प्रगति प्रतिवेदन
PROGRESS REPORT
2022-23

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

For official use only

All India Coordinated Research Project on Wheat & Barley

PROGRESS REPORT
2022-23

WHEAT QUALITY

Sewa Ram
Sunil Kumar
O.P. Gupta
Vanita Pandey
Anuj Kumar
Gyanendra Singh

ICAR- INDIAN INSTITUTE OF WHEAT & BARLEY RESEARCH
P.O. BOX - 158, AGRASAIN MARG, KARNAL – 132001
Haryana, India

Correct Citation:

ICAR-IIWBR 2023. Progress Report of All India Coordinated Research Project on Wheat and Barley 2022-23, Wheat Quality. Eds: Sewa Ram, Sunil Kumar, O.P. Gupta, Vanita Pandey, Anuj Kumar and Gyanendra Singh. ICAR-Indian Institute of Wheat and Barley Research, Karnal, Haryana, India. P-138.

Issued on the occasion of 62nd All India Wheat & Barley Research Workers' Meet held at MPUA&T, Udaipur during August 28-30, 2023.

Acknowledgements

I wish to express my deep sense of gratitude to Dr. Gyanendra Singh, Director, ICAR-IIWBR, Karnal for his encouragement, support and guidance in coordinating wheat quality research under AICRP on Wheat and Barley.

The Indian Institute of Wheat & Barley Research, Karnal is highly thankful to all the co-operators who supplied the grain samples of AICRP trials in time. All concerned scientist at AICRP centres who were involved in analysing NIVT and special trial on Dicoccum, are acknowledged. My sincere thanks are due to Dr. S. K. Singh and Dr. Arvind Ahlawat, ICAR-IARI, New Delhi for analysing wheat samples for Grain Hardness Index.

Thanks are due to Dr. Sunil Kumar, Dr. O.P. Gupta, Dr. Vanita Pandey and Dr. Anuj Kumar for helping in quality evaluation for various traits and report writing.

The help rendered by the technical staff namely Ms. Sunita Jaswal, and Mr. Vijay Singh in samples preparation and in evaluating physical, chemical, rheological and baking parameters is greatly appreciated.

Help rendered by Sh. Deshraj (SSS) for assisting in grain handling is acknowledged.

Help rendered by Dr. Vipin Kumar Malik (YP-II), Mr. Ankush (SRF) and Dr. Mohit Sirohi (SRF), Mr. Abhishek Kumar (YP-I), Mr. Atish Verma (Field worker) and Ms. Pooja Verma (YP-II) for grain handling and recording data is highly appreciated.

Thanks are also due to the officers and staff of the Administration, Finance and farm section for their cooperation and support to the Wheat Quality Programme.

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: 4st August, 2023

(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	RFTS	9	-
Shimla	NHZ	RFTS	9	-
Malan	NHZ	RFTS	9	-
Ludhiana	NWPZ	ITS, ILS, RITS	32	-
Hisar	NWPZ	ITS, ILS, RITS	32	-
Delhi	NWPZ	ITS, ILS, RITS	32	-
Pantnagar	NWPZ	ITS, ILS, RITS	32	-
Karnal	NWPZ	ITS, ILS, RITS	32	-
Durgapura	NWPZ	ITS, ILS, RITS	32	-
Kanpur	NEPZ	ITS, RITS	16	-
Pusa	NEPZ	ITS, RITS	16	-
Sabour	NEPZ	ITS, RITS	16	-
Varanasi	NEPZ	ITS, RITS	16	-
Vijapur	CZ	ITS, ILS, RITS	28	-
Junagarh	CZ	ITS, ILS, RITS	28	-
Powarkheda	CZ	ITS, ILS, RITS	28	-
Indore	CZ	ITS, ILS, RITS	28	-
Pune	PZ	ITS, ILS, RITS	51	10
Dharwad	PZ	ITS, ILS, RITS	51	10
Niphad	PZ	ITS, ILS, RITS	51	10

