11.8**	**11.1**
11	HD3376	311	10.2	11.3	12.0	11.5	**11.2**	12.1	12.2	**12.1**	**11.6**
12	GW322 (C)	312	8.6	10.9	11.0	8.5	**9.8**	11.2	11.3	**11.2**	**10.3**
13	HI1648	313	10.1	12.2	11.7	10.1	**11.0**	11.4	12.8	**12.1**	**11.4**
14	WH1275	314	8.8	12.0	11.2	9.4	**10.3**	12.3	12.1	**12.2**	**11.0**
15	MACS3735	315	9.6	12.0	11.0	10.2	**10.7**	11.8	12.6	**12.2**	**11.3**
16	UAS3011	316	10.3	12.1	11.7	11.7	**11.5**	11.9	11.7	**11.8**	**11.6**
17	GW522	317	9.5	12.0	11.6	11.9	**11.2**	12.5	12.5	**12.5**	**11.7**
18	NIAW3889	318	10.3	11.3	11.7	10.2	**10.9**	12.4	12.2	**12.3**	**11.4**
19	HI1649	319	9.5	11.5	11.1	9.7	**10.4**	11.5	12.5	**12.0**	**11.0**
20	NIAW3882	320	10.8	11.7	12.1	11.4	**11.5**	12.5	11.9	**12.2**	**11.8**
21	AKAW5099	321	10.8	12.3	11.9	10.6	**11.4**	11.9	12.7	**12.3**	**11.8**
22	HD3359	322	9.9	12.7	13.1	10.6	**11.6**	12.2	13.6	**12.9**	**12.1**
23	MP1369	323	9.9	12.3	11.4	10.5	**11.0**	12.0	11.8	**11.9**	**11.4**
24	UP3058	324	11.4	12.5	13.0	12.5	**12.3**	13.0	13.5	**13.2**	**12.7**
25	HI1647	325	10.4	12.1	12.0	9.8	**11.1**	12.1	11.9	**12.0**	**11.4**
26	MACS6764	326	9.8	12.0	11.5	10.4	**10.9**	12.0	13.1	**12.5**	**11.5**
27	PBW832	327	10.0	13.2	12.0	11.0	**11.5**	12.9	13.5	**13.2**	**12.2**
28	GW523	328	8.8	11.1	10.6	8.9	**9.8**	11.4	11.7	**11.6**	**10.5**
29	MP1370	329	11.2	13.0	12.2	11.6	**12.0**	12.4	12.4	**12.4**	**12.1**
30	CG1034	330	9.2	11.7	11.2	10.6	**10.6**	11.9	11.4	**11.7**	**11.0**
31	MACS6768	331	9.7	12.3	11.6	11.7	**11.3**	12.4	12.9	**12.6**	**11.8**
32	Raj4551	332	11.0	12.2	12.1	10.8	**11.5**	12.3	12.6	**12.5**	**11.9**
33	DBW315	333	11.5	12.3	13.2	11.2	**12.0**	12.7	12.8	**12.7**	**12.3**
34	MP3526	334	10.7	12.4	12.2	10.6	**11.5**	12.4	12.6	**12.5**	**11.8**
35	MP1371	335	9.2	12.5	11.6	10.0	**10.8**	12.0	12.1	**12.1**	**11.3**
36	MACS6222 (C)	336	9.2	11.8	11.5	11.5	**11.0**	12.1	12.8	**12.4**	**11.5**
Mean			**10.0**	**12.1**	**11.8**	**10.6**	**11.1**	**12.0**	**12.4**	**12.2**	**11.5**

Table 14: Sedimentation value (ml) of *T. aestivum* genotypes in NIVT-2

S. No.	Entry	Trial Code	CZ					PZ			
			Indore	Junagarh	P'kheda	Vijapur	Mean	Pune	Niphad	Mean	Overall Mean
1	GW521	301	35	44	39	38	**39**	39	41	**40**	**39**
2	MP3535	302	42	48	44	40	**43**	47	47	**47**	**45**
3	MACS6478 (C)	303	38	43	45	40	**42**	43	45	**44**	**43**
4	RVW4301	304	33	46	41	38	**39**	46	41	**43**	**41**
5	UAS3012	305	39	42	42	38	**40**	41	45	**43**	**41**
6	NWS2176	306	43	48	48	42	**46**	48	46	**47**	**46**
7	RVW4304	307	36	42	39	37	**38**	41	43	**42**	**40**
8	HI1544 (C)	308	35	42	39	37	**38**	40	42	**41**	**39**
9	DBW314	309	35	40	40	35	**37**	39	43	**41**	**39**
10	HI1650	310	32	39	36	34	**35**	38	41	**40**	**37**
11	HD3376	311	37	40	41	41	**40**	40	43	**41**	**40**
12	GW322 (C)	312	30	37	38	29	**33**	39	38	**38**	**35**
13	HI1648	313	34	42	38	34	**37**	38	43	**40**	**38**
14	WH1275	314	31	41	38	32	**35**	41	42	**42**	**38**
15	MACS3735	315	33	40	35	34	**36**	39	42	**41**	**37**
16	UAS3011	316	39	44	41	41	**41**	42	42	**42**	**41**
17	GW522	317	33	42	39	40	**38**	43	43	**43**	**40**
18	NIAW3889	318	41	44	43	38	**41**	45	43	**44**	**42**
19	HI1649	319	37	44	39	36	**39**	40	46	**43**	**40**
20	NIAW3882	320	42	44	43	40	**42**	45	43	**44**	**43**
21	AKAW5099	321	40	44	41	38	**41**	42	44	**43**	**41**
22	HD3359	322	39	48	45	40	**43**	46	51	**48**	**45**
23	MP1369	323	35	45	38	37	**39**	42	42	**42**	**40**
24	UP3058	324	38	42	43	41	**41**	44	46	**45**	**43**
25	HI1647	325	45	47	45	39	**44**	47	48	**47**	**45**
26	MACS6764	326	34	42	39	36	**38**	41	43	**42**	**39**
27	PBW832	327	35	46	40	36	**39**	46	50	**48**	**43**
28	GW523	328	31	37	35	29	**33**	38	40	**39**	**35**
29	MP1370	329	41	47	45	41	**43**	44	45	**44**	**44**
30	CG1034	330	35	42	41	38	**39**	42	41	**41**	**40**
31	MACS6768	331	34	41	38	39	**38**	42	43	**42**	**40**
32	Raj4551	332	41	46	42	38	**42**	44	46	**45**	**43**
33	DBW315	333	46	47	49	44	**46**	46	48	**47**	**47**
34	MP3526	334	43	47	45	40	**44**	46	49	**47**	**45**
35	MP1371	335	33	46	41	36	**39**	42	43	**42**	**40**
36	MACS6222 (C)	336	32	40	38	39	**37**	40	44	**42**	**39**
Mean			**37**	**43**	**41**	**38**	**40**	**42**	**44**	**43**	**41**

Table 15: Phenol test (Max-10) of *T. aestivum* genotypes in NIVT 2

S. No.	Entry	Trial Code	CZ					PZ			
			Indore	Junagarh	P'kheda	Vijapur	Mean	Pune	Niphad	Mean	Overall Mean
1	GW521	301	2	2	2	2	**2.0**	2	2	**2.0**	**2.0**
2	MP3535	302	4	4	4	5	**4.3**	4	4	**4.0**	**4.2**
3	MACS6478 (C)	303	2	1	2	2	**1.8**	1	1	**1.0**	**1.5**
4	RVW4301	304	5	5	6	4	**5.0**	6	5	**5.5**	**5.2**
5	UAS3012	305	6	5	7	5	**5.8**	6	6	**6.0**	**5.8**
6	NWS2176	306	8	8	8	8	**8.0**	8	8	**8.0**	**8.0**
7	RVW4304	307	7	7	7	7	**7.0**	8	6	**7.0**	**7.0**
8	HI1544 (C)	308	7	7	6	6	**6.5**	7	6	**6.5**	**6.5**
9	DBW314	309	8	8	8	8	**8.0**	7	7	**7.0**	**7.6**
10	HI1650	310	7	6	7	7	**6.8**	7	6	**6.5**	**6.7**
11	HD3376	311	6	6	6	7	**6.3**	7	6	**6.5**	**6.3**
12	GW322 (C)	312	5	6	6	6	**5.8**	6	5	**5.5**	**5.7**
13	HI1648	313	2	2	2	2	**2.0**	2	2	**2.0**	**2.0**
14	WH1275	314	6	7	7	7	**6.8**	6	7	**6.5**	**6.7**
15	MACS3735	315	6	6	6	6	**6.0**	6	6	**6.0**	**6.0**
16	UAS3011	316	7	7	6	8	**7.0**	6	6	**6.0**	**6.6**
17	GW522	317	6	6	6	6	**6.0**	6	6	**6.0**	**6.0**
18	NIAW3889	318	8	6	7	7	**7.0**	7	7	**7.0**	**7.0**
19	HI1649	319	4	5	3	5	**4.3**	5	4	**4.5**	**4.3**
20	NIAW3882	320	6	7	7	6	**6.5**	7	7	**7.0**	**6.7**
21	AKAW5099	321	6	7	6	6	**6.3**	7	6	**6.5**	**6.3**
22	HD3359	322	7	8	7	8	**7.5**	8	7	**7.5**	**7.5**
23	MP1369	323	4	5	5	4	**4.5**	4	5	**4.5**	**4.5**
24	UP3058	324	6	6	6	5	**5.8**	5	6	**5.5**	**5.7**
25	HI1647	325	8	7	8	7	**7.5**	6	7	**6.5**	**7.1**
26	MACS6764	326	6	6	6	6	**6.0**	5	6	**5.5**	**5.8**
27	PBW832	327	7	6	7	7	**6.8**	6	7	**6.5**	**6.7**
28	GW523	328	5	5	6	5	**5.3**	5	5	**5.0**	**5.2**
29	MP1370	329	6	7	7	8	**7.0**	6	6	**6.0**	**6.6**
30	CG1034	330	1	1	1	1	**1.0**	1	1	**1.0**	**1.0**
31	MACS6768	331	5	5	5	6	**5.3**	6	5	**5.5**	**5.3**
32	Raj4551	332	7	6	6	7	**6.5**	7	7	**7.0**	**6.7**
33	DBW315	333	7	7	7	7	**7.0**	7	7	**7.0**	**7.0**
34	MP3526	334	5	6	6	6	**5.8**	6	6	**6.0**	**5.8**
35	MP1371	335	7	6	5	6	**6.0**	6	6	**6.0**	**6.0**
36	MACS6222 (C)	336	7	6	6	6	**6.3**	7	6	**6.5**	**6.3**
Mean			**5.7**	**5.7**	**5.8**	**5.8**	**5.7**	**5.7**	**5.6**	**5.6**	**5.7**

Table 16: Grain appearance score (Max-10) of *T. aestivum* genotypes in NIVT-3A

S. No.	Entry	Trial Code	NWPZ							NEPZ				Overall Mean
		Trial Code	Pantnagar	Ludhiana	Hisar	Delhi	Durgapura	Karnal	Mean	Kanpur	Samastipur	Varanasi	Mean	
1	K1907	401	5.0	4.0	4.8	5.0	6.0	5.0	**5.0**	4.0	5.0	3.5	**4.2**	**4.6**
2	HD3361	402	5.0	5.0	5.2	5.0	6.0	5.6	**5.3**	4.5	5.0	3.0	**4.2**	**4.7**
3	DBW335	403	5.5	4.0	4.8	5.0	7.0	6.0	**5.4**	5.5	5.0	4.0	**4.8**	**5.1**
4	HD3362	404	5.5	4.0	5.4	5.5	6.5	6.8	**5.6**	5.0	5.0	4.0	**4.7**	**5.1**
5	WH1278	405	5.5	4.5	5.6	5.5	7.0	6.0	**5.7**	4.0	5.0	3.5	**4.2**	**4.9**
6	DBW173 (C)	406	5.0	5.0	5.2	5.5	6.0	6.6	**5.6**	4.5	5.5	4.0	**4.7**	**5.1**
7	UP3065	407	6.0	4.0	5.2	6.0	5.5	6.6	**5.6**	5.0	5.5	4.0	**4.8**	**5.2**
8	NW7092	408	4.5	3.5	4.8	5.0	5.5	5.6	**4.8**	4.0	5.5	3.5	**4.3**	**4.6**
9	HD3363	409	4.0	5.0	5.4	5.0	6.5	6.0	**5.3**	4.5	5.0	4.0	**4.5**	**4.9**
10	PBW836	410	5.5	5.0	5.6	6.0	7.0	5.0	**5.7**	5.0	5.0	4.0	**4.7**	**5.2**
11	DBW317	411	5.5	5.0	5.6	6.0	5.0	5.4	**5.4**	5.5	6.0	4.5	**5.3**	**5.4**
12	K1908	412	6.5	5.5	5.8	7.0	6.5	6.4	**6.3**	5.5	6.0	5.0	**5.5**	**5.9**
13	HD3364	413	5.5	4.5	5.0	5.0	6.0	6.6	**5.4**	5.0	4.0	3.5	**4.2**	**4.8**
14	PBW834	414	6.0	5.5	5.2	6.0	7.0	5.0	**5.8**	5.5	5.0	5.0	**5.2**	**5.5**
15	HUW842	415	5.0	4.0	5.4	6.0	6.5	6.6	**5.6**	5.5	5.5	5.0	**5.3**	**5.5**
16	UP3059	416	5.0	5.0	5.6	5.0	6.0	5.0	**5.3**	4.0	4.5	4.0	**4.2**	**4.7**
17	Raj4552	417	6.0	5.0	5.2	5.5	6.0	6.6	**5.7**	5.0	6.0	4.0	**5.0**	**5.4**
18	HD3360	418	4.5	4.0	5.2	6.0	6.0	6.2	**5.3**	5.0	5.0	3.5	**4.5**	**4.9**
19	UP3061	419	5.0	4.5	5.0	4.5	6.5	5.0	**5.1**	4.5	4.5	3.0	**4.0**	**4.5**
20	HD3365	420	5.0	4.0	5.0	6.0	5.5	5.0	**5.1**	5.0	5.5	3.5	**4.7**	**4.9**
21	WH1276	421	5.5	5.5	5.4	7.0	6.0	6.4	**6.0**	5.5	6.0	4.5	**5.3**	**5.7**
22	Raj4554	422	5.0	4.0	4.6	5.0	5.0	4.8	**4.7**	4.5	5.0	3.5	**4.3**	**4.5**
23	UP3060	423	5.0	5.5	5.0	6.5	6.5	6.8	**5.9**	6.0	5.5	5.0	**5.5**	**5.7**
24	HI1563 (C)	424	6.0	6.0	4.4	7.0	7.0	5.4	**6.0**	5.5	6.0	5.0	**5.5**	**5.7**
25	PBW833	425	6.0	5.0	5.2	6.5	5.5	6.0	**5.7**	4.0	5.5	5.0	**4.8**	**5.3**
26	DBW316	426	5.5	4.0	5.4	6.0	6.5	6.2	**5.6**	4.5	5.0	5.0	**4.8**	**5.2**
27	HD3059 (C)	427	5.0	5.0	5.6	6.0	4.5	5.8	**5.3**	5.5	4.5	4.0	**4.7**	**5.0**
28	DBW107 (C)	428	5.5	4.0	5.6	6.0	5.5	6.2	**5.5**	5.0	6.0	4.0	**5.0**	**5.2**
29	NW8000	429	5.0	5.0	4.8	4.5	5.5	6.0	**5.1**	5.0	5.5	4.0	**4.8**	**5.0**
30	PBW835	430	4.5	3.0	5.2	6.5	7.5	6.2	**5.5**	5.5	6.0	4.5	**5.3**	**5.4**
31	Raj4553	431	4.5	5.0	4.8	6.0	5.0	5.0	**5.1**	4.5	4.5	3.5	**4.2**	**4.6**
32	JKW278	432	5.5	5.5	4.8	6.5	5.5	5.2	**5.5**	4.0	4.5	3.5	**4.0**	**4.8**
33	WH1277	433	5.5	4.5	5.2	6.5	5.5	5.4	**5.4**	4.0	4.5	3.5	**4.0**	**4.7**
34	DBW318	434	6.0	4.5	5.2	6.0	6.5	6.8	**5.8**	4.5	6.0	4.5	**5.0**	**5.4**
35	DBW319	435	6.0	5.0	5.4	6.5	6.0	6.4	**5.9**	4.5	5.0	4.5	**4.7**	**5.3**
36	JKW270	436	6.0	4.0	4.8	6.0	7.0	6.2	**5.7**	5.5	6.5	5.0	**5.7**	**5.7**
Mean			**5.3**	**4.6**	**5.2**	**5.8**	**6.1**	**5.9**	**5.5**	**4.8**	**5.3**	**4.1**	**4.7**	**5.1**

Table 17: Hectolitre weight (kg/hl) of *T. aestivum* genotypes in NIVT-3A

S. No.	Entry	Trial Code	NWPZ							NEPZ				Overall Mean
			Pantnagar	Ludhiana	Hisar	Delhi	Durgapura	Karnal	Mean	Kanpur	Samastipur	Varanasi	Mean	
1	K1907	401	72.2	71.2	74.7	79.6	84.2	73.6	**75.9**	70.1	72.2	68.2	**70.1**	**73.0**
2	HD3361	402	70.8	73.8	77.5	79.0	74.2	77.0	**75.4**	70.8	71.3	61.2	**67.7**	**71.6**
3	DBW335	403	73.6	75.3	75.9	79.1	81.1	79.1	**77.3**	71.2	75.0	67.6	**71.3**	**74.3**
4	HD3362	404	77.8	76.9	77.8	80.7	79.5	81.7	**79.1**	76.3	76.0	70.5	**74.3**	**76.7**
5	WH1278	405	76.4	77.6	76.6	80.2	80.3	78.0	**78.2**	72.4	74.4	68.7	**71.8**	**75.0**
6	DBW173 (C)	406	73.2	75.1	76.2	81.0	78.3	77.4	**76.9**	67.6	74.7	69.7	**70.7**	**73.8**
7	UP3065	407	72.1	69.0	75.0	78.9	72.1	75.9	**73.8**	68.9	70.2	63.6	**67.6**	**70.7**
8	NW7092	408	71.3	70.5	75.0	77.4	76.2	74.7	**74.2**	71.6	76.1	64.3	**70.7**	**72.4**
9	HD3363	409	75.1	75.8	75.3	81.7	82.3	79.6	**78.3**	73.4	74.9	74.0	**74.1**	**76.2**
10	PBW836	410	73.7	76.3	75.2	78.9	80.1	73.3	**76.3**	71.1	73.7	71.3	**72.0**	**74.1**
11	DBW317	411	74.0	70.6	75.0	78.9	71.2	77.8	**74.6**	72.9	71.2	70.5	**71.5**	**73.1**
12	K1908	412	75.6	74.7	77.5	80.1	72.7	79.5	**76.7**	77.0	77.0	73.6	**75.8**	**76.3**
13	HD3364	413	73.9	73.8	76.3	79.3	77.3	74.3	**75.8**	75.0	72.0	68.4	**71.8**	**73.8**
14	PBW834	414	75.0	73.6	76.5	80.9	82.5	78.1	**77.8**	75.0	74.4	71.3	**73.6**	**75.7**
15	HUW842	415	76.5	78.2	78.0	82.4	83.5	81.6	**80.0**	75.7	75.2	73.7	**74.9**	**77.5**
16	UP3059	416	75.6	72.2	76.0	77.5	78.3	72.8	**75.4**	72.5	73.5	67.6	**71.2**	**73.3**
17	Raj4552	417	73.4	71.9	72.0	81.4	79.3	78.6	**76.1**	75.8	73.0	71.8	**73.5**	**74.8**
18	HD3360	418	74.1	62.2	74.8	76.8	75.4	76.6	**73.3**	73.9	75.2	67.0	**72.0**	**72.7**
19	UP3061	419	70.8	70.5	75.7	78.0	79.1	72.2	**74.4**	68.4	69.5	58.4	**65.4**	**69.9**
20	HD3365	420	71.4	72.0	76.0	81.3	74.1	72.3	**74.5**	68.9	71.6	67.9	**69.5**	**72.0**
21	WH1276	421	76.0	74.7	75.5	78.4	82.5	78.5	**77.6**	74.1	71.0	69.8	**71.6**	**74.6**
22	Raj4554	422	73.8	70.0	72.6	79.0	75.4	69.7	**73.4**	66.4	71.4	61.4	**66.4**	**69.9**
23	UP3060	423	74.8	75.0	77.0	82.9	77.5	80.4	**77.9**	74.8	72.5	72.0	**73.1**	**75.5**
24	HI1563 (C)	424	78.2	76.5	77.3	83.8	81.8	79.8	**79.6**	78.4	75.6	73.7	**75.9**	**77.7**
25	PBW833	425	76.1	70.0	74.7	81.8	73.6	77.1	**75.5**	70.9	74.3	71.7	**72.3**	**73.9**
26	DBW316	426	73.4	72.0	75.5	81.1	74.0	77.5	**75.6**	73.2	70.6	67.5	**70.4**	**73.0**
27	HD3059 (C)	427	73.3	72.3	73.2	82.3	69.3	77.8	**74.7**	72.2	69.7	66.8	**69.5**	**72.1**
28	DBW107 (C)	428	75.5	75.8	74.2	81.6	78.2	79.3	**77.4**	74.1	75.5	71.7	**73.8**	**75.6**
29	NW8000	429	72.3	71.3	75.5	78.4	74.7	76.4	**74.8**	71.9	69.5	68.0	**69.8**	**72.3**
30	PBW835	430	76.3	68.8	76.0	79.3	80.7	77.2	**76.4**	74.8	74.9	67.9	**72.5**	**74.4**
31	Raj4553	431	71.8	75.3	73.8	78.2	68.9	69.3	**72.9**	70.4	69.4	65.4	**68.4**	**70.6**
32	JKW278	432	73.7	72.4	74.5	78.3	73.8	72.2	**74.1**	68.9	66.2	61.1	**65.4**	**69.8**
33	WH1277	433	74.6	75.1	73.5	75.4	74.9	74.7	**74.7**	69.6	71.5	65.4	**68.8**	**71.8**
34	DBW318	434	76.8	73.5	76.6	83.0	73.4	80.9	**77.4**	69.1	73.7	73.5	**72.1**	**74.7**
35	DBW319	435	73.1	72.1	77.3	79.1	77.6	77.9	**76.2**	72.6	66.0	68.1	**68.9**	**72.5**
36	JKW270	436	75.2	67.6	74.0	80.3	80.0	75.1	**75.4**	69.3	73.3	65.0	**69.2**	**72.3**
Mean			**74.2**	**72.9**	**75.5**	**79.9**	**77.2**	**76.6**	**76.0**	**72.2**	**72.7**	**68.3**	**71.0**	**73.5**

Table 18: Protein content (%) at 12% moisture basis of *T. aestivum* genotypes in NIVT-3A

S. No.	Entry	Trial Code	NWPZ							NEPZ				Overall Mean
			Pantnagar	Ludhiana	Hisar	Delhi	Durgapura	Karnal	Mean	Kanpur	Samastipur	Varanasi	Mean	
1	K1907	401	10.6	10.0	10.7	11.7	12.4	13.0	**11.4**	13.5	14.1	12.5	**13.3**	**12.4**
2	HD3361	402	9.9	11.8	11.2	11.7	14.6	13.6	**12.1**	14.3	12.8	13.8	**13.6**	**12.9**
3	DBW335	403	10.8	11.0	10.6	11.3	11.7	12.3	**11.3**	12.4	14.0	12.1	**12.8**	**12.1**
4	HD3362	404	9.8	11.4	11.2	11.4	13.9	12.6	**11.7**	12.6	13.9	13.2	**13.2**	**12.5**
5	WH1278	405	10.6	11.5	11.2	11.7	12.2	11.9	**11.5**	13.5	13.1	12.9	**13.2**	**12.4**
6	DBW173 (C)	406	10.1	13.3	11.6	11.9	13.8	14.2	**12.5**	13.6	13.9	13.2	**13.6**	**13.0**
7	UP3065	407	9.5	13.1	10.4	10.9	15.0	12.0	**11.8**	12.1	12.1	13.1	**12.4**	**12.1**
8	NW7092	408	9.9	11.3	9.9	11.7	14.0	12.0	**11.5**	13.6	13.8	13.4	**13.6**	**12.5**
9	HD3363	409	11.2	10.7	11.4	11.7	12.5	13.0	**11.8**	13.1	13.9	11.7	**12.9**	**12.3**
10	PBW836	410	12.2	11.6	11.5	12.7	14.4	14.3	**12.8**	14.7	14.3	13.3	**14.1**	**13.4**
11	DBW317	411	10.8	12.1	11.2	11.4	15.0	13.9	**12.4**	12.7	15.0	13.5	**13.7**	**13.1**
12	K1908	412	11.4	12.2	12.1	12.2	14.7	14.2	**12.8**	13.0	14.3	13.4	**13.6**	**13.2**
13	HD3364	413	10.4	11.6	10.6	12.0	14.1	12.7	**11.9**	12.5	11.8	12.6	**12.3**	**12.1**
14	PBW834	414	10.9	11.2	11.5	11.9	13.5	12.9	**12.0**	12.3	13.4	11.4	**12.4**	**12.2**
15	HUW842	415	10.9	10.6	10.8	11.4	11.9	12.4	**11.3**	12.9	14.0	12.6	**13.2**	**12.3**
16	UP3059	416	10.7	12.2	11.5	12.2	14.0	14.1	**12.5**	13.9	14.0	14.1	**14.0**	**13.2**
17	Raj4552	417	12.0	12.8	10.9	12.1	14.1	14.6	**12.7**	12.6	14.1	12.9	**13.2**	**13.0**
18	HD3360	418	10.2	11.0	9.7	10.5	15.3	12.6	**11.5**	12.1	13.8	13.8	**13.3**	**12.4**
19	UP3061	419	9.6	12.3	10.2	12.3	13.4	12.9	**11.8**	13.2	12.7	14.3	**13.4**	**12.6**
20	HD3365	420	10.0	11.6	11.3	11.7	14.2	12.9	**12.0**	14.1	14.0	13.6	**13.9**	**12.9**
21	WH1276	421	10.3	11.4	10.7	11.3	12.4	13.2	**11.6**	12.8	0.0	12.8	**12.8**	**12.2**
22	Raj4554	422	11.3	11.6	12.6	11.9	14.5	13.2	**12.5**	13.9	14.3	13.6	**13.9**	**13.2**
23	UP3060	423	12.1	11.3	11.8	11.9	12.8	13.5	**12.2**	13.0	12.9	11.8	**12.6**	**12.4**
24	HI1563 (C)	424	11.6	13.5	12.0	11.8	12.4	12.0	**12.2**	12.1	12.7	11.4	**12.0**	**12.1**
25	PBW833	425	10.9	12.9	10.3	12.5	15.0	13.5	**12.5**	15.3	13.6	11.9	**13.6**	**13.1**
26	DBW316	426	12.9	13.6	12.4	12.1	15.3	13.4	**13.3**	13.6	14.4	13.1	**13.7**	**13.5**
27	HD3059 (C)	427	9.6	12.8	9.9	12.5	15.6	13.3	**12.3**	13.5	14.5	13.5	**13.8**	**13.0**
28	DBW107 (C)	428	10.8	12.0	9.9	12.4	14.7	12.9	**12.1**	12.8	12.3	11.8	**12.3**	**12.2**
29	NW8000	429	10.3	12.7	12.0	12.6	15.4	13.7	**12.8**	12.8	12.8	12.6	**12.7**	**12.7**
30	PBW835	430	12.8	12.3	12.1	12.7	15.0	13.8	**13.1**	13.1	13.2	12.6	**13.0**	**13.0**
31	Raj4553	431	9.9	10.2	10.9	11.8	15.7	14.1	**12.1**	12.6	13.2	13.0	**12.9**	**12.5**
32	JKW278	432	10.5	11.8	10.3	11.7	14.6	13.1	**12.0**	12.8	12.8	14.0	**13.2**	**12.6**
33	WH1277	433	10.4	12.0	10.9	11.4	13.6	12.0	**11.7**	13.2	12.5	12.8	**12.8**	**12.3**
34	DBW318	434	10.6	10.4	11.7	11.5	13.9	12.6	**11.8**	13.3	13.8	11.4	**12.8**	**12.3**
35	DBW319	435	9.9	11.6	11.6	11.3	14.1	12.4	**11.8**	12.8	13.5	12.4	**12.9**	**12.3**
36	JKW270	436	11.9	12.1	11.5	11.9	14.3	12.9	**12.4**	13.4	12.8	11.9	**12.7**	**12.6**
Mean			**10.8**	**11.8**	**11.1**	**11.8**	**14.0**	**13.1**	**12.1**	**13.2**	**13.5**	**12.8**	**13.2**	**12.6**

Table 19: Sedimentation value (ml) of *T. aestivum* genotypes in NIVT-3A

S. No.	Entry	Trial Code	NWPZ							NEPZ				Overall Mean
			Pantnagar	Ludhiana	Hisar	Delhi	Durgapura	Karnal	Mean	Kanpur	Samastipur	Varanasi	Mean	
1	K1907	401	46	49	60	48	52	64	**53**	60	50	49	**53**	**53**
2	HD3361	402	52	51	65	51	54	65	**56**	61	52	57	**57**	**57**
3	DBW335	403	33	36	41	35	36	48	**38**	47	36	37	**40**	**39**
4	HD3362	404	61	62	71	62	60	71	**65**	63	55	51	**56**	**60**
5	WH1278	405	53	60	68	53	63	71	**61**	61	55	53	**56**	**59**
6	DBW173 (C)	406	54	51	68	53	56	71	**59**	60	50	54	**55**	**57**
7	UP3065	407	54	50	67	55	60	69	**59**	58	50	58	**55**	**57**
8	NW7092	408	46	45	56	45	53	55	**50**	57	47	58	**54**	**52**
9	HD3363	409	49	53	60	46	55	63	**54**	60	47	50	**52**	**53**
10	PBW836	410	49	52	62	50	54	64	**55**	50	45	45	**47**	**51**
11	DBW317	411	47	52	60	45	51	65	**53**	52	50	52	**51**	**52**
12	K1908	412	38	42	55	36	48	61	**47**	55	48	51	**51**	**49**
13	HD3364	413	47	50	55	47	58	64	**54**	54	47	55	**52**	**53**
14	PBW834	414	47	45	50	44	44	55	**48**	47	42	54	**48**	**48**
15	HUW842	415	55	55	69	53	59	74	**61**	64	55	59	**59**	**60**
16	UP3059	416	55	62	74	50	65	71	**63**	64	55	61	**60**	**61**
17	Raj4552	417	49	53	63	46	55	65	**55**	52	47	55	**51**	**53**
18	HD3360	418	50	52	59	43	53	57	**52**	60	55	64	**60**	**56**
19	UP3061	419	58	60	67	49	60	71	**61**	63	58	54	**58**	**60**
20	HD3365	420	50	55	65	48	67	68	**59**	66	61	65	**64**	**61**
21	WH1276	421	50	45	49	44	53	61	**50**	52	51	57	**53**	**52**
22	Raj4554	422	45	51	62	45	52	60	**52**	57	48	53	**53**	**53**
23	UP3060	423	57	64	71	57	61	71	**64**	65	61	61	**62**	**63**
24	HI1563 (C)	424	49	49	51	42	46	57	**49**	49	48	50	**49**	**49**
25	PBW833	425	46	49	60	45	50	60	**52**	49	46	48	**48**	**50**
26	DBW316	426	44	53	59	42	52	62	**52**	51	51	56	**53**	**52**
27	HD3059 (C)	427	50	60	68	45	55	67	**57**	62	50	56	**56**	**57**
28	DBW107 (C)	428	38	42	43	35	44	45	**41**	44	45	41	**43**	**42**
29	NW8000	429	50	51	71	43	59	53	**55**	55	53	52	**53**	**54**
30	PBW835	430	53	54	68	55	58	72	**60**	62	54	58	**58**	**59**
31	Raj4553	431	53	54	74	48	54	73	**59**	66	65	59	**63**	**61**
32	JKW278	432	51	58	60	51	57	62	**56**	59	62	58	**60**	**58**
33	WH1277	433	50	55	67	51	51	68	**57**	48	41	57	**49**	**53**
34	DBW318	434	41	52	53	35	44	63	**48**	49	55	48	**51**	**49**
35	DBW319	435	40	45	55	40	45	57	**47**	42	48	47	**46**	**46**
36	JKW270	436	53	64	67	52	63	72	**62**	59	55	53	**56**	**59**
Mean			**49**	**52**	**61**	**47**	**54**	**64**	**55**	**56**	**51**	**54**	**54**	**54**

Table 20: Phenol test (Max score 10) of *T. aestivum* genotypes in NIVT-3A

S. No.	Entry	Trial Code	NWPZ					NEPZ				
			Pantnagar	Ludhiana	Delhi	Durgapura	Mean	Kanpur	Samastipur	Varanasi	Mean	Overall Mean
1	K1907	401	6	6	6	7	**6.3**	7	8	7	**7.3**	**6.8**
2	HD3361	402	5	5	6	6	**5.5**	7	6	6	**6.3**	**5.9**
3	DBW335	403	5	6	5	6	**5.5**	6	6	7	**6.3**	**5.9**
4	HD3362	404	7	6	6	7	**6.5**	5	6	6	**5.7**	**6.1**
5	WH1278	405	7	7	6	6	**6.5**	6	5	6	**5.7**	**6.1**
6	DBW173 (C)	406	5	6	6	5	**5.5**	6	6	5	**5.7**	**5.6**
7	UP3065	407	7	7	6	7	**6.8**	8	8	7	**7.7**	**7.2**
8	NW7092	408	8	8	7	7	**7.5**	7	6	7	**6.7**	**7.1**
9	HD3363	409	5	6	6	6	**5.8**	8	7	7	**7.3**	**6.5**
10	PBW836	410	7	7	7	8	**7.3**	7	6	7	**6.7**	**7.0**
11	DBW317	411	8	8	7	8	**7.8**	6	6	7	**6.3**	**7.0**
12	K1908	412	6	7	7	6	**6.5**	8	7	7	**7.3**	**6.9**
13	HD3364	413	7	6	6	6	**6.3**	6	5	6	**5.7**	**6.0**
14	PBW834	414	5	5	4	5	**4.8**	4	4	5	**4.3**	**4.5**
15	HUW842	415	7	7	6	7	**6.8**	8	7	8	**7.7**	**7.2**
16	UP3059	416	6	7	7	6	**6.5**	6	5	6	**5.7**	**6.1**
17	Raj4552	417	7	7	7	6	**6.8**	6	7	7	**6.7**	**6.7**
18	HD3360	418	7	7	6	6	**6.5**	7	6	6	**6.3**	**6.4**
19	UP3061	419	7	8	7	8	**7.5**	7	7	8	**7.3**	**7.4**
20	HD3365	420	6	7	6	7	**6.5**	7	7	8	**7.3**	**6.9**
21	WH1276	421	5	6	5	5	**5.3**	5	4	4	**4.3**	**4.8**
22	Raj4554	422	7	7	6	6	**6.5**	6	5	6	**5.7**	**6.1**
23	UP3060	423	6	7	6	7	**6.5**	7	6	7	**6.7**	**6.6**
24	HI1563 (C)	424	5	6	6	5	**5.5**	4	5	4	**4.3**	**4.9**
25	PBW833	425	7	8	7	7	**7.3**	6	6	6	**6.0**	**6.6**
26	DBW316	426	7	8	8	7	**7.5**	8	7	7	**7.3**	**7.4**
27	HD3059 (C)	427	8	8	7	7	**7.5**	8	8	7	**7.7**	**7.6**
28	DBW107 (C)	428	6	7	6	7	**6.5**	7	8	7	**7.3**	**6.9**
29	NW8000	429	7	8	7	7	**7.3**	7	6	6	**6.3**	**6.8**
30	PBW835	430	7	6	6	7	**6.5**	8	7	7	**7.3**	**6.9**
31	Raj4553	431	7	8	7	7	**7.3**	6	7	6	**6.3**	**6.8**
32	JKW278	432	7	8	7	8	**7.5**	6	7	7	**6.7**	**7.1**
33	WH1277	433	7	7	6	6	**6.5**	8	7	7	**7.3**	**6.9**
34	DBW318	434	5	6	6	6	**5.8**	7	8	7	**7.3**	**6.5**
35	DBW319	435	5	6	6	5	**5.5**	5	5	6	**5.3**	**5.4**
36	JKW270	436	8	8	7	7	**7.5**	7	7	8	**7.3**	**7.4**
Mean			**6.4**	**6.9**	**6.3**	**6.5**	**6.5**	**6.6**	**6.3**	**6.5**	**6.5**	**6.5**

Table 21: Grain appearance score (Max-10) of *T. aestivum* genotypes in NIVT-3B

S. No.	Entry	Trial Code	CZ					PZ				Overall Mean
			Indore	Vijapur	P. kheda	Junagarh	Mean	Dharwad	Niphad	Pune	Mean	
1	LOK77	501	6.8	6.4	5.4	6.7	**6.3**	-	6.8	5.0	**5.9**	**6.1**
2	HD3366	502	6.2	6.5	6.1	6.7	**6.4**	-	6.4	5.3	**5.9**	**6.2**
3	MP3527	503	6.8	6.2	5.0	6.7	**6.2**	-	7.0	5.8	**6.4**	**6.3**
4	NIAW3895	504	7.0	6.5	5.4	6.9	**6.5**	-	7.0	6.1	**6.6**	**6.6**
5	MP1372	505	6.0	6.3	5.0	7.1	**6.1**	-	7.4	4.4	**5.9**	**6.0**
6	CG1035	506	7.4	6.7	5.0	6.7	**6.5**	-	7.0	5.3	**6.2**	**6.4**
7	HD3367	507	6.9	6.2	5.3	6.7	**6.3**	-	6.5	4.3	**5.4**	**5.9**
8	WH1279	508	7.1	6.2	4.2	6.6	**6.0**	-	6.2	5.2	**5.7**	**5.9**
9	HI1651	509	7.3	6.3	5.3	6.8	**6.4**	-	7.6	6.1	**6.9**	**6.7**
10	HI1652	510	6.4	6.2	6.0	6.9	**6.4**	-	6.8	5.0	**5.9**	**6.2**
11	RVW4309	511	6.3	6.1	5.4	6.6	**6.1**	-	6.4	5.4	**5.9**	**6.0**
12	NWS2180	512	6.1	6.4	6.0	6.6	**6.3**	-	5.4	4.3	**4.9**	**5.6**
13	MACS6774	513	6.5	6.4	6.3	6.7	**6.5**	-	6.4	4.5	**5.5**	**6.0**
14	HD2932 (C)	514	4.2	6.1	4.2	6.6	**5.3**	-	6.4	4.1	**5.3**	**5.3**
15	UAS3013	515	4.6	6.3	4.4	6.5	**5.5**	-	6.3	5.6	**6.0**	**5.8**
16	AKAW5080	516	7.0	6.2	5.4	6.8	**6.4**	-	7.5	6.3	**6.9**	**6.7**
17	DBW320	517	4.3	6.2	5.6	6.7	**5.7**	-	7.0	5.8	**6.4**	**6.1**
18	CG1037	518	5.0	6.4	4.0	6.7	**5.5**	-	7.2	4.2	**5.7**	**5.6**
19	GW527	519	5.3	6.5	4.3	7.1	**5.8**	-	7.3	5.6	**6.5**	**6.2**
20	MACS6769	520	6.0	6.4	5.1	6.8	**6.1**	-	7.4	5.3	**6.4**	**6.3**
21	HD2864 (C)	521	6.1	6.1	5.0	6.8	**6.0**	-	6.4	4.2	**5.3**	**5.7**
22	GW525	522	6.8	6.4	4.3	6.7	**6.1**	-	5.6	4.1	**4.9**	**5.5**
23	NIAW3898	523	7.0	6.5	4.1	6.8	**6.1**	-	6.1	4.0	**5.1**	**5.6**
24	MP3529	524	5.3	6.9	4.0	6.9	**5.8**	-	6.2	5.4	**5.8**	**5.8**
25	PBW837	525	6.4	6.4	4.1	6.7	**5.9**	-	6.2	5.3	**5.8**	**5.9**
Mean			**6.2**	**6.4**	**5.0**	**6.8**	**6.1**	**-**	**6.7**	**5.1**	**5.9**	**6.0**

Table 22: Hectolitre weight (kg/hl) of *T. aestivum* genotypes in NIVT-3B

S. No.	Entry	Trial Code	CZ					PZ				Overall Mean
			Indore	Vijapur	P. kheda	Junagarh	Mean	Dharwad	Niphad	Pune	Mean	
1	LOK77	501	77.5	78.0	76.5	77.6	**77.4**	-	78.5	76.9	**77.7**	**77.6**
2	HD3366	502	78.7	80.0	79.4	78.4	**79.1**	-	79.5	76.6	**78.1**	**78.6**
3	MP3527	503	78.5	78.3	77.8	78.8	**78.4**	-	78.8	76.6	**77.7**	**78.0**
4	NIAW3895	504	81.1	80.9	79.8	81.2	**80.8**	-	80.8	76.8	**78.8**	**79.8**
5	MP1372	505	81.3	79.5	78.8	81.3	**80.2**	-	79.2	77.1	**78.2**	**79.2**
6	CG1035	506	79.8	80.3	78.9	78.4	**79.4**	-	77.9	78.1	**78.0**	**78.7**
7	HD3367	507	79.1	77.7	77.8	78.1	**78.2**	-	78.4	75.7	**77.1**	**77.6**
8	WH1279	508	79.9	80.3	76.6	78.9	**78.9**	-	77.8	74.9	**76.4**	**77.6**
9	HI1651	509	79.5	79.2	77.8	79.3	**79.0**	-	80.2	77.7	**79.0**	**79.0**
10	HI1652	510	81.5	80.8	79.5	80.9	**80.7**	-	79.9	78.4	**79.2**	**79.9**
11	RVW4309	511	74.3	76.3	73.6	76.4	**75.2**	-	73.9	73.6	**73.8**	**74.5**
12	NWS2180	512	78.1	80.9	77.6	76.9	**78.4**	-	78.9	76.8	**77.9**	**78.1**
13	MACS6774	513	79.0	80.3	79.1	78.2	**79.2**	-	79.0	75.3	**77.2**	**78.2**
14	HD2932 (C)	514	78.6	79.3	77.2	78.3	**78.4**	-	75.1	76.0	**75.6**	**77.0**
15	UAS3013	515	74.1	75.9	74.4	75.0	**74.9**	-	77.2	75.3	**76.3**	**75.6**
16	AKAW5080	516	77.9	76.7	76.2	78.5	**77.3**	-	77.8	75.4	**76.6**	**77.0**
17	DBW320	517	78.2	78.0	76.9	78.2	**77.8**	-	77.9	76.3	**77.1**	**77.5**
18	CG1037	518	77.3	80.2	77.3	77.8	**78.2**	-	78.2	77.9	**78.1**	**78.1**
19	GW527	519	81.1	81.0	79.3	81.8	**80.8**	-	80.4	77.8	**79.1**	**80.0**
20	MACS6769	520	77.9	80.4	76.8	79.9	**78.8**	-	79.5	76.2	**77.9**	**78.3**
21	HD2864 (C)	521	80.9	80.0	79.8	81.2	**80.5**	-	80.5	77.6	**79.1**	**79.8**
22	GW525	522	78.4	78.1	77.2	77.2	**77.7**	-	77.7	74.8	**76.3**	**77.0**
23	NIAW3898	523	79.3	79.9	78.5	78.9	**79.2**	-	79.3	77.4	**78.4**	**78.8**
24	MP3529	524	80.5	81.5	78.2	80.5	**80.2**	-	80.3	78.5	**79.4**	**79.8**
25	PBW837	525	78.0	78.5	77.2	78.3	**78.0**	-	78.8	76.7	**77.8**	**77.9**
Mean			**78.8**	**79.3**	**77.7**	**78.8**	**78.6**	**-**	**78.6**	**76.6**	**77.6**	**78.1**

Table 23: Protein content (%) at 12% moisture basis of *T. aestivum* genotypes in NIVT-3B

S. No.	Entry	Trial Code	CZ					PZ				Overall Mean
			Indore	Vijapur	P. kheda	Junagarh	Mean	Dharwad	Niphad	Pune	Mean	
1	LOK77	501	10.2	11.3	9.7	13.3	**11.1**	-	8.5	7.4	**8.0**	**9.5**
2	HD3366	502	9.5	10.9	8.5	13.7	**10.7**	-	8.6	8.9	**8.8**	**9.7**
3	MP3527	503	8.5	10.6	10.7	13.1	**10.7**	-	9.9	9.2	**9.6**	**10.1**
4	NIAW3895	504	9.9	11.3	8.5	13.7	**10.9**	-	8.8	7.3	**8.1**	**9.5**
5	MP1372	505	7.4	11.2	9.6	12.7	**10.2**	-	8.9	7.8	**8.4**	**9.3**
6	CG1035	506	-	10.3	9.3	13.2	**10.9**	-	8.8	7.3	**8.1**	**9.5**
7	HD3367	507	9.2	12.1	10.8	14.2	**11.6**	-	9.5	9.1	**9.3**	**10.4**
8	WH1279	508	-	10.7	7.4	12.8	**10.3**	-	7.7	7.7	**7.7**	**9.0**
9	HI1651	509	7.1	11	8	12	**9.5**	-	8.2	-	**8.2**	**8.9**
10	HI1652	510	9.7	11.3	10.4	12.9	**11.1**	-	8.9	7.9	**8.4**	**9.7**
11	RVW4309	511	10.1	10.2	10.5	13.6	**11.1**	-	8.5	7.1	**7.8**	**9.5**
12	NWS2180	512	8.9	10.3	8.5	14.2	**10.5**	-	7.9	7.8	**7.9**	**9.2**
13	MACS6774	513	9.3	11.3	8.8	13.4	**10.7**	-	7.7	7.9	**7.8**	**9.3**
14	HD2932 (C)	514	-	11	8.5	12.8	**10.8**	-	8.4	-	**8.4**	**9.6**
15	UAS3013	515	10.2	10	9.7	13	**10.7**	-	8.2	-	**8.2**	**9.5**
16	AKAW5080	516	7.7	11.7	8.2	14	**10.4**	-	8.4	7.5	**8.0**	**9.2**
17	DBW320	517	-	10.5	8.3	13.3	**10.7**	-	7.5	7.1	**7.3**	**9.0**
18	CG1037	518	9.5	10.8	9.1	13.6	**10.8**	-	8.3	7.4	**7.9**	**9.3**
19	GW527	519	-	11.4	8.8	12.9	**11.0**	-	7.3	7	**7.2**	**9.1**
20	MACS6769	520	9.6	10.6	9.7	13.2	**10.8**	-	7.9	-	**7.9**	**9.3**
21	HD2864 (C)	521	-	10.6	-	12.4	**11.5**	-	7.8	7.7	**7.8**	**9.6**
22	GW525	522	9.5	10.1	9.1	12.2	**10.2**	-	8	-	**8.0**	**9.1**
23	NIAW3898	523	9.8	10.6	9.2	14.2	**11.0**	-	8	7.4	**7.7**	**9.3**
24	MP3529	524	9.5	12.1	10.3	13.8	**11.4**	-	10.2	8.5	**9.4**	**10.4**
25	PBW837	525	8.8	10.1	10.1	13.8	**10.7**	-	10.9	-	**10.9**	**10.8**
Mean			**9.2**	**10.9**	**9.2**	**13.3**	**10.8**		**8.5**	**7.8**	**8.2**	**9.5**