Number of entries evaluated in Special Trials

Number of entries evaluated under HYPT

Station	Zone	Condition	*T. aestivum*
Ludhiana	NWPZ	IR-ES	7
Hisar	NWPZ	IR-ES	7
Delhi	NWPZ	IR-ES	7
Karnal	NWPZ	IR-ES	7
Vijapur	CZ	IR-ES	6
Junagarh	CZ	IR-ES	6
Powarkheda	CZ	IR-ES	6
Indore	CZ	IR-ES	6

Number of entries evaluated in National Initial Varietal Trials

Trial	Condition	Entries	Zone	Stations
NIVT 1A	ITS	36	NWPZ	Ludhiana, Delhi, Hisar, Pantnagar, Karnal, Durgapura
			NEPZ	Varanasi , Kanpur
NIVT 1B	ITS	36	NWPZ	Ludhiana, Delhi, Hisar, Karnal, Durgapura
			NEPZ	Sabour, Kanpur, Varanasi
NIVT 2	ITS	36	CZ	Indore, Vijapur, Junagarh, Powarkheda
			PZ	Pune, Niphad, Dharwad
NIVT 3A	ILS	36	NWPZ	Ludhiana, Hisar, Pantanagar, Delhi
			NEPZ	Sabour, Varanasi, Kanpur, Samastipur
NIVT 3B	ILS	25	CZ	Indore, Vijapur, Junagarh, Powarkheda
			PZ	Pune, Niphad, Dharwad
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, Sabour, Varanasi, Samastipur
NIVT 5B	RITS	25	CZ	P'Kheda, Indore, Vijapur, Junagarh
			PZ	Niphad, Pune, Dharwad
NIVT6	IR-ES	36	NWPZ	Ludhiana, Delhi, Hisar, Karnal
			CZ	P'Kheda, Indore, Vijapur, Junagarh
IVT	RFTS	26	NHZ	Almora, Shimla, Malan

CONTENTS

ADVANCE VARIETAL TRIALS

I. Grain Appearance

II. Hectolitre Weight

III. Protein Content

IV. Sedimentation Value

V. Grain Hardness Index

VI. Phenol Test

VII. Yellow Pigment Content

VIII. Fe and Zn content

IX. High Molecular Weight Glutenin Subunits

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. One centre from each trial was used for measuring grain hardness index.

- The *T. aestivum* entries were tested under Rainfed Timely Sown (RF-TS) 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 (IR-TS), Irrigated Late Sown (IR-LS) and Restricted Irrigated Timely Sown (RI-TS) conditions and the data is given in tables 9-16.
- The trial was conducted under three conditions namely Irrigated Timely Sown (IR-TS), - and Restricted Irrigated Timely Sown (RI-TS) 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 (IR-TS), Irrigated Late Sown (IR-LS) and Restricted Irrigated Timely Sown (RI-TS) conditions in Central Zone and the data is given in tables 25-32.
- In Peninsular Zone,the T. aestivum and T. durum entries were tested under Irrigated Timely Sown (IR-TS), Irrigated Late Sown (IR-LS) and Restricted Irrigated Timely Sown (RI-TS) conditions and the data is given in tables 33-42.
- IInd year AVT and special trial (HYPT 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 43-49.

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
Rainfed Timely Sown						
1	VL907 (C)	101	5.6	5.8	5.6	**5.7**
2	VL2041(I) (C)	102	6.0	6.2	5.8	**6.0**
3	HPW349 (C)	105	5.6	5.6	5.4	**5.5**
4	VL892 (C)	107	6.0	6.0	5.8	**5.9**
5	HS562 (C)	109	5.8	6.2	6.0	**6.0**
6	VL3028	103	5.2	5.8	5.8	**5.6**
7	HPW484	104	5.6	5.8	6.4	**5.9**
8	HS691	106	6.0	6.4	6.2	**6.2**
9	HS692	108	5.6	6.4	6.0	**6.0**
Mean			**5.7**	**6.0**	**5.9**	**5.9**