Table 24: Sedimentation value (ml) of *T. aestivum* genotypes in NIVT-3B

S. No.	Entry	Trial Code	CZ					PZ				Overall Mean
			Indore	Vijapur	P. kheda	Junagarh	Mean	Dharwad	Niphad	Pune	Mean	
1	LOK77	501	45	40	48	50	**46**	-	52	49	**51**	**49**
2	HD3366	502	52	40	51	52	**49**	-	55	57	**56**	**53**
3	MP3527	503	52	36	43	48	**45**	-	55	58	**57**	**51**
4	NIAW3895	504	59	39	46	50	**49**	-	54	64	**59**	**54**
5	MP1372	505	50	37	43	45	**44**	-	50	60	**55**	**50**
6	CG1035	506	63	36	65	49	**53**	-	69	66	**68**	**61**
7	HD3367	507	60	46	63	54	**56**	-	65	68	**67**	**62**
8	WH1279	508	54	35	63	45	**49**	-	63	67	**65**	**57**
9	HI1651	509	51	38	45	43	**44**	-	40	50	**45**	**45**
10	HI1652	510	43	42	42	49	**44**	-	42	49	**46**	**45**
11	RVW4309	511	57	37	73	53	**55**	-	65	67	**66**	**61**
12	NWS2180	512	62	39	66	53	**55**	-	64	63	**64**	**60**
13	MACS6774	513	66	40	70	50	**57**	-	70	72	**71**	**64**
14	HD2932 (C)	514	49	37	63	46	**49**	-	60	58	**59**	**54**
15	UAS3013	515	54	36	67	46	**51**	-	74	65	**70**	**61**
16	AKAW5080	516	54	43	62	53	**53**	-	67	54	**61**	**57**
17	DBW320	517	60	36	62	49	**52**	-	64	57	**61**	**57**
18	CG1037	518	69	39	70	51	**57**	-	75	72	**74**	**66**
19	GW527	519	50	39	54	43	**47**	-	60	58	**59**	**53**
20	MACS6769	520	45	38	57	49	**47**	-	55	56	**56**	**52**
21	HD2864 (C)	521	46	37	54	43	**45**	-	60	55	**58**	**52**
22	GW525	522	52	34	60	41	**47**	-	62	63	**63**	**55**
23	NIAW3898	523	57	40	74	55	**57**	-	67	65	**66**	**62**
24	MP3529	524	57	45	70	53	**56**	-	77	70	**74**	**65**
25	PBW837	525	60	34	73	51	**55**	-	78	68	**73**	**64**
Mean			**55**	**39**	**59**	**49**	**50**	**-**	**62**	**61**	**62**	**56**

Table 25: Grain appearance score of *T. durum* genotypes in NIVT-4

S. No	Entry	Trial Code	CZ					PZ				Overall Mean
			Indore	Vijapur	P. kheda	Junagadh	Mean	Dharwad	Niphad	Pune	Mean	
1	PWU5	601	6.8	6.6	5.5	6.7	**6.4**	6.2	6.9	5	**6.0**	**6.2**
2	HI8713 (C)	602	6.5	6.8	6.1	6.7	**6.5**	6.1	6.4	5.2	**5.9**	**6.2**
3	HI8826	603	6.9	6.7	5.4	6.9	**6.5**	6.5	7.3	5.4	**6.4**	**6.4**
4	MACS4106	604	6.3	6.3	5.5	7	**6.3**	5.4	7.4	6.2	**6.3**	**6.3**
5	UAS473	605	7	6.5	5.4	6.8	**6.4**	6.3	7	4.3	**5.9**	**6.1**
6	HI8828	606	7.5	6.8	5	6.9	**6.6**	6	7	5.3	**6.1**	**6.3**
7	MPO1375	607	7.1	6.5	5.1	6.9	**6.4**	5.3	6.6	4.8	**5.6**	**6.0**
8	MACS4100	608	7.2	6.6	4.9	6.7	**6.4**	5.4	6.3	5.3	**5.7**	**6.0**
9	WHD965	609	7.6	6.9	5.6	6.9	**6.8**	7.5	7.5	6.2	**7.1**	**6.9**
10	NIDW1348	610	6.6	6.5	6.3	7.1	**6.6**	5.3	6.4	5.1	**5.6**	**6.1**
11	DDW53	611	6.9	6.5	5.5	6.7	**6.4**	5.1	6.3	5.4	**5.6**	**6.0**
12	HI8829	612	5.9	6.7	6	6.8	**6.4**	6.2	4.3	4.1	**4.9**	**5.6**
13	PDW360	613	6.3	6.6	5.5	6.9	**6.3**	5.3	6.5	4.3	**5.4**	**5.8**
14	HI8825	614	4.4	6.7	4.3	6.9	**5.6**	4.3	6.6	4	**5.0**	**5.3**
15	HI8827	615	5.4	6.6	4.5	6.8	**5.8**	6.5	6.6	5.3	**6.1**	**6.0**
16	HI8737 (C)	616	7.1	6.3	5	6.7	**6.3**	6	7.8	6.2	**6.7**	**6.5**
17	DDW54	617	4.6	6.5	5.3	6.7	**5.8**	5.6	7.1	5.7	**6.1**	**6.0**
18	MACS3949 (C)	618	6	7	5.2	7	**6.3**	5	7.2	4.1	**5.4**	**5.9**
19	UAS474	619	5.1	6.5	4.6	6.7	**5.7**	6.2	7.5	5.6	**6.4**	**6.1**
20	PBND4812	620	6.8	6.8	5.2	7	**6.5**	6	6.3	5.8	**6.0**	**6.2**
21	GW1355	621	7.1	6.5	4.5	6.8	**6.2**	6.3	5.4	6.2	**6.0**	**6.1**
22	GW1354	622	6.5	6.5	4.6	6.8	**6.1**	4.9	6.2	4.3	**5.1**	**5.6**
23	NIDW1345	623	6.9	6.3	4.2	6.7	**6.0**	5.9	6.3	4.1	**5.4**	**5.7**
24	MPO1374	624	4.3	6.8	4	6.9	**5.5**	4.6	6.4	4.2	**5.1**	**5.3**
25	MPO1373	625	6.4	6.8	4.2	6.8	**6.1**	6.5	6	5.4	**6.0**	**6.0**
Mean			**6.4**	**6.6**	**5.1**	**6.8**	**6.2**	**5.8**	**6.6**	**5.1**	**5.8**	**6.0**

Table 26: Hectolitre weight (kg/hl) of *T. durum* genotypes in NIVT-4

S. No	Entry	Trial Code	CZ					PZ				Overall Mean
			Indore	Vijapur	P. kheda	Junagadh	Mean	Dharwad	Niphad	Pune	Mean	
1	PWU5	601	78.6	79.3	77.4	81.0	**79.1**	74	76.2	75.1	**75.1**	**77.1**
2	HI8713 (C)	602	78.3	79.6	78.9	81.7	**79.6**	79.1	81.1	80	**80.1**	**79.8**
3	HI8826	603	76.8	81.6	77.5	81.4	**79.3**	79.1	80.8	80.3	**80.1**	**79.7**
4	MACS4106	604	78.9	81	76.8	81.5	**79.6**	78.2	79.3	77.8	**78.4**	**79.0**
5	UAS473	605	78.2	81	78.2	82.6	**80.0**	77.9	80.8	79.9	**79.5**	**79.8**
6	HI8828	606	80.1	81.7	78.4	82.3	**80.6**	79.9	81.3	78.6	**79.9**	**80.3**
7	MPO1375	607	77.4	81.1	79.5	81.4	**79.9**	78.6	79.7	78.1	**78.8**	**79.3**
8	MACS4100	608	73.4	79	78.8	80.4	**77.9**	79.1	79.7	77	**78.6**	**78.3**
9	WHD965	609	78.6	81	79.6	82.4	**80.4**	77.8	80.7	78.1	**78.9**	**79.6**
10	NIDW1348	610	80.5	81.3	79	82.4	**80.8**	78.6	79.3	80.2	**79.4**	**80.1**
11	DDW53	611	79.3	81.2	78.2	81.6	**80.1**	79	79.8	79.9	**79.6**	**79.8**
12	HI8829	612	75.1	79.9	78.3	80.5	**78.5**	77.9	81.4	80.3	**79.9**	**79.2**
13	PDW360	613	69.8	77.3	78.4	78.8	**76.1**	76.9	80.1	78.9	**78.6**	**77.4**
14	HI8825	614	75.8	80.8	78.4	81	**79.0**	77.4	78.9	77.9	**78.1**	**78.5**
15	HI8827	615	75.8	81.8	72.3	81.7	**77.9**	78.5	80.7	80.1	**79.8**	**78.8**
16	HI8737 (C)	616	80	81.9	81.1	82.7	**81.4**	79.2	79.4	80.4	**79.7**	**80.5**
17	DDW54	617	79.6	80	79.6	82	**80.3**	80.2	81.1	80	**80.4**	**80.4**
18	MACS3949 (C)	618	76.5	81.9	79.9	82.5	**80.2**	80	80.9	80.1	**80.3**	**80.3**
19	UAS474	619	76.3	79.8	76.7	81.2	**78.5**	79.6	79.1	77.2	**78.6**	**78.6**
20	PBND4812	620	77.5	80.9	79.1	80.8	**79.6**	77.9	80.5	79.3	**79.2**	**79.4**
21	GW1355	621	72.9	81.1	78.9	81.3	**78.6**	77.9	80	78.1	**78.7**	**78.6**
22	GW1354	622	77.4	80.3	79.6	81.4	**79.7**	75.7	79.7	79.1	**78.2**	**78.9**
23	NIDW1345	623	75.4	82.7	79.9	81.9	**80.0**	79.9	80	80.1	**80.0**	**80.0**
24	MPO1374	624	72.7	80.3	78.2	80.7	**78.0**	78.1	79.3	77.2	**78.2**	**78.1**
25	MPO1373	625	79.4	80.6	78.1	80.5	**79.7**	78.8	79.6	79.4	**79.3**	**79.5**
Mean			**76.9**	**80.7**	**78.4**	**81.4**	**79.4**	**78.4**	**79.9**	**78.9**	**79.1**	**79.2**

Table 27: Protein content (%) at 12% moisture basis of *T. durum* genotypes in NIVT-4

S. No	Entry	Trial Code	CZ					PZ				Overall Mean
			Indore	Vijapur	P. kheda	Junagadh	Mean	Dharwad	Niphad	Pune	Mean	
1	PWU5	601	-	10.6	7.7	12.1	**10.1**	7.2	8.7	8.1	**8.0**	**9.1**
2	HI8713 (C)	602	8	12	11.6	11.9	**10.9**	10.4	8.5	6.3	**8.4**	**9.6**
3	HI8826	603	-	10.3	11	12.3	**11.2**	9.9	9.3	8.8	**9.3**	**10.3**
4	MACS4106	604	10.1	11.4	10.7	12.4	**11.2**	10.6	9.5	8.7	**9.6**	**10.4**
5	UAS473	605	9.7	10.6	11.7	12	**11.0**	7.5	9.6	9	**8.7**	**9.9**
6	HI8828	606	7.7	10.7	10.8	11.7	**10.2**	8.6	9.9	9.3	**9.3**	**9.7**
7	MPO1375	607	10.5	9.9	10.8	11.7	**10.7**	8.3	9.9	8.9	**9.0**	**9.9**
8	MACS4100	608	7.3	10.8	10.1	11	**9.8**	8.8	-	7.1	**8.0**	**8.9**
9	WHD965	609	9.8	12	10.6	12.2	**11.2**	8.9	8.9	10	**9.3**	**10.2**
10	NIDW1348	610	7.7	11.5	11	12.8	**10.8**	8.9	8.6	7.6	**8.4**	**9.6**
11	DDW53	611	9.3	10.2	10.4	11.7	**10.4**	8.8	8.8	10.2	**9.3**	**9.8**
12	HI8829	612	8	11.9	11.6	13.1	**11.2**	9.6	10.6	9.5	**9.9**	**10.5**
13	PDW360	613	8.8	11.4	9.3	12.5	**10.5**	10	7.9	8.7	**8.9**	**9.7**
14	HI8825	614	-	11.6	11.3	12.2	**11.7**	8.8	9.6	8.6	**9.0**	**10.4**
15	HI8827	615	10	10.9	11.3	12.1	**11.1**	10.5	9.8	10.9	**10.4**	**10.7**
16	HI8737 (C)	616	10.6	9.9	9.7	11.5	**10.4**	10.4	7.7	8.6	**8.9**	**9.7**
17	DDW54	617	9.7	10.8	10.1	12	**10.7**	8.4	9.3	7.2	**8.3**	**9.5**
18	MACS3949 (C)	618	10.9	11	11.1	13	**11.5**	9.9	9.9	9.6	**9.8**	**10.7**
19	UAS474	619	8.9	11.2	10.7	11.6	**10.6**	8.6	6.7	6.8	**7.4**	**9.0**
20	PBND4812	620	8.2	11.1	10.6	13.2	**10.8**	9	8.9	7.1	**8.3**	**9.6**
21	GW1355	621	9.7	11.6	10.9	12.6	**11.2**	7.3	8.8	10.5	**8.9**	**10.0**
22	GW1354	622	8.8	11.7	11.8	12	**11.1**	11.1	9.5	10.8	**10.5**	**10.8**
23	NIDW1345	623	9.1	10.6	10	12.3	**10.5**	8.6	7.9	-	**8.3**	**9.4**
24	MPO1374	624	-	11.4	10.1	12.3	**11.3**	9.7	7.9	9.6	**9.1**	**10.2**
25	MPO1373	625	9.5	10.7	9.9	11.9	**10.5**	7.9	7.7	7.1	**7.6**	**9.0**
Mean			**9.2**	**11.0**	**10.6**	**12.2**	**10.8**	**9.1**	**8.9**	**8.7**	**8.9**	**9.9**

Table 28: Sedimentation value (ml) of *T. durum* genotypes in NIVT-4

S. No	Entry	Trial Code	CZ					PZ				Overall Mean
			Indore	Vijapur	P. kheda	Junagadh	Mean	Dharwad	Niphad	Pune	Mean	
1	PWU5	601	55	37	56	43	**48**	55	55	54	**55**	**51**
2	HI8713 (C)	602	31	44	38	43	**39**	39	33	30	**34**	**36**
3	HI8826	603	33	40	38	43	**38**	33	33	30	**32**	**35**
4	MACS4106	604	41	41	43	45	**42**	40	32	35	**36**	**39**
5	UAS473	605	39	41	39	43	**40**	47	39	36	**41**	**41**
6	HI8828	606	30	41	35	43	**37**	37	35	35	**36**	**36**
7	MPO1375	607	20	37	20	41	**29**	20	18	18	**19**	**24**
8	MACS4100	608	40	41	43	43	**42**	37	39	36	**37**	**40**
9	WHD965	609	44	44	44	45	**44**	43	42	36	**40**	**42**
10	NIDW1348	610	35	43	38	47	**41**	30	30	26	**29**	**35**
11	DDW53	611	42	41	37	44	**41**	43	42	33	**39**	**40**
12	HI8829	612	32	45	30	48	**39**	36	30	26	**31**	**35**
13	PDW360	613	37	47	36	48	**42**	40	34	27	**34**	**38**
14	HI8825	614	35	43	33	44	**39**	34	34	29	**32**	**35**
15	HI8827	615	35	41	37	45	**39**	37	38	32	**36**	**38**
16	HI8737 (C)	616	36	38	36	41	**38**	43	36	36	**38**	**38**
17	DDW54	617	36	41	42	43	**40**	42	38	36	**39**	**40**
18	MACS3949 (C)	618	49	42	43	47	**45**	49	44	43	**45**	**45**
19	UAS474	619	41	41	45	43	**42**	40	41	35	**39**	**41**
20	PBND4812	620	43	44	39	49	**44**	43	40	35	**39**	**41**
21	GW1355	621	44	43	42	46	**44**	37	31	35	**34**	**39**
22	GW1354	622	47	43	47	44	**45**	47	37	38	**41**	**43**
23	NIDW1345	623	37	38	41	43	**40**	41	35	39	**38**	**39**
24	MPO1374	624	37	41	45	44	**42**	46	39	44	**43**	**42**
25	MPO1373	625	35	39	45	42	**40**	48	42	38	**43**	**41**
Mean			**38**	**41**	**40**	**44**	**41**	**40**	**37**	**34**	**37**	**39**

Table 29: Yellow berries incidence of *T. durum* genotypes in NIVT-4

S. No	Entry	Trial Code	CZ					PZ				Overall Mean
			Indore	Vijapur	P. kheda	Junagadh	Mean	Dharwad	Niphad	Pune	Mean	
1	PWU5	601	8.1	1.1	1.3	0	**2.6**	4	0	7	**3.7**	**3.1**
2	HI8713 (C)	602	4.1	24	1.5	0	**7.4**	5	0	3	**2.7**	**5.0**
3	HI8826	603	3.1	28.4	13	0	**11.1**	0	2.3	10	**4.1**	**7.6**
4	MACS4106	604	4.4	13	14.3	0	**7.9**	0	1.4	12	**4.5**	**6.2**
5	UAS473	605	0	3	12	1.5	**4.1**	2	1.5	4.3	**2.6**	**3.4**
6	HI8828	606	0	4	11.3	0	**3.8**	1.1	0	10	**3.7**	**3.8**
7	MPO1375	607	1.4	1.1	0	0	**0.6**	2.1	0	1	**1.0**	**0.8**
8	MACS4100	608	1.6	3.5	13	0	**4.5**	9	0	0	**3.0**	**3.8**
9	WHD965	609	1	0	3.3	0	**1.1**	0	0	2.3	**0.8**	**0.9**
10	NIDW1348	610	1.9	0	8.5	0	**2.6**	0	1.3	0	**0.4**	**1.5**
11	DDW53	611	1.1	0	0	0	**0.3**	0	0	12.1	**4.0**	**2.2**
12	HI8829	612	1.3	1	0	0	**0.6**	0	0	3.3	**1.1**	**0.8**
13	PDW360	613	1.7	1.2	3.2	6.3	**3.1**	0	2.3	5	**2.4**	**2.8**
14	HI8825	614	4.2	1	4.3	1.3	**2.7**	0	0	7.3	**2.4**	**2.6**
15	HI8827	615	8.1	0	4.5	0	**3.2**	13.3	0	0	**4.4**	**3.8**
16	HI8737 (C)	616	0	0	1.3	0	**0.3**	13.6	0	2.1	**5.2**	**2.8**
17	DDW54	617	32	10.3	9.3	0	**12.9**	2	0	11.3	**4.4**	**8.7**
18	MACS3949 (C)	618	4	0	14.2	0	**4.6**	0	0	3	**1.0**	**2.8**
19	UAS474	619	25	1.6	3	0	**7.4**	4	0	20	**8.0**	**7.7**
20	PBND4812	620	1.7	1.7	9	0	**3.1**	2	0	0	**0.7**	**1.9**
21	GW1355	621	0	0	1.3	0	**0.3**	5.1	0	0	**1.7**	**1.0**
22	GW1354	622	0	3.5	1.5	0	**1.3**	0	0	10	**3.3**	**2.3**
23	NIDW1345	623	0	1.1	8.3	0	**2.4**	1.1	0	0	**0.4**	**1.4**
24	MPO1374	624	6.1	6.8	8.2	3.9	**6.3**	0	2.2	4	**2.1**	**4.2**
25	MPO1373	625	6.3	5.1	4.3	0	**3.9**	1	0	0	**0.3**	**2.1**
Mean			**4.7**	**4.5**	**6.0**	**0.5**	**3.9**	**2.6**	**0.4**	**5.1**	**2.7**	**3.3**

Table 30: Yellow pigment (ppm) of *T. durum* genotypes in NIVT-4

S. No	Entry	Trial Code	CZ					PZ				Overall Mean
			Indore	Vijapur	P. kheda	Junagadh	Mean	Dharwad	Niphad	Pune	Mean	
1	PWU5	601	5.7	-	4.5	-	**5.1**	2.7	2.6	3.2	**2.8**	**4.0**
2	HI8713 (C)	602	6.1	-	4.9	-	**5.5**	5.5	4.1	4.5	**4.7**	**5.1**
3	HI8826	603	6.3	-	5.1	-	**5.7**	4.6	5.9	6.4	**5.6**	**5.7**
4	MACS4106	604	3.8	-	4.9	-	**4.4**	3.5	2.9	5.6	**4.0**	**4.2**
5	UAS473	605	6.3	-	5.8	-	**6.1**	4.7	5.1	4.7	**4.8**	**5.5**
6	HI8828	606	4.4	-	7.2	-	**5.8**	4.4	3.9	5.3	**4.5**	**5.2**
7	MPO1375	607	4.9	-	3.1	-	**4.0**	3.1	3.1	3.2	**3.1**	**3.6**
8	MACS4100	608	4.3	-	5.1	-	**4.7**	5.2	6.6	5.3	**5.7**	**5.2**
9	WHD965	609	4.8	-	6.7	-	**5.8**	3.9	2.7	6.3	**4.3**	**5.1**
10	NIDW1348	610	5.8	-	4.1	-	**5.0**	3.1	3.8	3	**3.3**	**4.2**
11	DDW53	611	4.9	-	4.6	-	**4.8**	3.4	3.4	6.5	**4.4**	**4.6**
12	HI8829	612	5.8	-	3.5	-	**4.7**	6.3	6.9	6.1	**6.4**	**5.6**
13	PDW360	613	6	-	4.9	-	**5.5**	3.1	7.6	4.8	**5.2**	**5.3**
14	HI8825	614	5.7	-	3.6	-	**4.7**	2.9	7.2	6.3	**5.5**	**5.1**
15	HI8827	615	5.1	-	5.8	-	**5.5**	3.9	3.7	6.7	**4.8**	**5.1**
16	HI8737 (C)	616	5.7	-	4.2	-	**5.0**	2.4	6.4	5	**4.6**	**4.8**
17	DDW54	617	4.8	-	5.3	-	**5.1**	4.9	6.6	5.3	**5.6**	**5.4**
18	MACS3949 (C)	618	5.5	-	7.5	-	**6.5**	5.2	6.4	4.7	**5.4**	**6.0**
19	UAS474	619	2.4	-	2.6	-	**2.5**	5.1	5.7	4.9	**5.2**	**3.9**
20	PBND4812	620	5.8	-	5.6	-	**5.7**	4.6	8	6.3	**6.3**	**6.0**
21	GW1355	621	6	-	4.1	-	**5.1**	6	5.5	4.4	**5.3**	**5.2**
22	GW1354	622	4.7	-	5.5	-	**5.1**	4.6	2.3	5.8	**4.2**	**4.7**
23	NIDW1345	623	4.1	-	3.7	-	**3.9**	7	6.8	5.8	**6.5**	**5.2**
24	MPO1374	624	5.1	-	5.9	-	**5.5**	4.6	5.4	4.8	**4.9**	**5.2**
25	MPO1373	625	4.5	-	5.1	-	**4.8**	3.5	4.1	6.9	**4.8**	**4.8**
Mean			**5.1**	**-**	**4.9**	**-**	**5.1**	**4.3**	**5.1**	**5.3**	**4.9**	**5.0**

Table 31: Grain appearance score (Max-10) of *T. aestivum* genotypes in NIVT-5A

S. No	Entry	Trial Code	NWPZ						NEPZ				Overall Mean
			Pantnagar	Ludhiana	Hisar	Delhi	Karnal	Mean	Kanpur	Samastipur	Varanasi	Mean	
1	WH1280	701	5.5	4.0	5.8	5.0	6.0	**5.3**	5.5	5.0	5.0	**5.2**	**5.2**
2	HD3368	702	5.5	5.0	6.0	6.0	7.0	**5.9**	5.5	5.5	6.5	**5.8**	**5.9**
3	HD3369	703	6.0	5.5	5.8	5.5	6.2	**5.8**	6.5	5.0	6.0	**5.8**	**5.8**
4	DBW321	704	6.5	4.5	-	5.0	6.4	**5.6**	5.5	5.0	6.0	**5.5**	**5.6**
5	BRW3863	705	6.0	5.0	6.0	5.0	6.4	**5.7**	6.0	5.0	5.5	**5.5**	**5.6**
6	WH1281	706	6.0	5.0	4.8	5.0	6.0	**5.4**	5.5	5.0	5.5	**5.3**	**5.3**
7	DBW324	707	5.0	5.0	4.8	5.0	5.8	**5.1**	5.0	5.5	5.0	**5.2**	**5.1**
8	HD3171 (C)	708	5.5	5.0	5.0	5.5	6.4	**5.5**	6.5	5.0	5.0	**5.5**	**5.5**
9	UP3063	709	5.0	5.5	4.8	5.0	5.8	**5.2**	5.5	4.5	5.0	**5.0**	**5.1**
10	JAUW683	710	6.0	5.0	5.2	5.0	6.4	**5.5**	6.0	4.5	6.0	**5.5**	**5.5**
11	K1910	711	5.5	6.0	5.6	5.0	7.0	**5.8**	5.5	5.5	6.0	**5.7**	**5.7**
12	PBW644 (C)	712	6.5	5.5	5.6	5.0	6.8	**5.9**	5.5	5.5	5.5	**5.5**	**5.7**
13	HI1654	713	6.5	6.0	5.2	4.5	6.0	**5.6**	6.0	5.5	6.0	**5.8**	**5.7**
14	K1317 (C)	714	6.5	5.5	5.8	4.5	6.8	**5.8**	5.5	5.5	6.5	**5.8**	**5.8**
15	NW7096	715	6.5	5.0	5.4	5.5	6.0	**5.7**	6.5	5.0	6.0	**5.8**	**5.8**
16	DBW323	716	6.0	5.0	5.6	5.5	6.6	**5.7**	6.0	5.0	5.5	**5.5**	**5.6**
17	HI1653	717	6.0	6.0	6.0	6.0	6.4	**6.1**	6.5	5.0	5.5	**5.7**	**5.9**
18	PBW848	718	6.5	5.5	6.2	5.0	6.6	**6.0**	6.0	4.5	5.5	**5.3**	**5.6**
19	PBW839	719	6.5	5.5	5.6	5.0	6.6	**5.8**	5.5	5.5	5.5	**5.5**	**5.7**
20	HUW843	720	5.5	5.0	5.4	5.0	6.4	**5.5**	5.0	5.0	4.5	**4.8**	**5.1**
21	PBW838	721	6.0	5.0	5.0	5.0	6.4	**5.5**	5.5	4.5	5.5	**5.2**	**5.3**
22	DBW322	722	6.5	5.0	5.8	5.5	6.8	**5.9**	5.5	5.0	5.5	**5.3**	**5.6**
23	WH1142 (C)	723	5.5	5.0	5.2	5.0	6.0	**5.3**	5.0	5.0	4.5	**4.8**	**5.1**
24	BCW5	724	7.0	6.0	5.0	6.0	6.2	**6.0**	6.0	5.5	6.5	**6.0**	**6.0**
25	UP3062	725	5.5	5.0	5.2	4.5	6.2	**5.3**	6.0	5.5	5.5	**5.7**	**5.5**
Mean			**6.0**	**5.2**	**5.5**	**5.2**	**6.4**	**5.6**	**5.7**	**5.1**	**5.6**	**5.5**	**5.6**

Table 32: Hectolitre weight (kg/hl) of *T. aestivum* genotypes in NIVT-5A

S. No	Entry	Trial Code	NWPZ						NEPZ				Overall Mean
			Pantnagar	Ludhiana	Hisar	Delhi	Karnal	Mean	Kanpur	Samastipur	Varanasi	Mean	
1	WH1280	701	76.2	66.1	78.3	72.0	69.6	**72.5**	76.1	71.3	69.7	**72.4**	**72.4**
2	HD3368	702	77.2	76.7	81.6	74.1	80.1	**77.9**	78.0	72.2	76.3	**75.5**	**76.7**
3	HD3369	703	79.2	80.4	78.6	78.0	81.5	**79.5**	77.4	72.0	76.0	**75.1**	**77.3**
4	DBW321	704	78.7	72.4	-	76.5	80.5	**77.1**	77.6	71.1	72.4	**73.7**	**75.4**
5	BRW3863	705	80.5	77.4	83.2	77.3	82.1	**80.1**	82.4	72.8	75.2	**76.8**	**78.4**
6	WH1281	706	77.5	78.1	79.5	76.0	78.7	**77.9**	80.4	74.0	72.6	**75.6**	**76.8**
7	DBW324	707	74.8	78.8	79.2	78.9	78.0	**77.9**	78.5	73.0	71.4	**74.3**	**76.1**
8	HD3171 (C)	708	73.9	72.7	77.4	78.1	80.0	**76.4**	77.5	72.6	73.0	**74.3**	**75.4**
9	UP3063	709	77.5	79.2	79.5	78.2	80.0	**78.9**	79.9	71.8	72.5	**74.7**	**76.8**
10	JAUW683	710	76.3	74.3	74.6	72.6	78.3	**75.2**	77.4	71.5	70.4	**73.1**	**74.2**
11	K1910	711	80.2	78.8	80.0	78.7	81.3	**79.8**	80.4	74.7	72.5	**75.9**	**77.8**
12	PBW644 (C)	712	78.6	71.2	77.6	78.1	79.7	**77.0**	79.5	72.0	74.0	**75.2**	**76.1**
13	HI1654	713	77.1	78.2	78.0	74.1	81.0	**77.7**	77.6	70.4	73.5	**73.8**	**75.8**
14	K1317 (C)	714	77.7	80.3	81.0	69.0	80.7	**77.8**	80.4	74.1	76.5	**77.0**	**77.4**
15	NW7096	715	78.8	66.7	77.4	76.5	78.5	**75.6**	78.8	71.4	72.9	**74.4**	**75.0**
16	DBW323	716	79.5	81.9	78.2	76.5	79.3	**79.1**	80.1	72.4	74.3	**75.6**	**77.3**
17	HI1653	717	76.2	75.7	75.7	74.7	78.4	**76.1**	77.8	71.4	74.0	**74.4**	**75.3**
18	PBW848	718	78.8	79.2	80.3	76.1	80.5	**79.0**	76.3	71.8	76.8	**75.0**	**77.0**
19	PBW839	719	79.2	74.6	79.0	75.0	80.5	**77.7**	80.0	72.8	76.8	**76.5**	**77.1**
20	HUW843	720	71.6	73.6	77.2	77.1	78.5	**75.6**	75.7	69.2	61.0	**68.6**	**72.1**
21	PBW838	721	78.8	78.7	78.0	76.9	79.6	**78.4**	80.3	68.4	73.1	**73.9**	**76.1**
22	DBW322	722	74.8	77.5	79.0	75.7	80.0	**77.4**	76.5	72.8	72.9	**74.0**	**75.7**
23	WH1142 (C)	723	78.4	72.5	80.5	77.2	76.6	**77.0**	75.4	72.8	70.2	**72.8**	**74.9**
24	BCW5	724	75.9	75.5	84.5	71.2	78.0	**77.0**	80.0	71.8	73.2	**75.0**	**76.0**
25	UP3062	725	76.7	79.1	78.5	77.3	79.0	**78.1**	77.5	71.9	68.8	**72.7**	**75.4**
Mean			**77.4**	**76.0**	**79.0**	**75.8**	**79.2**	**77.5**	**78.4**	**72.0**	**72.8**	**74.4**	**75.9**

Table 33: Protein content (%) at 12% moisture basis of *T. aestivum* genotypes in NIVT-5A

S. No	Entry	Trial Code	NWPZ						NEPZ				Overall Mean
			Pantnagar	Ludhiana	Hisar	Delhi	Karnal	Mean	Kanpur	Samastipur	Varanasi	Mean	
1	WH1280	701	11.4	12.7	8.8	13.4	11.0	**11.4**	10.3	12.8	12.3	**11.8**	**11.6**
2	HD3368	702	9.9	11.8	9.4	11.6	11.2	**10.8**	10.1	12.9	10.6	**11.2**	**11.0**
3	HD3369	703	10.8	11.8	9.6	12.5	10.8	**11.1**	9.9	12.4	9.6	**10.6**	**10.9**
4	DBW321	704	9.6	11.7	-	12.5	10.1	**11.0**	11.5	10.5	10.3	**10.8**	**10.9**
5	BRW3863	705	11.3	13.7	10.7	15.0	12.1	**12.5**	12.9	13.5	12.1	**12.8**	**12.7**
6	WH1281	706	9.9	12.7	10.0	12.6	11.5	**11.3**	10.1	12.1	9.6	**10.6**	**11.0**
7	DBW324	707	12.1	11.5	9.5	13.0	11.0	**11.4**	10.4	12.1	10.8	**11.1**	**11.3**
8	HD3171 (C)	708	11.9	12.0	10.3	12.3	11.6	**11.6**	10.2	11.6	11.0	**10.9**	**11.3**
9	UP3063	709	12.8	13.5	10.7	14.4	11.4	**12.6**	12.1	14.1	11.8	**12.6**	**12.6**
10	JAUW683	710	12.1	12.3	9.4	14.0	12.1	**12.0**	12.2	13.9	10.9	**12.3**	**12.2**
11	K1910	711	10.9	12.4	10.3	14.3	11.9	**11.9**	11.7	13.8	10.6	**12.0**	**12.0**
12	PBW644 (C)	712	10.6	11.4	10.4	13.0	10.6	**11.2**	10.3	13.0	9.7	**11.0**	**11.1**
13	HI1654	713	10.6	11.5	9.6	12.8	11.2	**11.2**	9.9	11.4	9.8	**10.4**	**10.8**
14	K1317 (C)	714	10.8	13.0	10.1	14.6	11.7	**12.1**	12.0	11.6	10.9	**11.5**	**11.8**
15	NW7096	715	10.5	13.6	10.9	12.6	12.1	**11.9**	9.8	11.4	10.6	**10.6**	**11.3**
16	DBW323	716	12.0	12.9	9.1	13.7	12.0	**11.9**	11.4	11.2	11.4	**11.3**	**11.6**
17	HI1653	717	11.4	12.1	9.3	12.4	11.2	**11.3**	9.8	11.9	11.1	**10.9**	**11.1**
18	PBW848	718	11.1	12.9	10.5	13.4	11.1	**11.8**	10.7	10.8	10.7	**10.8**	**11.3**
19	PBW839	719	11.4	11.4	9.8	12.9	10.9	**11.3**	10.9	10.9	10.2	**10.7**	**11.0**
20	HUW843	720	12.2	12.7	9.2	12.4	12.5	**11.8**	10.6	12.3	10.6	**11.2**	**11.5**
21	PBW838	721	11.5	11.4	9.6	13.3	11.4	**11.4**	9.9	12.2	9.8	**10.6**	**11.0**
22	DBW322	722	10.6	10.9	9.7	12.5	11.5	**11.0**	10.6	11.8	9.9	**10.8**	**10.9**
23	WH1142 (C)	723	9.7	11.1	8.5	13.2	11.3	**10.8**	8.9	10.6	11.0	**10.1**	**10.5**
24	BCW5	724	11.6	13.3	10.5	14.8	11.5	**12.3**	10.3	10.5	10.3	**10.4**	**11.4**
25	UP3062	725	10.4	11.6	8.8	13.0	12.5	**11.3**	10.2	10.6	10.8	**10.6**	**10.9**
Mean			**11.1**	**12.2**	**9.8**	**13.2**	**11.4**	**11.6**	**10.7**	**12.0**	**10.7**	**11.1**	**11.3**

Table 34: Sedimentation value (ml) of *T. aestivum* genotypes in NIVT-5A

S. No	Entry	Trial Code	NWPZ						NEPZ				Overall Mean
			Pantnagar	Ludhiana	Hisar	Delhi	Karnal	Mean	Kanpur	Samastipur	Varanasi	Mean	
1	WH1280	701	57	56	63	53	74	**61**	55	59	65	**60**	**60**
2	HD3368	702	52	58	64	59	67	**60**	59	60	62	**60**	**60**
3	HD3369	703	54	63	73	54	76	**64**	59	66	62	**62**	**63**
4	DBW321	704	51	47	-	44	63	**51**	59	44	48	**50**	**51**
5	BRW3863	705	40	40	54	37	60	**46**	44	45	42	**44**	**45**
6	WH1281	706	44	54	61	51	70	**56**	53	51	44	**49**	**53**
7	DBW324	707	42	47	57	48	62	**51**	51	51	46	**49**	**50**
8	HD3171 (C)	708	48	55	67	57	71	**60**	53	53	56	**54**	**57**
9	UP3063	709	27	35	45	41	43	**38**	35	33	37	**35**	**37**
10	JAUW683	710	43	52	49	45	55	**49**	37	49	53	**46**	**48**
11	K1910	711	42	42	54	37	53	**46**	35	48	51	**45**	**45**
12	PBW644 (C)	712	42	38	54	36	51	**44**	40	45	43	**43**	**43**
13	HI1654	713	45	48	55	52	60	**52**	42	51	53	**49**	**50**
14	K1317 (C)	714	44	35	53	37	53	**44**	40	51	54	**48**	**46**
15	NW7096	715	40	42	59	47	62	**50**	39	49	53	**47**	**48**
16	DBW323	716	40	44	50	44	55	**47**	43	43	58	**48**	**47**
17	HI1653	717	52	52	61	57	70	**58**	50	52	64	**55**	**57**
18	PBW848	718	53	45	56	46	61	**52**	51	49	66	**55**	**54**
19	PBW839	719	38	34	43	37	43	**39**	35	33	41	**36**	**38**
20	HUW843	720	52	45	51	44	57	**50**	40	48	48	**45**	**48**
21	PBW838	721	62	49	60	45	69	**57**	41	45	57	**48**	**52**
22	DBW322	722	53	51	59	50	62	**55**	45	49	52	**49**	**52**
23	WH1142 (C)	723	44	41	49	43	55	**46**	44	38	46	**43**	**45**
24	BCW5	724	59	44	59	48	61	**54**	45	47	45	**46**	**50**
25	UP3062	725	47	34	36	42	46	**41**	32	40	33	**35**	**38**
Mean			**47**	**46**	**55**	**46**	**60**	**51**	**45**	**48**	**51**	**48**	**49**

Table 35: Phenol test (Max-10) of *T. aestivum* genotypes in NIVT-5A

S. No	Entry	Trial Code	NWPZ				NEPZ				Overall Mean
			Pantnagar	Ludhiana	Delhi	Mean	Kanpur	Samastipur	Varanasi	Mean	
1	WH1280	701	7	7	7	**7.0**	8	7	7	**7.3**	**7.2**
2	HD3368	702	6	7	6	**6.3**	7	6	7	**6.7**	**6.5**
3	HD3369	703	7	8	7	**7.3**	7	7	6	**6.7**	**7.0**
4	DBW321	704	7	6	6	**6.3**	8	7	8	**7.7**	**7.0**
5	BRW3863	705	7	7	8	**7.3**	7	7	8	**7.3**	**7.3**
6	WH1281	706	8	8	7	**7.7**	6	6	7	**6.3**	**7.0**
7	DBW324	707	7	7	6	**6.7**	7	7	8	**7.3**	**7.0**
8	HD3171 (C)	708	5	6	6	**5.7**	6	6	7	**6.3**	**6.0**
9	UP3063	709	7	6	6	**6.3**	7	7	6	**6.7**	**6.5**
10	JAUW683	710	6	6	6	**6.0**	6	5	6	**5.7**	**5.8**
11	K1910	711	4	5	4	**4.3**	6	7	6	**6.3**	**5.3**
12	PBW644 (C)	712	7	8	8	**7.7**	5	6	6	**5.7**	**6.7**
13	HI1654	713	6	7	6	**6.3**	6	6	7	**6.3**	**6.3**
14	K1317 (C)	714	4	4	5	**4.3**	5	6	5	**5.3**	**4.8**
15	NW7096	715	7	8	8	**7.7**	5	5	6	**5.3**	**6.5**
16	DBW323	716	6	5	6	**5.7**	5	5	6	**5.3**	**5.5**
17	HI1653	717	7	7	8	**7.3**	7	8	8	**7.7**	**7.5**
18	PBW848	718	7	8	8	**7.7**	6	7	7	**6.7**	**7.2**
19	PBW839	719	8	7	7	**7.3**	7	7	7	**7.0**	**7.2**
20	HUW843	720	7	8	7	**7.3**	6	6	6	**6.0**	**6.7**
21	PBW838	721	8	7	8	**7.7**	8	7	7	**7.3**	**7.5**
22	DBW322	722	7	6	7	**6.7**	7	6	7	**6.7**	**6.7**
23	WH1142 (C)	723	7	8	7	**7.3**	6	7	6	**6.3**	**6.8**
24	BCW5	724	7	7	8	**7.3**	7	7	7	**7.0**	**7.2**
25	UP3062	725	6	6	7	**6.3**	7	6	7	**6.7**	**6.5**
Mean			**6.6**	**6.8**	**6.8**	**6.7**	**6.5**	**6.4**	**6.7**	**6.5**	**6.6**

Table 36: Grain appearance score (Max-10) of *T. aestivum* and *T. durum* genotypes in NIVT-5B

S. No	Entry	Trial Code	CZ					PZ				Overall Mean
			Vijapur	Indore	P. kheda	Junagarh	Mean	Dharwad	Niphad	Pune	Mean	
T. aestivum												
1	DBW326	801	6.6	7.4	6.9	6.7	**6.9**	6.4	7.3	6.3	**6.7**	**6.8**
2	GW528	802	6.6	7.8	6.3	6.7	**6.9**	5.8	7.3	6.1	**6.4**	**6.6**
3	MP1367	803	7.0	7.5	7.4	6.6	**7.1**	7.1	7.9	6.9	**7.3**	**7.2**
4	MACS6753	807	7.1	7.9	7.4	6.9	**7.3**	7.1	7.6	6.8	**7.2**	**7.2**
5	HD3372	808	6.7	8.3	7.6	6.7	**7.3**	7.4	7.4	7.4	**7.4**	**7.4**
6	HI1655	812	7.0	8.1	7.9	6.8	**7.5**	7.6	8.4	7.4	**7.8**	**7.6**
7	HD3371	813	6.2	7.0	6.3	6.5	**6.5**	7.1	7.4	8.1	**7.5**	**7.0**
8	NIAW3855	815	6.5	6.8	7.5	6.8	**6.9**	7.9	7.9	7.3	**7.7**	**7.3**
9	MP3523	818	6.7	8.4	7.5	6.6	**7.3**	7.3	7.6	7.8	**7.6**	**7.4**
10	NIAW3851	819	6.8	7.8	7.0	6.7	**7.1**	7.9	7.9	7.3	**7.7**	**7.4**
11	CG1036	820	7.2	7.9	7.3	6.9	**7.3**	7.4	7.9	6.8	**7.4**	**7.3**
12	UAS3014	821	6.5	7.6	7.6	6.7	**7.1**	8.1	7.6	7.9	**7.9**	**7.5**
13	MP1368	822	6.5	8.1	7.4	6.6	**7.2**	7.9	8.1	7.4	**7.8**	**7.5**
14	MACS6755	823	7.1	8.4	7.5	6.9	**7.5**	8.4	8.1	8.1	**8.2**	**7.8**
15	AKAW5088	824	7.2	8.1	7.8	6.9	**7.5**	7.3	8.1	7.9	**7.8**	**7.6**
16	DBW325	825	6.7	7.9	6.5	6.8	**7.0**	7.3	7.9	6.9	**7.4**	**7.2**
17	HI1605 (C)	809	6.6	7.3	6.8	6.7	**6.9**	7.4	7.4	6.8	**7.2**	**7.0**
18	DBW110 (C)	810	6.7	7.3	7.1	6.7	**7.0**	7.6	7.3	7.1	**7.3**	**7.1**
Mean			**6.8**	**7.8**	**7.2**	**6.7**	**7.1**	**7.4**	**7.7**	**7.2**	**7.5**	**7.3**
T. durum												
19	UAS475(d)	805	6.5	7.4	7.1	6.8	**7.0**	7.6	7.8	8.0	**7.8**	**7.4**
20	DDW55(d)	806	7.1	7.9	7.9	6.8	**7.4**	7.5	7.6	7.6	**7.6**	**7.5**
21	HI8830(d)	811	6.9	8.4	7.6	6.9	**7.5**	7.4	8.4	7.3	**7.7**	**7.6**
22	GW1356(d)	814	6.7	8.1	7.9	6.7	**7.4**	8.1	8.4	8.4	**8.3**	**7.8**
23	HI8831(d)	817	6.7	7.3	7.9	6.7	**7.2**	7.6	7.6	7.6	**7.6**	**7.4**
24	UAS446(d) (C)	804	6.6	8.1	7.6	6.7	**7.3**	7.4	8.1	8.1	**7.9**	**7.6**
25	HI8627(d) (C)	816	6.5	7.9	7.6	6.7	**7.2**	7.9	7.4	7.4	**7.6**	**7.4**
Mean			**6.7**	**7.9**	**7.7**	**6.8**	**7.3**	**7.6**	**7.9**	**7.8**	**7.8**	**7.5**

Table 37: Hectolitre weight (kg/hl) of *T. aestivum* and *T. durum* genotypes in NIVT-5B

S. No	Entry	Trial Code	CZ					PZ				Overall Mean
			Vijapur	Indore	P. kheda	Junagarh	Mean	Dharwad	Niphad	Pune	Mean	
T. aestivum												
1	DBW326	801	77.5	83.2	82.5	78.2	**80.4**	80.7	80.7	80.3	**80.6**	**80.5**
2	GW528	802	78.1	85.0	83.5	79.8	**81.6**	80.5	81.4	81.0	**81.0**	**81.3**
3	MP1367	803	80.8	86.3	84.1	78.8	**82.5**	81.6	79.2	81.2	**80.7**	**81.6**
4	MACS6753	807	80.7	86.0	83.4	80.5	**82.7**	81.0	81.3	82.1	**81.5**	**82.1**
5	HD3372	808	79.4	85.3	84.1	78.9	**81.9**	80.3	81.3	80.5	**80.7**	**81.3**
6	HI1655	812	78.6	80.9	82.0	77.6	**79.8**	82.1	82.0	81.8	**82.0**	**80.9**
7	HD3371	813	73.0	81.5	81.4	76.6	**78.1**	80.1	80.1	78.3	**79.5**	**78.8**
8	NIAW3855	815	80.0	84.6	84.2	79.9	**82.2**	81.2	80.4	83.7	**81.8**	**82.0**
9	MP3523	818	80.3	84.0	83.4	78.4	**81.5**	80.6	78.4	81.3	**80.1**	**80.8**
10	NIAW3851	819	77.1	83.2	82.3	78.1	**80.2**	78.1	81.1	79.3	**79.5**	**79.8**
11	CG1036	820	80.3	87.1	84.9	81.2	**83.4**	81.8	85.7	82.4	**83.3**	**83.3**
12	UAS3014	821	74.9	82.6	82.0	76.7	**79.1**	77.9	79.8	80.0	**79.2**	**79.1**
13	MP1368	822	77.4	84.6	80.4	76.2	**79.7**	78.1	76.9	78.4	**77.8**	**78.7**
14	MACS6755	823	80.6	86.5	84.5	80.4	**83.0**	81.8	85.4	83.7	**83.6**	**83.3**
15	AKAW5088	824	82.0	85.9	85.6	81.2	**83.7**	82.0	82.1	83.9	**82.7**	**83.2**
16	DBW325	825	77.3	82.1	82.8	78.4	**80.2**	78.9	81.0	78.1	**79.3**	**79.7**
17	HI1605 (C)	809	79.7	86.2	84.2	79.5	**82.4**	83.0	82.9	83.8	**83.2**	**82.8**
18	DBW110 (C)	810	77.3	82.6	83.3	78.6	**80.5**	80.2	81.6	80.4	**80.7**	**80.6**
Mean			**78.6**	**84.3**	**83.3**	**78.8**	**81.3**	**80.6**	**81.2**	**81.1**	**81.0**	**81.1**
T. durum												
19	UAS475(d)	805	76.6	83.2	83.8	78.7	**80.6**	80.5	82.6	82.7	**81.9**	**81.3**
20	DDW55(d)	806	81.1	86.4	83.9	80.9	**83.1**	82.8	85.9	83.8	**84.2**	**83.6**
21	HI8830(d)	811	77.2	86.8	85.5	78.6	**82.0**	83.7	83.1	84.3	**83.7**	**82.9**
22	GW1356(d)	814	73.7	76.6	77.3	72.3	**75.0**	70.6	72.1	71.7	**71.5**	**73.2**
23	HI8831(d)	817	78.5	85.6	85.1	79.2	**82.1**	77.6	85.3	85.4	**82.8**	**82.4**
24	UAS446(d) (C)	804	79.4	86.8	86.5	79.5	**83.1**	83.0	82.7	84.2	**83.3**	**83.2**
25	HI8627(d) (C)	816	79.0	86.7	83.8	77.3	**81.7**	80.6	83.3	85.0	**83.0**	**82.3**
Mean			**77.9**	**84.6**	**83.7**	**78.1**	**81.1**	**79.8**	**82.1**	**82.4**	**81.5**	**81.3**