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

S. No.	Entries	Code	Almora	Shimla	Malan	Mean
Rainfed Timely Sown						
1	VL907 (C)	101	76.6	81.8	73.7	**77.4**
2	VL2041(I) (C)	102	77.6	79.3	77.2	**78.0**
3	HPW349 (C)	105	77.2	82.3	74.0	**77.8**
4	VL892 (C)	107	75.9	80.8	75.1	**77.3**
5	HS562 (C)	109	75.8	80.9	78.1	**78.3**
6	VL3028	103	72.2	80.5	73.0	**75.2**
7	HPW484	104	73.4	79.1	75.0	**75.8**
8	HS691	106	78.6	80.9	77.9	**79.1**
9	HS692	108	76.1	81.7	75.4	**77.7**
Mean			**75.9**	**80.8**	**75.5**	**77.4**

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
Rainfed Timely Sown						
1	VL907 (C)	101	11.9	9.1	12.4	**11.1**
2	VL2041(I) (C)	102	11.3	7.7	10.3	**9.7**
3	HPW349 (C)	105	12.1	9.4	11.1	**10.9**
4	VL892 (C)	107	12.7	9.8	11.7	**11.4**
5	HS562 (C)	109	11.9	8.6	10.9	**10.5**
6	VL3028	103	11.6	9.5	11.1	**10.7**
7	HPW484	104	11.1	8.6	10.9	**10.2**
8	HS691	106	11.7	9.8	11.0	**10.8**
	HS692	108	13.2	10.5	12.0	**11.9**
Mean			**11.9**	**9.2**	**11.3**	**10.8**

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

S. No.	Entries	Code	Almora	Shimla	Malan	Mean
Rainfed Timely Sown						
1	VL907 (C)	101	38	35	50	**41**
2	VL2041(I) (C)	102	51	36	54	**47**
3	HPW349 (C)	105	57	45	67	**56**
4	VL892 (C)	107	40	34	43	**39**
5	HS562 (C)	109	42	42	55	**47**
6	VL3028	103	42	39	53	**44**
7	HPW484	104	48	34	53	**45**
8	HS691	106	44	39	46	**43**
9	HS692	108	40	38	43	**40**
Mean			**45**	**38**	**52**	**45**

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

S. No.	Entries	Code	Almora	Shimla	Malan	Mean
Rainfed Timely Sown						
1	VL907 (C)	101	7.5	5.0	7.0	**6.5**
2	VL2041(I) (C)	102	3.0	3.0	3.0	**3.0**
3	HPW349 (C)	105	4.5	5.0	5.0	**4.8**
4	VL892 (C)	107	4.0	5.5	6.0	**5.2**
5	HS562 (C)	109	7.0	5.0	7.0	**6.3**
6	VL3028	103	4.0	4.5	4.0	**4.2**
7	HPW484	104	3.0	3.5	3.5	**3.3**
8	HS691	106	5.5	4.5	5.0	**5.0**
9	HS692	108	2.5	3.5	2.0	**2.7**
Mean			**4.6**	**4.4**	**4.7**	**4.6**

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

S. No.	Entries	Code	Almora	Shimla	Malan	Mean
Rainfed Timely Sown						
1	VL907 (C)	101		69.9		**69.9**
2	VL2041(I) (C)	102		27.7		**27.7**
3	HPW349 (C)	105		70.5		**70.5**
4	VL892 (C)	107		73.4		**73.4**
5	HS562 (C)	109		78.2		**78.2**
6	VL3028	103		59.4		**59.4**
7	HPW484	104		57.0		**57.0**
8	HS691	106		83.6		**83.6**
9	HS692	108		67.3		**67.3**
Mean				**65.2**		**65.2**

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

S. No.	Entries	Code	Almora	Shimla	Malan	Mean
Rainfed Timely Sown						
1	VL907 (C)	101	41.8	37.6	35.6	**38.3**
2	VL2041(I) (C)	102	39.7	38.2	40.1	**39.3**
3	HPW349 (C)	105	34.5	35.1	36.3	**35.3**
4	VL892 (C)	107	39.6	42.2	39.9	**40.6**
5	HS562 (C)	109	35.9	37.1	39.2	**37.4**
6	VL3028	103	42.8	40.2	40.9	**41.3**
7	HPW484	104	42.9	38.9	41.8	**41.2**
8	HS691	106	42.5	38.2	45	**41.9**
9	HS692	108	39.9	39.8	42.5	**40.7**
Mean			**40.0**	**38.6**	**40.1**	**39.6**

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

S. No.	Entries	Code	Almora	Shimla	Malan	Mean
Rainfed Timely Sown						
1	VL907 (C)	101	39.9	39.1	27.8	**35.6**
2	VL2041(I) (C)	102	41.4	34.4	25.1	**33.6**
3	HPW349 (C)	105	37.3	37.1	23.0	**32.5**
4	VL892 (C)	107	45.8	39.2	33.3	**39.4**
5	HS562 (C)	109	36.9	31.7	26.4	**31.7**
6	VL3028	103	41.0	39.2	23.9	**34.7**
7	HPW484	104	35.6	32.3	23.8	**30.6**
8	HS691	106	42.5	41.1	32.6	**38.7**
9	HS692	108	45.7	45.1	29.8	**40.2**
Mean			**40.7**	**37.7**	**27.3**	**35.2**

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

S. No.	Entries	Code	Ludhiana	P.nagar	Delhi	Hisar	Karnal	Durgapura	Mean
Irrigated Timely Sown									
1	HD3386*	113	6.0	6.6	6.2	6.4	6.4	5.6	**6.2**
2	HD2967 (C)	103	5.6	6.6	5.0	6.2	6.0	5.6	**5.8**
3	DBW187 (C)	104	5.0	5.8	5.6	6.2	6.6	5.4	**5.8**
4	HD3086 (C)	105	5.4	6.2	5.8	6.6	6.0	5.4	**5.9**
5	PBW826(I) (C)	108	6.2	6.0	5.6	6.0	6.8	5.4	**6.0**
6	DBW222 (C)	110	5.4	6.0	5.6	6.2	6.4	5.4	**5.8**
7	HD3470	101	5.8	5.8	5.8	6.0	6.6	5.8	**6.0**
8	UP3102	102	5.4	5.6	5.2	5.4	6.2	5.4	**5.5**
9	PBW887	106	5.6	6.2	6.0	6.2	6.4	5.4	**6.0**
10	HI1668	107	5.8	6.2	6.0	6.8	7.4	5.4	**6.3**
11	DBW386	109	6.2	6.4	5.6	6.4	6.6	5.8	**6.2**
12	PBW889	111	5.6	6.4	6.0	6.6	6.2	5.8	**6.1**
13	HD3471	112	5.6	6.0	6.0	6.4	6.4	5.2	**5.9**
Mean			**5.7**	**6.1**	**5.7**	**6.3**	**6.5**	**5.5**	**6.0**
Irrigated Late Sown									
1	DBW173 (C)	201	5.6	5.4	5.6	6.0	6.0	5.8	**5.7**
2	HD3059 (C)	203	5.2	5.6	5.6	6.0	5.6	5.4	**5.6**
3	JKW261 (C)	204	5.4	5.6	5.6	5.6	5.2	5.2	**5.4**
4	PBW771 (C)	207	5.6	5.6	5.8	5.8	6.4	5.6	**5.8**
5	K2108	202	5.4	5.8	5.4	6.2	5.6	5.4	**5.6**
6	PBW893	205	5.8	5.8	5.8	5.8	6.6	5.8	**5.9**
7	HD3428	206	5.6	5.8	5.6	6.4	6.2	5.8	**5.9**
Mean			**5.5**	**5.7**	**5.6**	**6.0**	**5.9**	**5.6**	**5.7**
Restricted Irrigated Timely Sown									
1	WH1402*	305	6.0	6.4	6.0	5.6	6.2	5.8	**6.0**
2	DBW296 (C)	302	5.8	6.6	5.8	5.6	6.4	5.4	**5.9**
3	HI1654(I) (C)	306	6.4	5.8	5.6	5.4	6.6	5.6	**5.9**
4	HD3369(I) (C)	307	6.2	5.8	6.0	5.8	6.4	5.8	**6.0**
5	PBW644 (C)	308	6.2	6.0	6.0	6.0	6.4	5.4	**6.0**
6	HI1653(I) (C)	311	6.6	6.4	6.4	5.6	7.0	6.2	**6.4**
7	NIAW3170 (C)	312	6.4	6.0	5.8	5.8	6.8	5.6	**6.1**
8	UP3111	301	5.6	6.0	6.4	5.4	6.8	5.8	**6.0**
9	WH1311	303	6.4	5.8	5.6	5.6	6.6	5.4	**5.9**
10	DBW397	304	6.2	6.6	5.6	5.8	6.8	5.6	**6.1**
11	PBW899	309	5.8	5.8	6.2	5.6	6.4	5.4	**5.9**
12	DBW398	310	6.4	5.8	6.2	6.4	6.8	5.6	**6.2**
Mean			**6.2**	**6.1**	**6.0**	**5.7**	**6.6**	**5.6**	**6.0**