Table 38: Protein content (%) at 12% moisture basis of *T. aestivum* and*T. durum* genotypes in NIVT-5B

S. No	Entry	Trial Code	CZ					PZ				Overall Mean
			Vijapur	Indore	P. kheda	Junagarh	Mean	Dharwad	Niphad	Pune	Mean	
T. aestivum												
1	DBW326	801	11.9	8.6	9.9	12.6	**10.8**	12.4	8.2	10.6	**10.4**	**10.6**
2	GW528	802	13.0	9.0	10.3	14.7	**11.8**	14.4	11.4	12.9	**12.9**	**12.3**
3	MP1367	803	11.6	9.2	11.0	15.6	**11.9**	14.8	12.6	13.1	**13.5**	**12.7**
4	MACS6753	807	12.0	10.0	11.2	14.3	**11.9**	12.6	12.7	13.1	**12.8**	**12.3**
5	HD3372	808	12.8	10.6	12.1	15.1	**12.7**	15.2	12.8	11.0	**13.0**	**12.8**
6	HI1655	812	10.6	8.7	11.1	13.0	**10.9**	12.8	9.1	10.9	**10.9**	**10.9**
7	HD3371	813	12.5	9.8	9.2	13.2	**11.2**	10.4	11.7	11.9	**11.3**	**11.3**
8	NIAW3855	815	10.7	9.4	10.8	13.9	**11.2**	11.5	11.1	10.6	**11.1**	**11.1**
9	MP3523	818	11.6	9.5	10.0	14.1	**11.3**	14.2	11.4	12.2	**12.6**	**12.0**
10	NIAW3851	819	11.5	9.0	10.6	12.9	**11.0**	13.2	10.1	10.6	**11.3**	**11.2**
11	CG1036	820	11.1	8.4	9.6	12.4	**10.4**	12.7	9.8	10.7	**11.1**	**10.7**
12	UAS3014	821	12.5	9.2	11.5	14.0	**11.8**	12.6	11.9	11.3	**11.9**	**11.9**
13	MP1368	822	13.2	10.1	10.8	15.4	**12.4**	15.8	12.4	13.2	**13.8**	**13.1**
14	MACS6755	823	12.6	9.7	9.9	12.8	**11.3**	13.1	10.9	11.6	**11.9**	**11.6**
15	AKAW5088	824	12.3	9.7	9.5	14.4	**11.5**	14.1	10.9	11.3	**12.1**	**11.8**
16	DBW325	825	12.0	9.9	10.8	13.2	**11.5**	11.7	11.1	12.5	**11.8**	**11.6**
17	HI1605 (C)	809	11.6	9.9	11.4	14.4	**11.8**	13.5	11.2	11.7	**12.1**	**12.0**
18	DBW110 (C)	810	11.9	9.6	10.3	13.4	**11.3**	13.4	11.1	10.6	**11.7**	**11.5**
Mean			**12.0**	**9.5**	**10.6**	**13.9**	**11.5**	**13.2**	**11.1**	**11.7**	**12.0**	**11.7**
T. durum												
19	UAS475(d)	805	12.0	9.2	9.7	13.3	**11.1**	11.7	10.7	10.5	**11.0**	**11.0**
20	DDW55(d)	806	12.7	9.1	10.6	13.0	**11.4**	13.1	12.1	10.4	**11.9**	**11.6**
21	HI8830(d)	811	13.8	9.9	9.2	13.4	**11.6**	10.7	12.6	9.3	**10.9**	**11.2**
22	GW1356(d)	814	11.9	10.2	10.2	14.2	**11.6**	13.3	13.2	14.1	**13.5**	**12.6**
23	HI8831(d)	817	11.7	9.2	10.4	13.2	**11.1**	12.3	11.2	10.6	**11.4**	**11.2**
24	UAS446(d) (C)	804	10.6	10.0	9.2	13.8	**10.9**	14.1	14.1	12.1	**13.4**	**12.2**
25	HI8627(d) (C)	816	11.2	10.8	9.7	14.6	**11.6**	11.9	12.4	12.1	**12.1**	**11.9**
Mean			**12.0**	**9.8**	**9.9**	**13.6**	**11.3**	**12.4**	**12.3**	**11.3**	**12.0**	**11.7**

Table 39: Sedimentation value (ml) of *T. aestivum* and *T. durum* genotypes in NIVT-5B

S. No	Entry	Trial Code	CZ					PZ				Overall Mean
			Vijapur	Indore	P. kheda	Junagarh	Mean	Dharwad	Niphad	Pune	Mean	
T. aestivum												
1	DBW326	801	46	47	43	46	**46**	44	50	54	**49**	**47**
2	GW528	802	47	50	49	53	**50**	44	54	56	**51**	**51**
3	MP1367	803	46	48	47	56	**49**	43	51	61	**52**	**50**
4	MACS6753	807	45	54	50	54	**51**	45	62	66	**58**	**54**
5	HD3372	808	47	65	66	54	**58**	57	70	73	**67**	**62**
6	HI1655	812	44	44	43	48	**45**	50	46	56	**51**	**48**
7	HD3371	813	45	68	60	46	**55**	66	74	80	**73**	**64**
8	NIAW3855	815	45	53	52	51	**50**	54	60	66	**60**	**55**
9	MP3523	818	44	46	49	50	**47**	50	65	66	**60**	**54**
10	NIAW3851	819	46	50	51	49	**49**	52	56	57	**55**	**52**
11	CG1036	820	40	47	51	41	**45**	53	56	63	**57**	**51**
12	UAS3014	821	47	54	57	52	**53**	62	68	73	**68**	**60**
13	MP1368	822	47	49	53	55	**51**	52	62	66	**60**	**56**
14	MACS6755	823	47	52	49	44	**48**	54	57	64	**58**	**53**
15	AKAW5088	824	45	42	42	53	**46**	44	50	51	**48**	**47**
16	DBW325	825	45	56	55	49	**51**	56	59	62	**59**	**55**
17	HI1605 (C)	809	48	65	54	53	**55**	54	57	76	**62**	**59**
18	DBW110 (C)	810	46	57	54	49	**52**	55	52	57	**55**	**53**
Mean			**46**	**53**	**51**	**50**	**50**	**52**	**58**	**64**	**58**	**54**
T. durum												
19	UAS475(d)	805	48	36	32	48	**41**	35	36	44	**38**	**40**
20	DDW55(d)	806	48	36	32	48	**41**	36	36	36	**36**	**39**
21	HI8830(d)	811	50	29	28	50	**39**	35	32	35	**34**	**37**
22	GW1356(d)	814	43	41	37	52	**43**	39	43	44	**42**	**43**
23	HI8831(d)	817	48	32	31	48	**40**	35	33	40	**36**	**38**
24	UAS446(d) (C)	804	47	39	36	50	**43**	41	41	47	**43**	**43**
25	HI8627(d) (C)	816	47	28	27	50	**38**	31	31	34	**32**	**35**
Mean			**47**	**34**	**32**	**49**	**41**	**36**	**36**	**40**	**37**	**39**

Table 40: Yellow berry incidence (%) of *T. aestivum* and *T. durum* genotypes in NIVT-5B

S. No	Entry	Trial Code	CZ					PZ				Overall Mean
			Vijapur	Indore	P. kheda	Junagarh	Mean	Dharwad	Niphad	Pune	Mean	
T. aestivum												
1	DBW326	801		34.0	17.5		**25.8**	5.5	11.5	19.0	**12.0**	**18.9**
2	GW528	802		4.5	32.0		**18.3**	3.5	11.0	19.0	**11.2**	**14.7**
3	MP1367	803		11.5	27.0		**19.3**	3.5	7.5	5.0	**5.3**	**12.3**
4	MACS6753	807		9.5	26.0		**17.8**	6.3	7.5	8.0	**7.3**	**12.5**
5	HD3372	808		13.0	17.0		**15.0**	2.3	14.5	15.5	**10.8**	**12.9**
6	HI1655	812		4.0	15.0		**9.5**	4.0	4.5	13.5	**7.3**	**8.4**
7	HD3371	813		12.0	33.0		**22.5**	12.5	7.5	12.0	**10.7**	**16.6**
8	NIAW3855	815		44.5	21.5		**33.0**	9.5	28.0	19.0	**18.8**	**25.9**
9	MP3523	818		11.0	23.0		**17.0**	3.0	21.0	9.0	**11.0**	**14.0**
10	NIAW3851	819		6.5	16.5		**11.5**	3.8	20.5	24.0	**16.1**	**13.8**
11	CG1036	820		15.5	23.5		**19.5**	3.3	13.5	11.0	**9.3**	**14.4**
12	UAS3014	821		21.0	17.5		**19.3**	2.3	14.0	18.5	**11.6**	**15.4**
13	MP1368	822		7.5	19.5		**13.5**	2.5	5.5	9.0	**5.7**	**9.6**
14	MACS6755	823		10.5	42.0		**26.3**	2.8	23.5	24.0	**16.8**	**21.5**
15	AKAW5088	824		11.0	24.5		**17.8**	2.8	12.5	8.0	**7.8**	**12.8**
16	DBW325	825		5.5	27.0		**16.3**	3.3	7.0	15.5	**8.6**	**12.4**
17	HI1605 (C)	809		17.0	24.5		**20.8**	4.3	15.0	15.0	**11.4**	**16.1**
18	DBW110 (C)	810		23.0	21.5		**22.3**	4.5	16.5	13.5	**11.5**	**16.9**
Mean				**14.5**	**23.8**		**19.2**	**4.4**	**13.4**	**14.4**	**10.7**	**14.9**
T. durum												
19	UAS475(d)	805		31.0	21.0		**26.0**	18.8	11.5	9.0	**13.1**	**19.6**
20	DDW55(d)	806		16.0	14.0		**15.0**	15.5	14.5	8.5	**12.8**	**13.9**
21	HI8830(d)	811		9.0	20.0		**14.5**	33.0	4.0	26.0	**21.0**	**17.8**
22	GW1356(d)	814		15.5	19.5		**17.5**	7.5	8.5	8.5	**8.2**	**12.8**
23	HI8831(d)	817		26.5	17.5		**22.0**	14.8	23.0	15.5	**17.8**	**19.9**
24	UAS446(d) (C)	804		10.0	24.5		**17.3**	2.3	5.5	6.0	**4.6**	**10.9**
25	HI8627(d) (C)	816		4.0	21.5		**12.8**	11.3	7.5	19.0	**12.6**	**12.7**
Mean				**16.0**	**19.7**		**17.9**	**14.7**	**10.6**	**13.2**	**12.9**	**15.4**

Table 41: Yellow Pigment (ppm) of *T. aestivum* and *T. durum* genotypes in NIVT-5B

S. No	Entry	Trial Code	CZ					PZ				Overall Mean
			Vijapur	Indore	P. kheda	Junagarh	Mean	Dharwad	Niphad	Pune	Mean	
T. aestivum												
1	DBW326	801		1.81	1.48		**1.65**	1.96	1.80	1.90	**1.89**	**1.77**
2	GW528	802		2.05	2.06		**2.06**	2.40	2.39	2.40	**2.40**	**2.23**
3	MP1367	803		2.38	2.37		**2.38**	2.67	2.38	2.65	**2.57**	**2.47**
4	MACS6753	807		2.48	2.17		**2.33**	2.66	2.40	2.53	**2.53**	**2.43**
5	HD3372	808		3.12	2.75		**2.94**	3.10	3.04	2.43	**2.86**	**2.90**
6	HI1655	812		3.14	3.17		**3.16**	2.73	2.71	2.96	**2.80**	**2.98**
7	HD3371	813		5.84	5.79		**5.82**	6.18	6.29	6.42	**6.30**	**6.06**
8	NIAW3855	815		2.74	2.78		**2.76**	3.12	3.50	3.00	**3.21**	**2.98**
9	MP3523	818		1.90	1.48		**1.69**	2.24	2.18	2.06	**2.16**	**1.93**
10	NIAW3851	819		3.16	3.06		**3.11**	2.51	2.59	3.40	**2.83**	**2.97**
11	CG1036	820		2.01	1.85		**1.93**	1.96	2.07	2.39	**2.14**	**2.04**
12	UAS3014	821		2.65	2.31		**2.48**	2.02	2.63	2.92	**2.52**	**2.50**
13	MP1368	822		2.83	2.66		**2.75**	2.90	2.93	2.65	**2.83**	**2.79**
14	MACS6755	823		2.51	2.21		**2.36**	2.31	2.52	2.66	**2.50**	**2.43**
15	AKAW5088	824		2.38	2.31		**2.35**	2.06	2.34	2.30	**2.23**	**2.29**
16	DBW325	825		2.47	2.15		**2.31**	2.10	2.32	2.17	**2.20**	**2.25**
17	HI1605 (C)	809		1.74	1.70		**1.72**	2.32	2.30	2.06	**2.23**	**1.97**
18	DBW110 (C)	810		2.24	2.21		**2.23**	2.58	2.88	2.53	**2.66**	**2.44**
Mean				**2.64**	**2.47**		2.55	**2.66**	**2.74**	**2.75**	2.71	2.63
T. durum												
19	UAS475(d)	805		7.08	7.26		**7.17**	7.37	7.17	7.82	**7.45**	**7.31**
20	DDW55(d)	806		5.80	5.63		**5.72**	6.55	5.65	6.32	**6.17**	**5.94**
21	HI8830(d)	811		6.39	8.01		**7.20**	6.81	6.43	7.61	**6.95**	**7.08**
22	GW1356(d)	814		4.32	4.56		**4.44**	4.44	4.17	4.44	**4.35**	**4.40**
23	HI8831(d)	817		6.37	6.63		**6.50**	6.49	6.11	5.96	**6.19**	**6.34**
24	UAS446(d) (C)	804		5.20	5.64		**5.42**	6.35	6.27	5.83	**6.15**	**5.79**
25	HI8627(d) (C)	816		6.53	6.37		**6.45**	6.51	6.71	6.38	**6.53**	**6.49**
Mean				**5.96**	**6.30**		6.13	**6.36**	**6.07**	**6.34**	6.26	6.19

Northern Hills Zone (IVT)

Table 42: Grain appearance score (Max-10) of *T. aestivum* genotypes in Northern Hills Zone IVT

S. No.	Entry	Trial Code	Almora	Shimla	Malan	Mean
Rainfed Timely Sown						
1	HS 507 (C)	**1901**	5.4	6.4	6.0	**5.9**
2	HS 562 (C)	**1912**	5.2	5.8	5.4	**5.5**
3	SKW 356	**1902**	5.0	6.2	5.8	**5.7**
4	VL 2042	**1903**	4.8	5.4	4.0	**4.7**
5	HPW 471	**1904**	5.2	5.4	5.0	**5.2**
6	HS 675	**1905**	4.8	4.8	5.0	**4.9**
7	HPW 472	**1906**	4.8	5.2	5.6	**5.2**
8	VL 2039	**1907**	4.6	5.8	4.8	**5.1**
9	HS 677	**1908**	4.6	6.4	6.6	**5.9**
10	HS 676	**1909**	5.8	5.8	6.2	**5.9**
11	UP 3064	**1910**	5.6	6.4	5.8	**5.9**
12	HS 678	**1911**	5.6	5.8	5.6	**5.7**
13	HPW 470	**1913**	5.6	5.6	5.6	**5.6**
14	HPW 469	**1914**	5.6	5.4	5.2	**5.4**
15	VL 2041	**1915**	5.6	5.6	5.8	**5.7**
16	VL 2040	**1916**	5.6	6.0	4.2	**5.3**
	Mean		**5.2**	**5.8**	**5.4**	**5.5**

Table 43: Hectolitre weight (kg/hl) of *T. aestivum* genotypes in Northern Hills Zone IVT

S. No.	Entry	Trial Code	Almora	Shimla	Malan	Mean
Rainfed Timely Sown						
1	HS 507 (C)	**1901**	79.0	81.4	82.0	**80.8**
2	HS 562 (C)	**1912**	77.0	80.4	72.0	**76.5**
3	SKW 356	**1902**	76.5	81.2	79.7	**79.1**
4	VL 2042	**1903**	72.6	78.7	64.3	**71.9**
5	HPW 471	**1904**	76.8	79.0	78.0	**77.9**
6	HS 675	**1905**	77.6	79.5	80.6	**79.2**
7	HPW 472	**1906**	76.6	81.3	78.4	**78.8**
8	VL 2039	**1907**	75.3	79.7	75.7	**76.9**
9	HS 677	**1908**	78.2	82.4	81.0	**80.5**
10	HS 676	**1909**	76.5	79.0	76.0	**77.2**
11	UP 3064	**1910**	77.5	82.3	72.0	**77.3**
12	HS 678	**1911**	79.0	81.0	79.6	**79.9**
13	HPW 470	**1913**	76.3	78.5	76.5	**77.1**
14	HPW 469	**1914**	77.5	79.4	75.4	**77.4**
15	VL 2041	**1915**	76.0	78.0	78.0	**77.3**
16	VL 2040	**1916**	77.5	78.8	69.5	**75.3**
	Mean		**76.9**	**80.0**	**76.2**	**77.7**

Table 44: Protein content (%) at 12% moisture basis of *T. aestivum* genotypes in Northern Hills Zone IVT

S. No.	Entry	Trial Code	Almora	Shimla	Malan	Mean
Rainfed Timely Sown						
1	HS 507 (C)	**1901**	10.7	9.1	9.3	**9.7**
2	HS 562 (C)	**1912**	10.1	6.7	9.1	**8.7**
3	SKW 356	**1902**	11.3	10.4	10.4	**10.7**
4	VL 2042	**1903**	10.9	5.8	9.8	**8.8**
5	HPW 471	**1904**	11.3	7.1	8.9	**9.1**
6	HS 675	**1905**	10.4	6.4	7.7	**8.2**
7	HPW 472	**1906**	11.4	9.2	9.1	**9.9**
8	VL 2039	**1907**	10.1	9.8	10.4	**10.1**
9	HS 677	**1908**	11.8	9.1	9.8	**10.2**
10	HS 676	**1909**	11.5	9.1	9.7	**10.1**
11	UP 3064	**1910**	10.6	8.4	9.0	**9.3**
12	HS 678	**1911**	12.2	9.3	10.1	**10.5**
13	HPW 470	**1913**	10.9	6.6	10.1	**9.2**
14	HPW 469	**1914**	10.5	7.5	9.2	**9.1**
15	VL 2041	**1915**	9.7	7.3	7.4	**8.1**
16	VL 2040	**1916**	10.3	9.3	9.5	**9.7**
	Mean		**10.8**	**8.2**	**9.3**	**9.5**

Table 45: Sedimentation value (ml) of *T. aestivum* genotypes in Northern Hills Zone IVT

S. No.	Entry	Trial Code	Almora	Shimla	Malan	Mean
Rainfed Timely Sown						
1	HS 507 (C)	**1901**	57	47	48	**51**
2	HS 562 (C)	**1912**	68	47	66	**60**
3	SKW 356	**1902**	60	49	61	**57**
4	VL 2042	**1903**	67	45	61	**58**
5	HPW 471	**1904**	64	47	60	**57**
6	HS 675	**1905**	68	45	59	**57**
7	HPW 472	**1906**	53	35	52	**47**
8	VL 2039	**1907**	64	57	66	**63**
9	HS 677	**1908**	54	40	51	**48**
10	HS 676	**1909**	43	29	44	**39**
11	UP 3064	**1910**	57	53	56	**55**
12	HS 678	**1911**	67	48	63	**59**
13	HPW 470	**1913**	70	51	71	**64**
14	HPW 469	**1914**	57	45	60	**54**
15	VL 2041	**1915**	47	37	46	**43**
16	VL 2040	**1916**	70	61	65	**65**
	Mean		**60**	**46**	**58**	**55**

Table 46: Phenol test score of *T. aestivum* genotypes in Northern Hills Zone IVT

S. No.	Entry	Trial Code	Almora	Shimla	Malan	Mean
Rainfed Timely Sown						
1	HS 507 (C)	**1901**	7.0	6.5	7.0	**6.8**
2	HS 562 (C)	**1912**	8.0	7.5	8.0	**7.8**
3	SKW 356	**1902**	7.0	6.0	7.0	**6.7**
4	VL 2042	**1903**	6.5	6.5	7.5	**6.8**
5	HPW 471	**1904**	6.5	5.5	7.0	**6.3**
6	HS 675	**1905**	6.0	5.0	6.5	**5.8**
7	HPW 472	**1906**	6.5	6.0	7.5	**6.7**
8	VL 2039	**1907**	7.0	6.5	7.0	**6.8**
9	HS 677	**1908**	7.0	7.0	8.0	**7.3**
10	HS 676	**1909**	7.5	6.0	6.0	**6.5**
11	UP 3064	**1910**	5.5	4.0	5.0	**4.8**
12	HS 678	**1911**	8.5	7.0	8.5	**8.0**
13	HPW 470	**1913**	7.5	8.0	8.0	**7.8**
14	HPW 469	**1914**	7.0	8.5	6.5	**7.3**
15	VL 2041	**1915**	5.0	3.0	5.5	**4.5**
16	VL 2040	**1916**	8.5	8.0	7.5	**8.0**
	Mean		**6.9**	**6.3**	**7.0**	**6.8**