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

S. No.	Entries	Code	Ludhiana	P.nagar	Delhi	Hisar	Karnal	Durgapura	Mean
Irrigated Timely Sown									
1	HD3386*	113	77.0	79.2	78.2	81.6	78.1	73.1	**77.9**
2	HD2967 (C)	103	75.3	79.8	75.5	80.2	77.5	72.2	**76.8**
3	DBW187 (C)	104	72.8	76.2	75.0	80.2	78.2	71.4	**75.6**
4	HD3086 (C)	105	76.6	78.5	79.8	80.6	77.9	70.5	**77.3**
5	PBW826(I) (C)	108	75.8	80.3	79.3	80.6	79.2	72.4	**77.9**
6	DBW222 (C)	110	76.1	77.6	76.4	79.0	76.6	71.0	**76.1**
7	HD3470	101	78.5	78.8	78.6	80.7	80.3	74.9	**78.6**
8	UP3102	102	76.9	79.7	80.2	80.9	79.4	71.6	**78.1**
9	PBW887	106	75.1	77.2	78.2	79.3	79.1	71.5	**76.7**
10	HI1668	107	75.1	76.4	76.1	79.7	78.2	68.2	**75.6**
11	DBW386	109	78.4	80.1	78.8	81.2	79.4	76.4	**79.1**
12	PBW889	111	76.9	78.3	77.6	81.8	80.0	75.0	**78.3**
13	HD3471	112	74.9	76.9	76.3	79.6	76.5	70.3	**75.8**
Mean			**76.1**	**78.4**	**77.7**	**80.4**	**78.5**	**72.2**	**77.2**
Irrigated Late Sown									
1	DBW173 (C)	201	73.3	70.9	71.2	79.9	72.9	75.2	**73.9**
2	HD3059 (C)	203	73.0	71.3	71.8	80.7	74.0	74.5	**74.2**
3	JKW261 (C)	204	73.6	71.1	72.7	79.5	69.9	74.4	**73.5**
4	PBW771 (C)	207	73.7	68.0	74.3	80.1	75.5	74.0	**74.3**
5	K2108	202	74.5	72.0	72.0	79.3	73.0	70.2	**73.5**
6	PBW893	205	78.2	73.5	76.5	82.1	77.7	79.3	**77.9**
7	HD3428	206	76.4	72.1	72.9	82.0	74.3	76.9	**75.8**
Mean			**74.7**	**71.3**	**73.1**	**80.5**	**73.9**	**74.9**	**74.7**
Restricted Irrigated Timely Sown									
1	WH1402*	305	76.9	78.9	76.3	81.7	80.2	71.9	**77.7**
2	DBW296 (C)	302	77.6	78.5	74.6	79.4	79.0	68.4	**76.3**
3	HI1654(I) (C)	306	78.0	79.2	73.5	80.1	79.8	73.5	**77.4**
4	HD3369(I) (C)	307	78.9	77.9	75.7	79.4	79.5	72.0	**77.2**
5	PBW644 (C)	308	76.8	78.4	74.6	79.6	78.6	68.8	**76.1**
6	HI1653(I) (C)	311	77.1	75.9	74.1	78.8	77.7	72.0	**75.9**
7	NIAW3170 (C)	312	73.6	75.4	71.5	78.0	76.1	68.0	**73.8**
8	UP3111	301	76.2	76.3	74.3	77.7	77.5	70.8	**75.5**
9	WH1311	303	76.5	77.3	73.1	79.5	78.2	71.8	**76.1**
10	DBW397	304	78.5	79.1	75.3	80.7	78.9	71.5	**77.3**
11	PBW899	309	75.5	78.4	74.2	78.0	77.4	67.2	**75.1**
12	DBW398	310	72.7	75.2	71.0	77.2	76.2	66.0	**73.1**
Mean			**76.5**	**77.5**	**74.0**	**79.2**	**78.3**	**70.2**	**75.9**