SECTION E

NURSERIES

Quality Component & Wheat Biofortification Nursery

QCWBN

Table 1: Grain appearance score (Max-10) of QCWBN entries

S. No.	Genotype	NWPZ					
		Karnal	Hisar	Ludhiana	Delhi	P.Nagar	Mean
1	GW-A-2019-957	6.4	6.0	5.2	6.4	5.8	**6.0**
2	IND-549	5.4	5.6	5.8	5.8	5.4	**5.6**
3	UP2672(C)	6.6	6.2	6.4	6.0	5.8	**6.2**
4	BST-2019-01	5.2	5.6	5.0	5.8	4.8	**5.3**
5	KA-1916	5.8	6.6	6.2	6.0	5.6	**6.0**
6	MACS6222(C)	5.2	6.4	6.2	5.8	5.6	**5.8**
7	KA-1917	5.8	6.8	6.6	6.6	6.0	**6.4**
8	DBW187(C)	5.8	6.2	6.2	6.4	6.0	**6.1**
9	WB2(C)	5.8	6.4	5.8	6.2	5.0	**5.8**
10	HD3086(C)	5.6	6.4	6.2	6.2	5.6	**6.0**
11	BWL- 8880	6.0	6.8	5.8	6.0	5.8	**6.1**
12	GW322(C)	5.6	5.8	5.6	6.0	5.8	**5.8**
13	UASDW 30561	6.0	6.6	6.0	7.0	6.0	**6.3**
14	HS490(C)	6.0	5.6	5.6	5.6	5.6	**5.7**
15	BWL- 7829	6.6	6.6	5.6	6.4	5.8	**6.2**
16	QBI-19 - 22	5.0	5.6	5.4	5.4	5.2	**5.3**
17	BWL- 8875	6.8	6.8	6.6	6.0	5.6	**6.4**
18	BWL- 8878	6.6	6.6	6.4	6.2	5.8	**6.3**
19	QLD112	6.2	6.4	6.0	5.6	6.0	**6.0**
23	GW-A-2019-958	5.4	6.6	5.6	6.2	5.0	**5.8**
24	IND-551	6.4	6.2	5.8	5.8	5.6	**6.0**
25	BWL- 8884	6.2	6.8	6.0	6.2	5.6	**6.2**
26	QBI-19 - 14	5.2	5.0	4.6	5.8	4.8	**5.1**
29	BST-2019-02	5.2	5.8	4.2	5.2	5.2	**5.1**
31	QBP-18-14	6.6	6.4	6.4	6.2	5.6	**6.2**
34	QBP-18-15	6.2	6.6	5.6	6.0	6.0	**6.1**
36	BNSR-4	6.6	6.0	6.0	6.4	5.4	**6.1**
37	QBI-19 - 08	6.6	6.0	6.2	6.0	5.8	**6.1**
39	MP3533	6.4	6.0	6.4	6.0	5.6	**6.1**
42	BWL- 8879	6.6	6.2	6.0	6.0	6.0	**6.2**
44	GW2017-825	6.6	5.8	6.2	6.0	5.0	**5.9**
46	KA-1935	6.4	6.0	6.0	5.6	6.0	**6.0**
47	2nd HPYT429	6.4	5.8	5.6	5.8	5.8	**5.9**
48	QBI-19 - 11	6.4	6.0	5.8	6.0	6.0	**6.0**
49	GW-2018-936 (d)	6.0	5.4	5.4	6.2	6.2	**5.8**
51	HD3304	6.6	6.2	5.8	5.8	5.6	**6.0**
54	MP3520	6.8	5.8	5.8	5.8	5.6	**6.0**
56	GW-2018-934 (d)	5.8	5.4	6.0	6.4	5.6	**5.8**
57	BWL5429	6.4	5.0	6.0	6.0	5.4	**5.8**
58	QBI-19 - 10	6.6	5.2	6.0	6.0	5.8	**5.9**
60	AR-15-15	5.4	4.6	5.2	4.8		**5.0**
61	8th HPYT443	6.4	5.0	6.4	6.0	5.8	**5.9**
64	BWL-8035	6.6	5.8	6.2	5.8	6.2	**6.1**
68	NIAW-3889	6.4	5.2	5.8	6.0	5.8	**5.8**
69	BWL- 8881	6.2	5.2	5.4	5.8	5.8	**5.7**
71	MP3522	6.2	4.8	5.6	6.2	5.6	**5.7**
73	QBI-19 - 15	6.0	4.8	5.0	5.0	5.2	**5.2**
74	BWL- 7827	6.6	4.8	6.0	5.8	5.4	**5.7**
76	8th HPYT431	6.6	5.0	6.0	5.8	5.6	**5.8**
78	QLD-116	6.4	5.6	6.0	6.0	5.6	**5.9**
79	KA1821	7.0	5.0	5.4	6.2	5.4	**5.8**
80	QBI-19 - 09	6.6	5.4	6.2	6.2	6.0	**6.1**
	Mean	**6.2**	**5.9**	**5.8**	**6.0**	**5.6**	**5.9**

Table 1: Grain appearance score (Max-10) of QCWBN entries

S. No.	Genotype	NEPZ			CZ			PZ
		Varanasi	Kanpur	Mean	Indore	Vijapur	Mean	Dharwad
1	GW-A-2019-957	6.0	6.2	**6.1**	6.6	6.6	**6.6**	6.0
2	IND-549	6.0	5.8	**5.9**	6.4	6.0	**6.2**	5.8
3	UP2672(C)	6.0	6.4	**6.2**	6.2	6.0	**6.1**	6.2
4	BST-2019-01	5.0	4.2	**4.6**	5.8	6.0	**5.9**	5.8
5	KA-1916	5.6	5.4	**5.5**	6.0	6.4	**6.2**	5.6
6	MACS6222(C)	5.6	5.2	**5.4**	6.0	6.4	**6.2**	5.8
7	KA-1917	6.2	6.4	**6.3**	5.0	6.2	**5.6**	6.2
8	DBW187(C)	5.6	5.2	**5.4**	6.0	5.8	**5.9**	5.6
9	WB2(C)	5.8	5.0	**5.4**	6.0	6.2	**6.1**	5.8
10	HD3086(C)	5.8	5.4	**5.6**	5.4	5.6	**5.5**	6.0
11	BWL- 8880	6.0	6.4	**6.2**	6.2	6.0	**6.1**	6.0
12	GW322(C)	6.0	4.8	**5.4**	5.8	6.0	**5.9**	5.8
13	UASDW 30561	6.6	4.0	**5.3**	7.2	7.0	**7.1**	6.6
14	HS490(C)	5.0	4.2	**4.6**	4.4	5.6	**5.0**	5.4
15	BWL- 7829	6.2	5.8	**6.0**	5.6	6.2	**5.9**	5.2
16	QBI-19 - 22	5.4	5.6	**5.5**	4.2	5.8	**5.0**	6.0
17	BWL- 8875	6.0	5.6	**5.8**	6.0	6.0	**6.0**	6.2
18	BWL- 8878	6.0	5.6	**5.8**	5.6	6.0	**5.8**	5.2
19	QLD112	5.8	4.8	**5.3**	5.6	6.2	**5.9**	5.8
23	GW-A-2019-958	5.8	5.6	**5.7**	6.2	6.2	**6.2**	6.4
24	IND-551	6.0	5.8	**5.9**	4.2	5.0	**4.6**	6.0
25	BWL- 8884	6.2	6.0	**6.1**	6.2	6.2	**6.2**	5.6
26	QBI-19 - 14	5.8	5.4	**5.6**	6.0	6.2	**6.1**	5.8
29	BST-2019-02	5.4	4.8	**5.1**	4.0	5.4	**4.7**	5.8
31	QBP-18-14	5.6	6.2	**5.9**	5.8	6.0	**5.9**	6.2
34	QBP-18-15	5.8	4.2	**5.0**	5.2	5.2	**5.2**	6.0
36	BNSR-4	6.0	6.2	**6.1**	6.4	6.4	**6.4**	5.4
37	QBI-19 - 08	6.0	5.8	**5.9**	5.2	5.8	**5.5**	5.8
39	MP3533	6.0	6.4	**6.2**	6.8	7.2	**7.0**	6.2
42	BWL- 8879	5.6	5.8	**5.7**	5.8	6.2	**6.0**	4.8
44	GW2017-825	6.0	5.4	**5.7**	6.2	6.6	**6.4**	6.2
46	KA-1935	6.0	6.0	**6.0**	5.6	6.8	**6.2**	5.0
47	2nd HPYT429	5.8	5.6	**5.7**	6.4	5.6	**6.0**	5.8
48	QBI-19 - 11	6.0	6.0	**6.0**	5.4	6.2	**5.8**	6.0
49	GW-2018-936 (d)	5.6	5.6	**5.6**	6.4	6.6	**6.5**	6.8
51	HD3304	5.0	5.2	**5.1**	5.8	6.4	**6.1**	5.6
54	MP3520	5.2	5.8	**5.5**	5.2	5.6	**5.4**	5.6
56	GW-2018-934 (d)	5.2	5.8	**5.5**	6.4	6.8	**6.6**	6.6
57	BWL5429	4.8	4.8	**4.8**	6.2	6.0	**6.1**	5.2
58	QBI-19 - 10	5.4	5.4	**5.4**	6.0	6.2	**6.1**	5.6
60	AR-15-15		4.8	**4.8**	4.4	5.6	**5.0**	5.0
61	8th HPYT443	5.6	6.0	**5.8**	5.4	6.0	**5.7**	6.2
64	BWL-8035	6.0	6.2	**6.1**	5.2	6.2	**5.7**	6.2
68	NIAW-3889	6.2	5.6	**5.9**	5.6	6.2	**5.9**	5.2
69	BWL- 8881	6.0	5.8	**5.9**	5.4	6.4	**5.9**	5.6
71	MP3522	6.0	4.0	**5.0**	5.2	6.4	**5.8**	5.8
73	QBI-19 - 15	5.2	4.8	**5.0**	4.8	5.8	**5.3**	5.6
74	BWL- 7827	5.6	5.4	**5.5**	5.2	6.0	**5.6**	5.2
76	8th HPYT431	6.0	5.6	**5.8**	5.2	6.0	**5.6**	6.0
78	QLD-116	6.0	4.6	**5.3**	5.6	6.2	**5.9**	6.0
79	KA1821	5.8	5.2	**5.5**	5.2	5.8	**5.5**	5.8
80	QBI-19 - 09	6.2	6.4	**6.3**	6.6	6.4	**6.5**	6.0
	Mean	**5.8**	**5.5**	**5.6**	**5.7**	**6.1**	**5.9**	**5.8**

Table 2: Hectolitre Weight (kg/hl) of QCWBN entries

S. No.	Genotype	NWPZ					
		Karnal	Hisar	Ludhiana	Delhi	P.Nagar	Mean
1	GW-A-2019-957	79.0	79.6	73.6	79.9	70.5	**76.5**
2	IND-549	75.0	78.6	80.1	78.8	73.2	**77.1**
3	UP2672(C)	77.0	79.5	77.1	76.5	71.3	**76.3**
4	BST-2019-01	79.0	77.6	74.0	77.1	67.9	**75.1**
5	KA-1916	78.0	83.2	80.4	81.4	73.9	**79.4**
6	MACS6222(C)	74.0	81.0	80.5	76.0	71.3	**76.6**
7	KA-1917	76.0	80.1	77.5	76.7	72.0	**76.5**
8	DBW187(C)	76.3	79.0	76.7	77.6	70.8	**76.1**
9	WB2(C)	77.3	78.4	75.7	78.8	68.8	**75.8**
10	HD3086(C)	78.0	81.2	80.4	78.1	73.0	**78.1**
11	BWL- 8880	78.0	80.0	75.4	78.6	72.5	**76.9**
12	GW322(C)	76.2	76.0	77.2	75.5	71.3	**75.2**
13	UASDW 30561	78.5	76.5	74.9	76.4	73.2	**75.9**
14	HS490(C)	77.0	74.4	73.4	72.9	69.1	**73.4**
15	BWL- 7829	78.6	78.6	77.2	79.0	71.2	**76.9**
16	QBI-19 - 22	75.4	77.0	73.5	75.2	68.0	**73.8**
17	BWL- 8875	78.0	79.7	78.3	77.4	72.9	**77.3**
18	BWL- 8878	79.4	81.2	78.0	78.4	74.0	**78.2**
19	QLD112	77.5	79.0	78.3	78.0	70.8	**76.7**
23	GW-A-2019-958	74.2	80.5	77.9	79.9	70.0	**76.5**
24	IND-551	76.3	79.5	78.8	76.2	71.5	**76.5**
25	BWL- 8884	76.0	81.0	80.3	79.2	71.3	**77.6**
26	QBI-19 - 14	74.6	78.7	74.3	76.5	65.5	**73.9**
29	BST-2019-02	74.4	77.0	75.1	73.8	73.1	**74.7**
31	QBP-18-14	78.7	79.6	78.4	77.5	72.9	**77.4**
34	QBP-18-15	79.7	81.5	80.0	79.0	74.3	**78.9**
36	BNSR-4	77.4	78.6	78.0	78.1	69.9	**76.4**
37	QBI-19 - 08	79.0	82.5	77.6	79.0	71.7	**78.0**
39	MP3533	77.5	80.2	80.5	78.5	72.0	**77.7**
42	BWL- 8879	76.0	79.2	79.6	79.9	71.8	**77.3**
44	GW2017-825	77.6	79.4	79.2	76.9	67.3	**76.1**
46	KA-1935	75.7	79.7	79.7	77.6	72.0	**76.9**
47	2nd HPYT429	76.0	80.2	77.7	78.2	71.1	**76.6**
48	QBI-19 - 11	79.2	78.8	76.9	77.8	74.3	**77.4**
49	GW-2018-936 (d)	72.0	74.7	74.9	77.0	71.9	**74.1**
51	HD3304	75.5	79.0	77.4	75.2	72.0	**75.8**
54	MP3520	77.5	81.0	75.7	75.5	72.1	**76.4**
56	GW-2018-934 (d)	68.5	67.0	76.4	76.3	70.9	**71.8**
57	BWL5429	77.2	77.2	79.4	76.3	71.9	**76.4**
58	QBI-19 - 10	77.7	78.7	80.2	77.7	74.2	**77.7**
60	AR-15-15	66.7	70.0	69.5	68.2		**68.6**
61	8th HPYT443	77.0	74.7	81.3	77.4	74.0	**76.9**
64	BWL-8035	80.4	80.5	80.1	80.1	77.7	**79.8**
68	NIAW-3889	77.5	76.7	78.3	76.0	73.3	**76.4**
69	BWL- 8881	74.0	76.5	77.3	74.4	72.4	**74.9**
71	MP3522	76.0	75.6	78.4	76.6	72.1	**75.7**
73	QBI-19 - 15	74.9	74.2	76.0	69.3	66.7	**72.2**
74	BWL- 7827	76.3	79.0	81.6	76.6	72.7	**77.2**
76	8th HPYT431	73.8	75.0	77.9	71.9	73.7	**74.5**
78	QLD-116	77.6	73.2	79.0	74.5	74.5	**75.8**
79	KA1821	78.2	75.2	77.9	75.0	73.0	**75.9**
80	QBI-19 - 09	78.3	77.4	80.0	77.1	74.6	**77.5**
	Mean	**76.5**	**78.1**	**77.6**	**76.8**	**71.8**	**76.2**

Table 2: Hectolitre Weight (kg/hl) of QCWBN entries

S. No.	Genotype	NEPZ			CZ			PZ
		Varanasi	Kanpur*	Mean	Indore	Vijapur	Mean	Dharwad
1	GW-A-2019-957	78.0		78.0	81.6	81.5	**81.6**	77.6
2	IND-549	80.1		80.1	80.0	81.5	**80.8**	80.0
3	UP2672(C)	74.3		74.3	77.3	78.5	**77.9**	78.8
4	BST-2019-01	61.9		61.9	77.6	77.8	**77.7**	78.4
5	KA-1916	78.3		78.3	81.6	81.2	**81.4**	79.2
6	MACS6222(C)	74.4		74.4	80.0	80.7	**80.4**	79.4
7	KA-1917	76.7		76.7	66.6	74.8	**70.7**	79.0
8	DBW187(C)	74.9		74.9	75.5	75.2	**75.4**	
9	WB2(C)	74.2		74.2	78.2	77.2	**77.7**	76.5
10	HD3086(C)	75.0		75.0	74.3	75.2	**74.8**	76.2
11	BWL- 8880	78.5		78.5	79.2	76.7	**78.0**	78.3
12	GW322(C)	73.7		73.7	73.6	74.1	**73.9**	77.6
13	UASDW 30561	72.8		72.8	80.0	77.4	**78.7**	79.9
14	HS490(C)	68.6		68.6	73.0	73.0	**73.0**	74.0
15	BWL- 7829	--	--	--	78.0	77.3	**77.7**	76.3
16	QBI-19 - 22	--	--	--	74.6	76.6	**75.6**	80.0
17	BWL- 8875	77.1		77.1	76.0	77.1	**76.6**	78.1
18	BWL- 8878	76.8		76.8	73.6	74.1	**73.9**	77.7
19	QLD112	78.1		78.1	75.5	77.4	**76.5**	75.9
23	GW-A-2019-958	77.8		77.8	80.3	79.3	**79.8**	78.2
24	IND-551	76.4		76.4	67.4	67.0	**67.2**	75.4
25	BWL- 8884	73.3		73.3	78.6	78.8	**78.7**	77.7
26	QBI-19 - 14	74.4		74.4	78.0	79.6	**78.8**	76.3
29	BST-2019-02	77.1		77.1	70.7	74.9	**72.8**	78.7
31	QBP-18-14	74.7		74.7	74.0	78.8	**76.4**	77.7
34	QBP-18-15	79.0		79.0	78.0	78.9	**78.5**	79.3
36	BNSR-4	79.8		79.8	79.0	78.8	**78.9**	75.6
37	QBI-19 - 08	78.9		78.9	73.7	76.9	**75.3**	79.6
39	MP3533	78.4		78.4	82.0	81.2	**81.6**	79.1
42	BWL- 8879	78.3		78.3	74.7	78.5	**76.6**	
44	GW2017-825	80.1		80.1	81.0	81.7	**81.4**	79.1
46	KA-1935	76.6		76.6	78.7	79.7	**79.2**	
47	2nd HPYT429	77.8		77.8	75.3	76.6	**76.0**	79.7
48	QBI-19 - 11	79.1		79.1	78.0	79.6	**78.8**	79.7
49	GW-2018-936 (d)	70.1		70.1	76.5	78.0	**77.3**	78.8
51	HD3304	70.3		70.3	73.4	77.5	**75.5**	76.8
54	MP3520	75.8		75.8	69.5	73.8	**71.7**	77.3
56	GW-2018-934 (d)	67.6		67.6	77.3	79.3	**78.3**	79.7
57	BWL5429	73.7		73.7	79.0	80.9	**80.0**	78.4
58	QBI-19 - 10	71.9		71.9	77.4		**77.4**	79.9
60	AR-15-15				64.5	77.1	**70.8**	
61	8th HPYT443	74.3		74.3	72.7	77.1	**74.9**	78.2
64	BWL-8035	81.2		81.2	75.0	80.3	**77.7**	78.7
68	NIAW-3889	77.9		77.9	73.2	76.5	**74.9**	78.7
69	BWL- 8881	77.5		77.5	74.7	77.8	**76.3**	76.5
71	MP3522	78.8		78.8	73.7	79.9	**76.8**	80.5
73	QBI-19 - 15	74.2		74.2	73.7	75.2	**74.5**	75.8
74	BWL- 7827	79.3		79.3	78.4	80.0	**79.2**	78.3
76	8th HPYT431	76.1		76.1	69.0	71.9	**70.5**	77.0
78	QLD-116	76.9		76.9	74.0	75.8	**74.9**	77.4
79	KA1821	78.0		78.0	67.3	69.1	**68.2**	77.6
80	QBI-19 - 09	78.2		78.2	80.0	80.0	**80.0**	78.6
	Mean	**75.9**		**75.9**	**75.7**	**77.4**	**76.5**	**78.1**

*less sample

Table 3: Grain protein content (%) at 12% MB of QCWBN entries

S. No.	Genotype	NWPZ					
		Karnal	Hisar	Ludhiana	Delhi	P.Nagar	Mean
1	GW-A-2019-957	12.3	12.8	15.0	11.4	11.6	**12.6**
2	IND-549	12.1	11.8	11.6	11.2	11.2	**11.6**
3	UP2672(C)	12.7	10.4	12.1	13.4	13.4	**12.4**
4	BST-2019-01	12.3	10.6	11.0	12.8	13.0	**12.0**
5	KA-1916	11.3	8.4	8.7	12.1	10.3	**10.2**
6	MACS6222(C)	11.5	9.0	10.5	12.0	10.6	**10.7**
7	KA-1917	10.4	9.8	11.6	13.1	11.1	**11.2**
8	DBW187(C)	--	10.4	12.4	13.1	10.9	**11.7**
9	WB2(C)	13.2	10.5	12.4	14.0	12.3	**12.5**
10	HD3086(C)	12.2	8.5	11.5	12.1	10.6	**11.0**
11	BWL- 8880	13.0	11.8	12.2	13.8	10.9	**12.3**
12	GW322(C)	11.1	11.2	8.5	12.1	10.0	**10.6**
13	UASDW 30561	13.1	12.3	12.3	14.8	10.7	**12.6**
14	HS490(C)	11.5	11.1	11.3	12.6	10.6	**11.4**
15	BWL- 7829	13.5	13.2	12.1	13.3	11.4	**12.7**
16	QBI-19 - 22	12.7	10.7	13.0	12.1	11.2	**11.9**
17	BWL- 8875	13.0	11.8	11.2	12.1	11.2	**11.9**
18	BWL- 8878	12.5	10.1	11.8	12.7	11.7	**11.8**
19	QLD112	13.0	10.0	11.9	13.4	14.1	**12.5**
23	GW-A-2019-958	12.0	9.5	11.9	12.8	12.3	**11.7**
24	IND-551	11.4	9.1	11.5	12.0	11.1	**11.0**
25	BWL- 8884	12.0	10.3	11.2	12.6	11.0	**11.4**
26	QBI-19 - 14	13.2	11.1	14.9	12.3	12.5	**12.8**
29	BST-2019-02	12.3	11.2	11.2	13.6	11.6	**12.0**
31	QBP-18-14	13.4	11.6	12.3	14.4	11.7	**12.7**
34	QBP-18-15	14.4	13.9	14.0	15.0	12.6	**14.0**
36	BNSR-4	14.3	12.8	12.9	15.0	13.2	**13.6**
37	QBI-19 - 08	11.9	8.6	10.1	12.2	10.3	**10.6**
39	MP3533	13.8	11.0	12.6	14.0	12.5	**12.8**
42	BWL- 8879	13.4	9.5	11.9	13.6	10.8	**11.8**
44	GW2017-825	12.7	12.6	12.2	12.5	12.4	**12.5**
46	KA-1935	13.1	12.4	13.0	13.1	11.7	**12.6**
47	2nd HPYT429	--	10.6	10.7	11.7	10.7	**10.9**
48	QBI-19 - 11	12.8	11.9	13.0	13.6	11.7	**12.6**
49	GW-2018-936 (d)	15.6	14.8	14.4	14.1	11.0	**14.0**
51	HD3304	12.3	11.2	12.0	12.3	12.6	**12.1**
54	MP3520	12.3	8.7	12.2	12.1	9.7	**11.0**
56	GW-2018-934 (d)		14.5	13.1	14.7	11.0	**13.3**
57	BWL5429	13.6	9.6	12.3	14.1	11.2	**12.2**
58	QBI-19 - 10	12.6	8.9	12.2	12.8	10.7	**11.4**
60	AR-15-15	15.3	12.8	13.0	15.2	--	**14.1**
61	8th HPYT443	--	12.8	12.5	13.6	12.1	**12.7**
64	BWL-8035	14.2	10.4	12.3	14.8	12.7	**12.9**
68	NIAW-3889	11.8	9.6	10.0	12.0	11.2	**10.9**
69	BWL- 8881	13.3	9.4	10.0	12.2	10.8	**11.1**
71	MP3522	11.7	8.3	10.0	11.4	10.4	**10.4**
73	QBI-19 - 15	11.8	9.1	11.0	12.4	10.4	**10.9**
74	BWL- 7827	14.1	8.9	11.0	13.7	10.9	**11.7**
76	8th HPYT431	12.8	11.8	9.8	12.5	9.8	**11.4**
78	QLD-116	--	12.9	10.1	12.7	11.1	**11.7**
79	KA1821	13.3	11.7	9.5	12.8	10.7	**11.6**
80	QBI-19 - 09	14.8	12.5	11.3	14.3	12.2	**13.0**
	Mean	**12.8**	**10.9**	**11.8**	**13.0**	**11.4**	**12.0**

Table 3: Grain protein content (%) at 12% MB of QCWBN entries

S. No.	Genotype	NEPZ			CZ			PZ
		Varanasi	Kanpur	Mean	Indore	Vijapur	Mean	Dharwad
1	GW-A-2019-957	10.9	10.9	**10.9**	11.4	12.4	**11.9**	14.4
2	IND-549	10.1	11.3	**10.7**	10.7	11.4	**11.0**	14.5
3	UP2672(C)	11.1	9.5	**10.3**	11.1	11.4	**11.3**	16.0
4	BST-2019-01	11.1	11.5	**11.3**	12.9	13.1	**13.0**	12.7
5	KA-1916	10.0	10.3	**10.2**	10.1	11.0	**10.5**	12.6
6	MACS6222(C)	10.5	10.0	**10.3**	10.9	11.2	**11.1**	13.0
7	KA-1917	10.7	11.4	**11.0**	10.1	10.8	**10.5**	12.3
8	DBW187(C)	10.7	11.8	**11.2**	10.4	13.1	**11.7**	16.2
9	WB2(C)	11.8	12.3	**12.1**	11.2	12.7	**12.0**	15.6
10	HD3086(C)	11.0	10.7	**10.9**	9.1	10.8	**10.0**	15.4
11	BWL- 8880	11.7	12.9	**12.3**	11.7	14.4	**13.0**	15.8
12	GW322(C)	9.6	11.9	**10.7**	9.6	11.0	**10.3**	12.2
13	UASDW 30561	12.7	12.3	**12.5**	11.0	14.4	**12.7**	14.6
14	HS490(C)	11.1	12.6	**11.8**	10.1	11.6	**10.8**	13.4
15	BWL- 7829	12.7	12.9	**12.8**	13.5	14.4	**13.9**	17.4
16	QBI-19 - 22	0.0	9.9	**5.0**	10.5	11.6	**11.0**	14.3
17	BWL- 8875	10.7	10.3	**10.5**	11.5	11.6	**11.6**	14.0
18	BWL- 8878	10.7	10.7	**10.7**	13.0	12.8	**12.9**	16.3
19	QLD112	12.6	10.5	**11.5**	10.9	10.7	**10.8**	16.6
23	GW-A-2019-958	10.1	13.0	**11.5**	11.4	11.6	**11.5**	13.5
24	IND-551	10.3	10.8	**10.6**	12.6	13.6	**13.1**	14.6
25	BWL- 8884	10.0	10.7	**10.4**	12.8	12.6	**12.7**	16.5
26	QBI-19 - 14	11.1	11.3	**11.2**	10.7	12.1	**11.4**	13.3
29	BST-2019-02	10.1	10.2	**10.1**	12.1	12.2	**12.1**	14.0
31	QBP-18-14	11.8	13.3	**12.5**	12.5	13.7	**13.1**	16.1
34	QBP-18-15	11.3	13.4	**12.3**	13.6	14.2	**13.9**	16.1
36	BNSR-4	10.9	12.8	**11.8**	12.1	13.1	**12.6**	14.7
37	QBI-19 - 08	9.3	9.6	**9.5**	10.3	10.5	**10.4**	13.5
39	MP3533	10.3	13.9	**12.1**	11.5	11.8	**11.6**	14.3
42	BWL- 8879	10.2	11.3	**10.7**	11.7	10.4	**11.0**	17.2
44	GW2017-825	9.4	12.5	**10.9**	10.9	10.9	**10.9**	13.8
46	KA-1935	9.8	11.9	**10.9**	11.6	11.9	**11.8**	16.7
47	2nd HPYT429	9.1	11.9	**10.5**	11.0	9.9	**10.4**	14.1
48	QBI-19 - 11	10.4	10.4	**10.4**	11.9	12.3	**12.1**	15.0
49	GW-2018-936 (d)	13.0	11.5	**12.3**	13.1	14.6	**13.9**	15.7
51	HD3304	11.3	11.0	**11.2**	11.7	11.2	**11.4**	14.4
54	MP3520	11.5	12.4	**12.0**	10.7	9.8	**10.2**	15.6
56	GW-2018-934 (d)	14.2	12.1	**13.2**	14.1	13.8	**14.0**	14.4
57	BWL5429	12.9	11.1	**12.0**	11.8	12.0	**11.9**	15.7
58	QBI-19 - 10	12.8	11.9	**12.3**	11.8	11.5	**11.7**	14.7
60	AR-15-15	--	11.1	**11.1**	10.9	11.3	**11.1**	--
61	8th HPYT443	9.6	11.1	**10.3**	--	12.0	**12.0**	14.6
64	BWL-8035	12.2	10.9	**11.6**	13.0	12.8	**12.9**	14.9
68	NIAW-3889	9.1	9.5	**9.3**	12.1	11.0	**11.6**	15.0
69	BWL- 8881	9.3	12.3	**10.8**	13.9	11.0	**12.5**	16.5
71	MP3522	9.0	14.4	**11.7**	11.3	9.7	**10.5**	13.0
73	QBI-19 - 15	9.9	11.1	**10.5**	10.9	10.6	**10.7**	13.1
74	BWL- 7827	10.7	10.7	**10.7**	11.5	10.6	**11.0**	15.7
76	8th HPYT431	10.4	13.5	**11.9**	13.5	12.1	**12.8**	15.1
78	QLD-116	10.2	11.8	**11.0**	13.2	12.7	**13.0**	15.5
79	KA1821	9.8	13.6	**11.7**	9.9	11.1	**10.5**	13.5
80	QBI-19 - 09	11.1	10.6	**10.9**	11.6	13.1	**12.4**	15.6
	Mean	**10.6**	**11.6**	**11.1**	**11.6**	**12.0**	**11.8**	**14.8**

Table 4: Sedimentation volume (ml) of QCWBN entries

S. No.	Genotype	NWPZ					
		Karnal	Hisar	Ludhiana	Delhi	P.Nagar	Mean
1	GW-A-2019-957	50	48	53	55	53	**52**
2	IND-549	65	53	65	68	62	**63**
3	UP2672(C)	69	57	71	74	70	**68**
4	BST-2019-01	29	29	26	36	41	**32**
5	KA-1916	46	36	37	53	46	**43**
6	MACS6222(C)	41	34	38	53	47	**42**
7	KA-1917	34	39	42	50	49	**43**
8	DBW187(C)	75	60	76	74	68	**70**
9	WB2(C)	76	65	75	76	76	**74**
10	HD3086(C)	69	50	62	74	57	**62**
11	BWL- 8880	67	67	69	69	60	**66**
12	GW322(C)	43	43	37	50	41	**43**
13	UASDW 30561	46	34	36	53	53	**44**
14	HS490(C)	41	39	39	51	39	**42**
15	BWL- 7829	60	55	57	67	53	**58**
16	QBI-19 - 22	46	39	47	50	39	**44**
17	BWL- 8875	69	64	63	70	60	**65**
18	BWL- 8878	68	60	58	69	61	**63**
19	QLD112	76	49	49	57	59	**58**
23	GW-A-2019-958	53	44	48	52	52	**50**
24	IND-551	60	51	59	61	60	**58**
25	BWL- 8884	57	54	60	64	52	**58**
26	QBI-19 - 14	46	41	56	45	47	**47**
29	BST-2019-02	60	54	63	65	60	**60**
31	QBP-18-14	75	70	59	67	70	**68**
34	QBP-18-15	79	76	79	74	69	**75**
36	BNSR-4	78	69	71	76	68	**73**
37	QBI-19 - 08	51	47	51	65	50	**53**
39	MP3533	59	54	62	70	62	**61**
42	BWL- 8879	75	62	67	77	71	**70**
44	GW2017-825	50	48	49	54	59	**52**
46	KA-1935	62	55	61	70	67	**63**
47	2nd HPYT429	71	74	64	74	64	**70**
48	QBI-19 - 11	65	67	64	76	66	**68**
49	GW-2018-936 (d)	29	27	27	28	34	**29**
51	HD3304	74	74	69	76	76	**74**
54	MP3520	62	53	63	77	56	**62**
56	GW-2018-934 (d)	31	36	23	26	36	**31**
57	BWL5429	78	69	79	77	74	**75**
58	QBI-19 - 10	67	53	62	71	58	**62**
60	AR-15-15	67	56	60	76	6	**53**
61	8th HPYT443	79	74	79	79	79	**78**
64	BWL-8035	74	63	68	76	69	**70**
68	NIAW-3889	73	62	60	79	67	**68**
69	BWL- 8881	63	60	57	65	60	**61**
71	MP3522	71	51	64	48	63	**60**
73	QBI-19 - 15	43	36	39	47	36	**40**
74	BWL- 7827	63	53	60	75	69	**64**
76	8th HPYT431	64	55	56	74	52	**60**
78	QLD-116	70	63	57	74	64	**66**
79	KA1821	71	60	60	75	64	**66**
80	QBI-19 - 09	63	55	54	63	55	**58**
	Mean	**61**	**54**	**57**	**64**	**57**	**58**

Table 4: Sedimentation volume (ml) of QCWBN entries

S. No.	Genotype	NEPZ			CZ			PZ
		Varanasi	Kanpur	Mean	Indore	Vijapur	Mean	Dharwad
1	GW-A-2019-957	56	59	**57**	43	47	**45**	48
2	IND-549	59	72	**66**	63	59	**61**	70
3	UP2672(C)	63	67	**65**	69	69	**69**	71
4	BST-2019-01	40	34	**37**	34	31	**33**	29
5	KA-1916	48	53	**50**	47	42	**44**	44
6	MACS6222(C)	53	52	**52**	45	40	**42**	67
7	KA-1917	51	55	**53**	42	39	**40**	46
8	DBW187(C)	75	76	**75**	76	77	**76**	71
9	WB2(C)	71	77	**74**	78	74	**76**	75
10	HD3086(C)	63	64	**63**	56	67	**61**	67
11	BWL- 8880	62	76	**69**	63	70	**67**	63
12	GW322(C)	43	48	**46**	47	52	**49**	45
13	UASDW 30561	48	49	**49**	41	38	**39**	41
14	HS490(C)	47	57	**52**	43	42	**42**	47
15	BWL- 7829	64	62	**63**	70	64	**67**	65
16	QBI-19 - 22	40	49	**45**	54	48	**51**	48
17	BWL- 8875	61	62	**61**	63	65	**64**	60
18	BWL- 8878	61	70	**65**	73	70	**71**	69
19	QLD112	49	58	**54**	60	61	**60**	54
23	GW-A-2019-958	48	58	**53**	57	51	**54**	70
24	IND-551	55	61	**58**	73	72	**72**	71
25	BWL- 8884	56	59	**57**	67	64	**66**	69
26	QBI-19 - 14	45	50	**47**	44	43	**43**	48
29	BST-2019-02	56	69	**63**	71	67	**69**	67
31	QBP-18-14	71	74	**73**	72	76	**74**	75
34	QBP-18-15	77	77	**77**	78	79	**78**	76
36	BNSR-4	65	76	**71**	75	69	**72**	51
37	QBI-19 - 08	51	53	**52**	67	55	**61**	62
39	MP3533	55	62	**59**	65	56	**61**	62
42	BWL- 8879	77	74	**75**	79	63	**71**	74
44	GW2017-825	47	68	**57**	50	47	**48**	49
46	KA-1935	59	64	**62**	67	61	**64**	76
47	2nd HPYT429	60	78	**69**	75	67	**71**	73
48	QBI-19 - 11	64	66	**65**	76	62	**69**	67
49	GW-2018-936 (d)	33	36	**35**	24	34	**29**	32
51	HD3304	74	68	**71**	76	67	**71**	74
54	MP3520	69	74	**72**	73	59	**66**	68
56	GW-2018-934 (d)	32	39	**36**	24	29	**27**	32
57	BWL5429	74	75	**74**	79	64	**71**	79
58	QBI-19 - 10	69	69	**69**	75	59	**67**	68
60	AR-15-15	6	60	**33**	60	53	**56**	70
61	8th HPYT443	44	78	**61**	78	71	**75**	62
64	BWL-8035	68	62	**65**	74	71	**73**	70
68	NIAW-3889	57	63	**60**	79	61	**70**	64
69	BWL- 8881	55	63	**59**	78	62	**70**	69
71	MP3522	61	75	**68**	73	56	**64**	70
73	QBI-19 - 15	40	41	**41**	48	36	**42**	47
74	BWL- 7827	60	57	**59**	75	63	**69**	75
76	8th HPYT431	57	59	**58**	75	68	**71**	62
78	QLD-116	62	73	**67**	76	71	**74**	74
79	KA1821	61	72	**67**	62	62	**62**	68
80	QBI-19 - 09	56	55	**56**	62	57	**60**	62
	Mean	**56**	**62**	**59**	**63**	**58**	**61**	**62**

Table 5: Grain Hardness Index of QCWBN entries

S. No.	Genotype	Delhi	Indore	Mean
1	GW-A-2019-957	87	78	**82**
2	IND-549	92	80	**86**
3	UP2672(C)	85	82	**83**
4	BST-2019-01	102	95	**99**
5	KA-1916	94	97	**96**
6	MACS6222(C)	92	80	**86**
7	KA-1917	82	89	**86**
8	DBW187(C)	81	88	**85**
9	WB2(C)	80	79	**79**
10	HD3086(C)	86	89	**87**
11	BWL- 8880	63	68	**66**
12	GW322(C)	84	83	**83**
13	UASDW 30561	90	81	**86**
14	HS490(C)	25	31	**28**
15	BWL- 7829	82	76	**79**
16	QBI-19 - 22	16	21	**19**
17	BWL- 8875	74	88	**81**
18	BWL- 8878	67	73	**70**
19	QLD112	14	--	**14**
23	GW-A-2019-958	74	69	**71**
24	IND-551	84	91	**87**
25	BWL- 8884	85	78	**82**
26	QBI-19 - 14	18	21	**19**
29	BST-2019-02	91	96	**93**
31	QBP-18-14	76	85	**80**
34	QBP-18-15	72	82	**77**
36	BNSR-4	71	74	**73**
37	QBI-19 - 08	81	88	**85**
39	MP3533	78	73	**75**
42	BWL- 8879	74	75	**74**
44	GW2017-825	86	81	**84**
46	KA-1935	74	73	**74**
47	2nd HPYT429	80	83	**81**
48	QBI-19 - 11	70	73	**72**
49	GW-2018-936 (d)	96	86	**91**
51	HD3304	82	86	**84**
54	MP3520	77	88	**83**
56	GW-2018-934 (d)	97	88	**93**
57	BWL5429	95	92	**93**
58	QBI-19 - 10	78	81	**79**
60	AR-15-15	92	89	**91**
61	8th HPYT443	67	75	**71**
64	BWL-8035	81	81	**81**
68	NIAW-3889	80	85	**83**
69	BWL- 8881	86	84	**85**
71	MP3522	82	85	**83**
73	QBI-19 - 15	23	22	**22**
74	BWL- 7827	91	85	**88**
76	8th HPYT431	84	81	**82**
78	QLD-116	90	86	**88**
79	KA1821	90	90	**90**
80	QBI-19 - 09	84	78	**81**
	Mean	**77**	**78**	**77**

Table 6: Fe content (ppm) of QCWBN entries

S. No.	Genotype	NWPZ					NEPZ	CZ			
		Delhi	Karnal	Hisar	Ludhiana	Mean	Kanpur	Vijapur	Indore	Mean	Overall mean
1	GW-A-2019-957	28.8	39.2	43.6	36.5	**37.0**	**37.0**	35.7	39.8	**37.8**	**37.2**
2	IND-549	36.6	42.9	44.0	40.1	**40.9**	**44.9**	35.5	47.9	**41.7**	**41.7**
3	UP2672(C)	37.2	36.6	38.9	32.4	**36.3**	**34.2**	33.1	37.0	**35.1**	**35.6**
4	BST-2019-01	29.2	31.6	34.0	30.2	**31.3**	**33.1**	32.6	43.0	**37.8**	**33.4**
5	KA-1916	39.8	37.3	38.6	32.2	**37.0**	**36.1**	34.3	42.2	**38.3**	**37.2**
6	MACS6222(C)	36.9	38.2	38.3	32.4	**36.5**	**34.8**	37.8	39.3	**38.6**	**36.8**
7	KA-1917	36.6	41.2	36.8	38.3	**38.2**	**37.2**	36.7	37.8	**37.3**	**37.8**
8	DBW187(C)	36.7	37.2	39.7	32.3	**36.5**	**35.5**	33.3	36.9	**35.1**	**35.9**
9	WB2(C)	38.7	39.5	39.0	35.9	**38.3**	**38.3**	34.4	39.0	**36.7**	**37.8**
10	HD3086(C)	36.4	39.3	39.8	33.6	**37.3**	**37.4**	34.8	36.5	**35.7**	**36.8**
11	BWL- 8880	35.4	37.2	40.0	32.9	**36.4**	**40.1**	36.2	39.0	**37.6**	**37.3**
12	GW322(C)	34.3	34.5	38.9	30.9	**34.7**	**36.3**	31.0	34.5	**32.8**	**34.3**
13	UASDW 30561	36.5	39.5	43.8	33.1	**38.2**	**34.0**	32.6	40.8	**36.7**	**37.2**
14	HS490(C)	34.9	34.9	37.4	30.2	**34.4**	**34.3**	31.8	33.2	**32.5**	**33.8**
15	BWL- 7829	34.7	37.4	39.2	35.2	**36.6**	**36.2**	34.1	37.0	**35.6**	**36.3**
16	QBI-19 - 22	32.7	34.1	34.1	32.1	**33.3**	**32.0**	30.5	35.7	**33.1**	**33.0**
17	BWL- 8875	37.1	41.1	59.1	33.3	**42.7**	**34.3**	31.6	38.0	**34.8**	**39.2**
18	BWL- 8878	40.5	38.2	36.5	34.7	**37.5**	**33.8**	34.1	39.4	**36.8**	**36.7**
19	QLD112	40.9	37.4	35.4	34.1	**37.0**	**33.8**	36.0	41.3	**38.7**	**37.0**
23	GW-A-2019-958	36.0	33.7	38.1	34.5	**35.6**	**34.2**	35.4	38.1	**36.8**	**35.7**
24	IND-551	35.0	37.6	36.7	35.8	**36.3**	**29.3**	35.2	36.0	**35.6**	**35.1**
25	BWL- 8884	36.9	36.2	38.2	36.4	**36.9**	**36.5**	31.5	38.3	**34.9**	**36.3**
26	QBI-19 - 14	33.3	33.1	28.9	42.2	**34.4**	**33.7**	30.3	38.4	**34.4**	**34.3**
29	BST-2019-02	35.2	31.9	34.0	30.5	**32.9**	**35.8**	34.0	36.4	**35.2**	**34.0**
31	QBP-18-14	37.8	37.1	33.9	30.8	**34.9**	**39.9**	31.6	38.9	**35.3**	**35.7**
34	QBP-18-15	42.7	42.5	45.2	37.5	**42.0**	**40.4**	37.3	42.1	**39.7**	**41.1**
36	BNSR-4	43.0	36.8	39.0	39.9	**39.7**	**37.9**	36.2	38.8	**37.5**	**38.8**
37	QBI-19 - 08	36.6	35.7	42.4	34.3	**37.3**	**32.9**	33.4	35.3	**34.4**	**35.8**
39	MP3533	38.5	45.0	40.2	40.1	**41.0**	**38.0**	36.1	43.5	**39.8**	**40.2**
42	BWL- 8879	39.9	41.3	39.0	35.8	**39.0**	**39.5**	30.1	40.9	**35.5**	**38.1**
44	GW2017-825	38.0	44.2	41.1	31.4	**38.7**	**36.8**	33.3	42.2	**37.8**	**38.1**
46	KA-1935	34.0	34.9	46.5	35.9	**37.8**	**36.5**	35.8	37.4	**36.6**	**37.3**
47	2nd HPYT429	33.7	37.0	39.7	36.9	**36.8**	**38.9**	38.5	35.5	**37.0**	**37.2**
48	QBI-19 - 11	42.7	38.0	38.6	32.1	**37.9**	**35.9**	35.6	40.8	**38.2**	**37.7**
49	GW-2018-936 (d)	34.2	41.5	39.6	36.5	**38.0**	**34.1**	33.9	37.9	**35.9**	**36.8**
51	HD3304	37.6	39.0	38.8	31.0	**36.6**	**38.1**	36.2	39.9	**38.1**	**37.2**
54	MP3520	35.3	33.2	39.8	27.2	**33.9**	**36.1**	30.8	37.6	**34.2**	**34.3**
56	GW-2018-934 (d)	33.0	38.7	44.2	29.8	**36.4**	**35.7**	34.2	37.4	**35.8**	**36.1**
57	BWL5429	33.8	38.5	38.6	32.1	**35.8**	**34.6**	34.9	35.2	**35.1**	**35.4**
58	QBI-19 - 10	42.5	40.3	33.3	36.7	**38.2**	**33.5**	33.7	38.9	**36.3**	**37.0**
60	AR-15-15	34.6	37.9	42.7	32.9	**37.0**	**33.5**	30.8	35.2	**33.0**	**35.4**
61	8th HPYT443	43.1	44.4	39.2	34.2	**40.2**	**31.4**	38.9	40.4	**39.7**	**38.8**
64	BWL-8035	36.7	35.8	42.6	33.3	**37.1**	**38.6**	35.0	36.4	**35.7**	**36.9**
68	NIAW-3889	40.0	35.4	35.0	29.4	**35.0**	**33.4**	31.2	36.5	**33.9**	**34.4**
69	BWL- 8881	35.1	39.2	37.1	34.5	**36.5**	**37.0**	29.1	39.5	**34.3**	**35.9**
71	MP3522	32.5	31.1	38.9	31.6	**33.5**	**39.0**	31.9	35.5	**33.7**	**34.4**
73	QBI-19 - 15	29.6	31.4	36.8	31.2	**32.3**	**29.7**	31.4	33.5	**32.5**	**31.9**
74	BWL- 7827	37.3	38.8	36.6	32.6	**36.3**	**33.2**	34.7	38.5	**36.6**	**36.0**
76	8th HPYT431	37.2	33.0	39.4	29.6	**34.8**	**36.5**	35.3	38.2	**36.8**	**35.6**
78	QLD-116	37.1	41.8	43.3	29.6	**38.0**	**37.3**	36.6	40.4	**38.5**	**38.0**
79	KA1821	31.9	31.6	38.5	26.6	**32.2**	**35.4**	32.4	35.7	**34.1**	**33.2**
80	QBI-19 - 09	40.9	41.0	42.1	36.6	**40.2**	**37.7**	35.7	41.5	**38.6**	**39.4**
		36.5	**37.6**	**39.3**	**33.7**	**36.8**	**35.9**	**34.0**	**38.4**	**36.2**	**36.5**