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

S. No.	Entries	Code	Ludhiana	P.nagar	Delhi	Hisar	Karnal	Durgapura	Mean
Irrigated Timely Sown									
1	HD3386*	113	11.7	10.9	12.6	9.1	11.4	11.7	**11.2**
2	HD2967 (C)	103	12.1	11.3	13.7	8.7	12.5	11.7	**11.6**
3	DBW187 (C)	104	12.4	12.5	13.5	9.2	11.3	12.0	**11.8**
4	HD3086 (C)	105	12.9	12.0	13.8	9.7	12.2	13.1	**12.3**
5	PBW826(I) (C)	108	10.4	10.1	12.4	8.5	10.6	13.4	**10.9**
6	DBW222 (C)	110	11.2	10.6	12.5	9.3	10.8	12.6	**11.1**
7	HD3470	101	11.9	11.5	12.6	9.4	10.7	11.9	**11.3**
8	UP3102	102	12.3	11.1	13.1	8.8	11.5	12.7	**11.6**
9	PBW887	106	12.6	11.6	14.0	7.7	11.6	13.0	**11.7**
10	HI1668	107	11.7	10.1	13.4	8.8	11.2	13.9	**11.5**
11	DBW386	109	10.9	10.2	12.5	8.1	11.6	11.7	**10.8**
12	PBW889	111	12.3	11.6	13.5	10.3	12.0	12.3	**12.0**
13	HD3471	112	11.8	10.3	13.5	8.9	11.9	13.0	**11.6**
Mean			**11.9**	**11.1**	**13.2**	**9.0**	**11.5**	**12.5**	**11.5**
Irrigated Late Sown									
1	DBW173 (C)	201	12.0	12.9	13.3	11.4	13.3	15.2	**13.0**
2	HD3059 (C)	203	12.5	12.2	13.2	11.5	12.9	15.3	**13.0**
3	JKW261 (C)	204	10.3	11.5	12.2	9.8	11.8	13.9	**11.6**
4	PBW771 (C)	207	11.6	11.1	13.5	12.1	12.4	15.7	**12.7**
5	K2108	202	12.0	11.7	13.7	11.1	13.2	16.3	**13.0**
6	PBW893	205	12.0	13.5	14.6	12.5	13.6	16.3	**14.0**
7	HD3428	206	12.3	11.5	13.9	11.3	12.9	14.9	**12.8**
Mean			**11.8**	**12.0**	**13.7**	**11.4**	**12.9**	**15.4**	**12.9**
Restricted Irrigated Timely Sown									
1	WH1402*	305	11.3	11.6	12.2	8.3	10.4	13.9	**11.3**
2	DBW296 (C)	302	11.6	10.9	11.7	9.3	10.5	13.6	**11.3**
3	HI1654(I) (C)	306	11.5	10.3	13.9	9.9	10.0	13.1	**11.5**
4	HD3369(I) (C)	307	11.7	10.5	13.1	9.3	10.1	13.0	**11.3**
5	PBW644 (C)	308	11.1	10.3	11.7	8.7	10.0	13.9	**10.9**
6	HI1653(I) (C)	311	11.5	11.9	12.3	9.2	10.8	13.1	**11.4**
7	NIAW3170 (C)	312	12.1	11.3	12.7	10.4	11.0	13.2	**11.8**
8	UP3111	301	11.2	10.8	10.6	9.4	10.4	12.3	**10.8**
9	WH1311	303	11.3	11.1	12.5	8.5	10.2	12.6	**11.0**
10	DBW397	304	12.3	11.5	13.3	9.4	11.3	14.5	**12.1**
11	PBW899	309	11.6	12.4	11.8	9.3	10.5	15.0	**11.8**
12	DBW398	310	11.7	11.0	12.2	9.0	9.9	13.8	**11.3**
Mean			**11.6**	**11.1**	**12.3**	**9.2**	**10.4**	**13.5**	**11.4**