Table 7: Zn content in ppm of QCWBN entries

S. No.	Genotype	NWPZ					NEPZ	CZ			
		Delhi	Karnal	Hisar	Ludhiana	Mean	Kanpur	Vijapur	Indore	Mean	Overall mean
1	GW-A-2019-957	45.2	45.2	50.2	60.4	**50.3**	**28.7**	52.6	45.4	**49.0**	**46.8**
2	IND-549	48.4	33.9	41.9	40.0	**41.1**	**36.2**	56.3	51.2	**53.8**	**44.0**
3	UP2672(C)	58.1	36.0	35.0	34.5	**40.9**	**32.3**	51.9	44.4	**48.2**	**41.7**
4	BST-2019-01	44.6	32.8	36.0	36.5	**37.5**	**35.5**	51.1	44.3	**47.7**	**40.1**
5	KA-1916	67.2	33.4	32.8	29.6	**40.8**	**37.3**	58.4	40.8	**49.6**	**42.8**
6	MACS6222(C)	56.6	34.6	34.7	32.7	**39.7**	**32.3**	48.5	41.2	**44.9**	**40.1**
7	KA-1917	57.8	40.5	37.0	36.9	**43.1**	**34.7**	54.2	50.8	**52.5**	**44.6**
8	DBW187(C)	48.5	28.9	28.5	28.9	**33.7**	**26.4**	41.8	38.2	**40.0**	**34.5**
9	WB2(C)	53.2	33.4	33.5	31.3	**37.9**	**33.1**	46.3	42.5	**44.4**	**39.0**
10	HD3086(C)	50.4	29.6	30.1	30.9	**35.3**	**29.6**	45.7	38.2	**42.0**	**36.4**
11	BWL- 8880	57.2	33.3	36.5	38.7	**41.4**	**33.9**	55.6	47.6	**51.6**	**43.3**
12	GW322(C)	56.3	31.4	33.7	31.5	**38.2**	**31.9**	49.1	42.7	**45.9**	**39.5**
13	UASDW 30561	57.3	33.3	38.9	55.0	**46.1**	**33.7**	49.6	48.2	**48.9**	**45.1**
14	HS490(C)	56.4	31.9	32.9	29.3	**37.6**	**31.3**	46.7	39.5	**43.1**	**38.3**
15	BWL- 7829	51.3	40.2	39.6	38.9	**42.5**	**34.5**	57.2	52.8	**55.0**	**44.9**
16	QBI-19 - 22	53.9	33.1	36.1	43.0	**41.5**	**28.0**	47.3	43.6	**45.5**	**40.7**
17	BWL- 8875	52.4	36.7	38.9	28.0	**39.0**	**29.7**	43.0	42.8	**42.9**	**38.8**
18	BWL- 8878	69.8	36.4	34.2	38.1	**44.6**	**36.1**	51.4	47.6	**49.5**	**44.8**
19	QLD112	60.3	34.4	30.9	32.8	**39.6**	**36.1**	43.9	41.2	**42.6**	**39.9**
23	GW-A-2019-958	56.7	30.0	35.7	40.2	**40.7**	**42.2**	53.8	47.3	**50.6**	**43.7**
24	IND-551	50.3	35.7	29.5	31.2	**36.7**	**33.1**	52.2	47.2	**49.7**	**39.9**
25	BWL- 8884	61.8	31.5	33.2	31.7	**39.6**	**30.5**	46.4	42.7	**44.6**	**39.7**
26	QBI-19 - 14	59.2	37.7	31.9	51.9	**45.2**	**30.5**	56.1	39.6	**47.9**	**43.8**
29	BST-2019-02	63.1	28.8	27.5	28.3	**36.9**	**27.5**	48.5	47.1	**47.8**	**38.7**
31	QBP-18-14	66.3	34.3	37.0	32.1	**42.4**	**37.3**	57.3	49.0	**53.2**	**44.8**
34	QBP-18-15	74.4	47.0	48.3	37.2	**51.7**	**36.7**	50.8	48.0	**49.4**	**48.9**
36	BNSR-4	76.8	30.8	39.7	35.1	**45.6**	**33.6**	55.2	44.8	**50.0**	**45.1**
37	QBI-19 - 08	59.6	33.9	35.6	26.7	**39.0**	**31.4**	47.9	42.9	**45.4**	**39.7**
39	MP3533	54.7	43.6	32.0	34.2	**41.1**	**34.0**	52.7	44.2	**48.5**	**42.2**
42	BWL- 8879	57.0	35.4	29.8	35.2	**39.4**	**33.9**	45.4	45.7	**45.6**	**40.3**
44	GW2017-825	54.7	43.0	36.7	34.0	**42.1**	**27.2**	56.4	42.7	**49.6**	**42.1**
46	KA-1935	56.0	34.1	41.1	38.3	**42.4**	**42.2**	48.8	37.8	**43.3**	**42.6**
47	2nd HPYT429	50.2	31.6	40.8	31.1	**38.4**	**32.3**	53.9	38.8	**46.4**	**39.8**
48	QBI-19 - 11	67.4	37.5	42.1	31.2	**44.6**	**30.6**	53.0	47.6	**50.3**	**44.2**
49	GW-2018-936 (d)	46.6	51.3	44.7	45.7	**47.1**	**37.4**	51.7	46.5	**49.1**	**46.3**
51	HD3304	55.3	38.1	42.2	32.9	**42.1**	**39.2**	54.6	41.9	**48.3**	**43.5**
54	MP3520	42.8	29.1	34.7	23.1	**32.4**	**34.4**	39.9	43.0	**41.5**	**35.3**
56	GW-2018-934 (d)	45.3	44.0	54.5	30.3	**43.5**	**40.1**	52.9	47.9	**50.4**	**45.0**
57	BWL5429	55.9	32.6	35.6	24.8	**37.2**	**36.9**	53.8	41.1	**47.5**	**40.1**
58	QBI-19 - 10	67.8	33.3	31.6	31.9	**41.2**	**41.4**	55.5	47.6	**51.6**	**44.2**
60	AR-15-15	67.8	35.2	53.2	29.8	**46.5**	**39.6**	51.3	49.0	**50.2**	**46.6**
61	8th HPYT443	60.2	33.3	29.5	34.1	**39.3**	**29.1**	52.2	44.3	**48.3**	**40.4**
64	BWL-8035	62.8	32.7	41.9	30.9	**42.1**	**32.0**	54.9	47.3	**51.1**	**43.2**
68	NIAW-3889	51.6	29.1	33.2	33.0	**36.7**	**33.5**	41.2	42.9	**42.1**	**37.8**
69	BWL- 8881	61.2	28.6	38.4	33.4	**40.4**	**33.6**	41.1	44.4	**42.8**	**40.1**
71	MP3522	44.2	24.9	28.5	36.9	**33.6**	**42.2**	37.4	41.8	**39.6**	**36.6**
73	QBI-19 - 15	46.8	29.1	33.3	38.0	**36.8**	**42.0**	49.2	38.4	**43.8**	**39.5**
74	BWL- 7827	72.8	30.2	40.8	40.5	**46.1**	**41.6**	54.0	44.7	**49.4**	**46.4**
76	8th HPYT431	63.3	30.9	26.8	33.5	**38.6**	**49.6**	49.8	43.5	**46.7**	**42.5**
78	QLD-116	63.4	31.6	35.6	29.8	**40.1**	**29.8**	47.3	41.0	**44.2**	**39.8**
79	KA1821	47.5	27.1	28.0	30.1	**33.2**	**36.1**	42.9	40.3	**41.6**	**36.0**
80	QBI-19 - 09	72.2	31.5	58.1	49.4	**52.8**	**34.5**	54.7	45.2	**50.0**	**49.4**
		57.3	**34.4**	**36.8**	**35.1**	**40.9**	**34.6**	**50.3**	**44.2**	**47.3**	**41.8**

SUMMARY

India is the IInd largest producer of wheat in the world. This could be made possible by developing high yielding, disease resistant wheat varieties and also matching production technologies. The increase in domestic demand of baked & pasta products and economic liberalization & global trade have offered opportunities for better utilization of wheat. Wheat quality needs uppermost attention to meet the trade requirements of the domestic and international markets. The report includes aspects like identification of product specific genotypes. Promising genotypes showing superiority in various quality traits including Iron and Zinc content have been identified. Zone wise variability in wheat quality and grain nutrition parameters has been recorded. During 2019-20, 124 AVTs, 244 NIVTs, 52 QCWBN, 25 CI-HYT, 16 IVT, 14 HYPT and 7 dicoccum QCSN entries were analysed from different centres representing all the zones and growing conditions. Details are given below.

AVT's:

All the second year AVT entries including checks were subjected to baking evaluation for chapati, bread, biscuit, pasta and gluten content. All AVTs were analyzed for several physico - chemical properties such as grain appearance, hectolitre weight, protein content, sedimentation value, yellow pigment, phenol test, grain hardness index, wet / dry gluten and gluten index, iron and zinc content and HMWGS composition. Promising product specific entries identified are given below.

Promising *T. aestivum g*enotypes for chapati (Score ~ 7.9)

Category	Genotypes
Check	HD2967 (NWPZ-HYPT)
AVT-IInd year	DBW303* (NWPZ-HYPT), HI1634* (CZ-IR-LS**)**

Promising *T. aestivum g*enotypes for bread (Loaf volume ≥ 600 ml)

Category	Genotypes
Check	HD3059 (NWPZ-IR-LS), DBW173 (NWPZ-IR-LS), WH1124 (NWPZ-IR-LS)
AVT-IInd year	HD3298* (NWPZ-IR-LS)

Promising *T. aestivum g*enotypes for Biscuit (SF ~10.0)

Category	Genotypes
Check	NIL
AVT- IInd year	NIL

Promising *T. durum g*enotypes for Pasta (over acceptability >6.5/9)

Category	Genotypes
Check	UAS446(d) (C) (PZ RITS)
AVT- IInd year	DDW48(d)^{Q}* (PZ-ITS)

Promising Genotypes for Various Quality Parameters in AVTs

Parameter	Value	Genotypes
(*T. aestivum*)		
Protein	≥12.5%	**NHZ** : NIL **NWPZ**: DBW291, PBW813 **NEPZ:** PBW804, HD2888, DBW252 **CZ** : NIL **PZ** : MACS6222, HI1633*, HD3090, RAJ4083, GW519, HI1641, HI1642, MACS6752
Sedimentation value	> 65 ml	**NHZ** : UP3069 **NWPZ** : HD3059, WH1021 **NEPZ** : HD3249, PBW804, K1317, HI1612 **CZ** : NIL **PZ:** HI1605
Hardness Index	< 35	**NHZ** : HS490 **NWPZ** : NIAW3170, DBW296 **NEPZ:** PBW804 **PZ:** NIAW3170
Iron	≥40ppm	**NHZ** : NIL **NWPZ :** DBW187, WH1105, PBW840^{M}, PBW803, PBW813 **NEPZ** : K1006, HD3249, HD2888 **CZ** : HD3377^{B}, RAJ4541^{B} **PZ** : MACS6222, HI1633*, HI1641, HI1642, MACS6752, HI1605, MP1358,
Zinc	≥40ppm	**NHZ** : NIL **NWPZ** : HD2967, PBW550, PBW840^{M}, PBW771(I), PBW813 **NEPZ** : K1006, HD2888, DBW252 (I) **CZ** : GW322, HI1636, MACS6747, HI1637, RAJ4541^{B} **PZ** : MACS6222, HI1633*, HD3090, HI1641, HI1642, MACS6752
(*T. durum*)		
Protein	>13.0%	**CZ** : NIL **PZ** : NIL
Sedimentation value	≥ 40ml	**CZ :** UAS466(d)(I), DDW47(d)(I) **PZ :** DDW48(d)^{Q}*, DDW49(d)^{Q}*, UAS428(d) , MACS3949(d) , UAS446(d) , AKDW 2997-16(d) , HI8805(d)(I) ,
Yellow Pigment	>7.0ppm	**CZ :** DDW47(d)(I) **PZ:** WHD964(d)
Iron	≥ 40ppm	**CZ :** NIL **PZ :** AKDW997-16(d), MACS4087(d), MPO1357(d)^{Q}
Zinc	≥ 40ppm	**CZ :** NIL **PZ :** DDW49(d), UAS428(d), HI8805(d)(I), MACS 4087(d), MPO 1357(d)^{Q}

Variability in the quality parameters of *T. aestivum* in AVT's

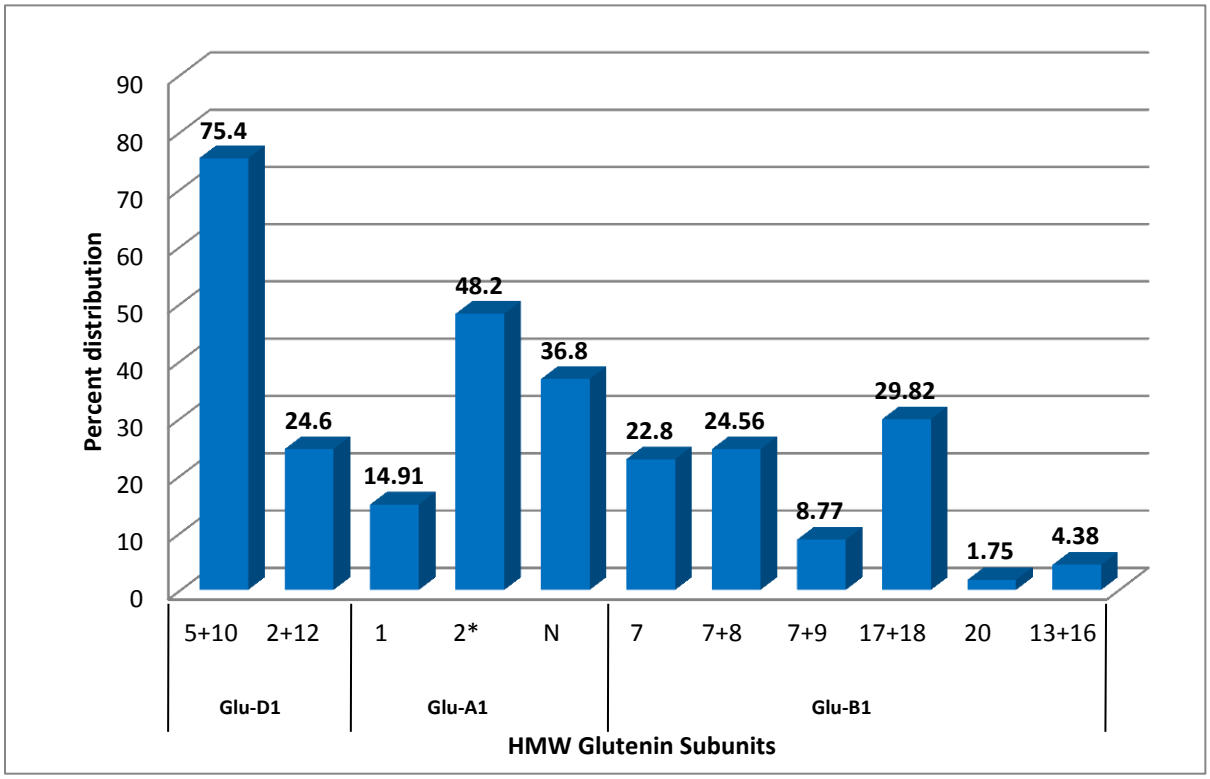
Parameter	NWPZ	NEPZ	CZ	PZ	NHZ	Overall
GAS (Max. 10.0)	5.9 (5.1-6.3)	5.75 (5.5-6.1)	6.66 (6.2-7.0)	6.03 (5.7-6.3)	5.66 (5.3-6.1)	**6.0 (5.1-7.0)**
Hectolitre Weight (kg/hl)	77.9 (73.8-79.8)	75.2 (72.8-76.8)	81.41 (79.0-84.2)	79.26 (76.8-81.5)	78.3 (74.5-81.0)	**78.41 (72.8-84.2)**
Protein content (%)	11.6 (11.0-12.8)	11.95 (11.0-12.7)	11.4 (9.9-12.2)	12.16 (11.3-13.5)	9.1 (8.0-10.1)	**11.24 (8.0-13.5)**
Sedimentation value (ml)	59 (44-70)	62 (49-71)	57 (44-64)	56 (48-68)	51 (36-66)	**57 (36-71)**
Grain hardness index	75 (26-93)	69 (30-84)	74 (51-87)	72 (33-94)	71 (14-89)	**72 (14-94)**
Iron (ppm)	38.46 (35.0-41.9	38.5 (34.9-41.2)	38.03 (34.9-40.0)	39.83 (36.3-42.8)	33.43 (30.6-38.5)	**37.65 (30.6-42.8)**
Zinc (ppm)	35.93 (31.1-42.4)	37.8 (30.6-43.9)	36.36 (31.8-45.4)	38.16 (34.6-42.8)	31.33 (25.4-39.3)	**35.91 (25.4-45.4)**
Wet gluten (%)	30.2 (29.3-32.1)	30.9 (27.2-33.4)	29.8 (27.6-33.0)	33.9 (32.7-34.4)	-	**31.2 (27.2-34.4)**
Dry gluten (%)	9.8 (9.3-10.4)	9.8 (8.7-10.5)	9.3 (8.6-10.1)	10.6 (10.4-10.9)	-	**9.86 (8.6-10.9)**
Gluten Index (%)	72 (49-91)	69 (59-91)	71 (56-83)	69 (58-81)	-	**70 (49-91)**

Variability in the quality parameters of *T. durum* in AVT's

Parameter	CZ	PZ	Overall
Grain Appearance score (Max. 10.0)	6.7 (6.5-7.0)	6.55 (5.9-7.11)	**6.63 (5.9-7.11)**
Hectolitre Weight (kg/hl)	81.3 (80.3-83.7)	81.55 (78.0-83.1)	**81.43 (78.0-83.7)**
Protein content (%)	11.9 (10.6-12.7)	11.8 (10.8-12.4)	**11.85 (10.6-12.7)**
Sedimentation value (ml)	40 (35-46)	46 (34-56)	**43 (34-56)**
Grain hardness index	89 (80-94)	96 (88-105)	**93 (80-105)**
Iron (ppm)	38.4 (35.7-39.6)	39.05 (37.1-40.8)	**38.73 (35.7-40.8)**
Zinc (ppm)	35.7 (33.6-38.2)	39.21 (37.6-41.6)	**37.46 (33.6-41.6)**
Yellow pigment (ppm)	6.17 (5.24-7.25)	5.02 (2.92-8.22)	**5.56 (2.92-8.22)**

Distribution of HMW glutenin subunits in different trials

One hundred and nine (114) AVT, IVT and special trial entries including checks were evaluated for High Molecular Weight Glutenin subunits (HMWs) encoded by Glu-A1, Glu-B1 and Glu-D1 loci. Subunits 5+10 and 2+12 were present in 75.4 % and 24.6 % of the total entries, whereas entries having 1, 2* and N subunits were 14.9 %, 48.2 % and 36.8 %, respectively. Entries with subunits 7, 7+8, 7+9, 17+18, 20 and 13+16 were 22.8, 24.56, 8.77, 29.82, 1.75 and 4.38 % respectively.



Average values of different quality parameters in NIVT Trials

T. aestivum

Trial	Zone	Condition	Grain Appearance Score (Max 10)	Hectolitre Weight (Kg/hl)	Protein (%)	Sedimentation value (ml)	Phenol test (Max 10)
NIVT 1A	NWPZ	IR-TS	5.8	77.2	12.1	51	5.0
NIVT 1A	NEPZ	IR-TS	5.6	74.3	11.7	51	4.7
NIVT 1A	Overall	IR-TS	5.7	75.9	11.9	51	4.9
NIVT 1B	NWPZ	IR-TS	5.8	76.4	11.4	52	5.7
NIVT 1B	NEPZ	IR-TS	5.9	72.9	11.1	51	5.8
NIVT 1B	Overall	IR-TS	5.9	74.9	11.4	52	5.7
NIVT 2	CZ	IR-TS	6.7	79.0	11.1	40	5.7
NIVT 2	PZ	IR-TS	6.7	78.6	12.2	43	5.6
NIVT 2	Overall	IR-TS	6.7	78.9	11.5	41	5.7
NIVT 3A	NWPZ	IR-LS	5.5	76.0	12.1	55	6.5
NIVT 3A	NEPZ	IR-LS	4.7	71.0	13.2	54	6.5
NIVT 3A	Overall	IR-LS	5.1	73.5	12.6	54	6.5
NIVT 3B	CZ	IR-LS	6.1	78.6	10.8	50	-
NIVT 3B	PZ	IR-LS	5.9	77.6	8.2	62	-
NIVT 3B	Overall	IR-LS	6.0	78.1	9.5	56	-
NIVT 5A	NWPZ	RI-TS	5.6	77.5	11.6	51	6.7
NIVT 5A	NEPZ	RI-TS	5.5	74.4	11.1	48	6.5
NIVT 5A	Overall	RI-TS	5.6	75.9	11.3	49	6.6
NIVT 5B	CZ	RI-TS	7.1	81.3	11.5	50	-
NIVT 5B	PZ	RI-TS	7.5	81.0	12.0	58	-
NIVT 5B	Overall	RI-TS	7.3	81.1	11.7	54	-
IVT		RTS	5.5	77.7	9.5	55	6.8

T. durum

Trial	Zone	Condition	GAS (Max 10)	Hectolitre Weight (kg/hl)	Protein (%)	Sed. value (ml)	Yellow Berry (%)	Yellow Pigment (ppm)
NIVT 4	CZ	IR-TS	6.2	79.4	10.8	41	3.9	5.1
NIVT 4	PZ	IR-TS	5.8	79.1	8.9	37	2.7	4.9
NIVT 4	Overall	IR-TS	6.0	79.2	9.9	39	3.3	5.0
NIVT 5B	CZ	RI-TS	7.3	81.1	11.3	41	17.9	6.13
NIVT 5B	PZ	RI-TS	7.8	81.5	12.0	37	12.9	6.26
NIVT 5B	Overall	RI-TS	7.5	81.3	11.7	39	15.4	6.19

Average values of different quality parameters in Special Trials

HYPT Trial

Zone	GAS (Max 10)	Hectolitre Weight (kg/hl)	Protein (%)	Sedimentation value (ml)	Hardness Index	Phenol test (Max 10)	Iron Content (ppm)	Zinc Content (ppm)
NWPZ	5.9	79.1	12.1	64	74	6.6	39.9	37.5

T. dicoccum **Trial**

Zone	Thousand Grain weight (g)	Protein Content (%)	Sedimentation Value (ml)	Yellow Pigment (ppm)
PZ	39.27	13.67	27	3.53

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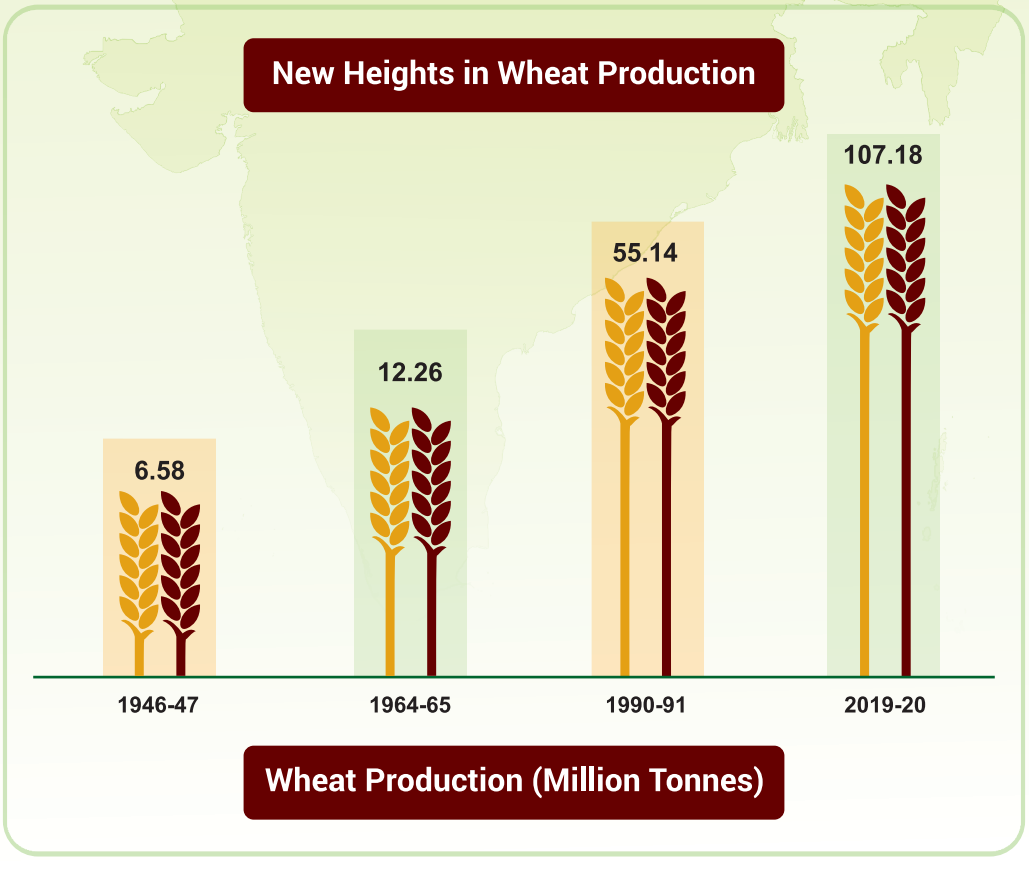

59th All India Wheat & Barley Research Workers' Meet
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