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

S. No.	Entries	Code	Ludhiana	P.nagar	Delhi	Hisar	Karnal	Durgapura	Mean
Irrigated Timely Sown									
1	HD3386*	113	53	61	64	50	58	65	**59**
2	HD2967 (C)	103	62	64	63	48	67	60	**61**
3	DBW187 (C)	104	72	74	73	53	73	71	**69**
4	HD3086 (C)	105	70	67	65	50	71	69	**65**
5	PBW826(I) (C)	108	52	60	69	50	56	70	**60**
6	DBW222 (C)	110	57	60	69	56	60	67	**61**
7	HD3470	101	65	62	68	47	62	60	**61**
8	UP3102	102	67	67	71	48	60	58	**62**
9	PBW887	106	67	70	69	46	71	70	**65**
10	HI1668	107	64	63	73	56	71	64	**65**
11	DBW386	109	53	54	71	49	65	60	**59**
12	PBW889	111	63	59	69	51	68	67	**63**
13	HD3471	112	70	61	71	59	68	67	**66**
Mean			**63**	**63**	**69**	**51**	**65**	**65**	**63**
Irrigated Late Sown									
1	DBW173 (C)	201	65	70	69	66	67	61	**66**
2	HD3059 (C)	203	61	63	65	67	66	68	**65**
3	JKW261 (C)	204	47	55	55	50	55	57	**53**
4	PBW771 (C)	207	38	37	39	42	38	46	**40**
5	K2108	202	58	66	65	60	66	59	**62**
6	PBW893	205	60	65	57	59	60	55	**59**
7	HD3428	206	55	52	63	57	65	65	**59**
Mean			**55**	**58**	**59**	**57**	**60**	**59**	**58**
Restricted Irrigated Timely Sown									
1	WH1402*	305	63	69	73	54	66	71	**66**
2	DBW296 (C)	302	55	53	57	52	53	70	**57**
3	HI1654(I) (C)	306	67	55	73	52	52	71	**61**
4	HD3369(I) (C)	307	73	67	73	63	70	72	**70**
5	PBW644 (C)	308	55	49	67	46	47	64	**55**
6	HI1653(I) (C)	311	71	67	73	57	58	73	**67**
7	NIAW3170 (C)	312	54	49	60	55	48	72	**56**
8	UP3111	301	52	53	57	48	57	67	**56**
9	WH1311	303	69	60	70	44	62	68	**62**
10	DBW397	304	67	58	70	51	63	68	**63**
11	PBW899	309	50	45	61	48	47	58	**51**
12	DBW398	310	64	52	71	54	50	67	**60**
Mean			**62**	**56**	**67**	**52**	**56**	**68**	**60**

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

S. No.	Entries	Code	Ludhiana	P.nagar	Delhi	Hisar	Karnal	Durgapura	Mean
Irrigated Timely Sown									
1	HD3386*	113	6.5	6.0	6.5	6.0	6.0	6.5	**6.3**
2	HD2967 (C)	103	5.5	7.0	6.0	5.5	5.0	6.5	**5.9**
3	DBW187 (C)	104	7.5	7.5	7.5	7.5	7.0	9.0	**7.7**
4	HD3086 (C)	105	7.0	7.0	6.5	7.0	6.5	8.0	**7.0**
5	PBW826(I) (C)	108	7.5	7.5	7.0	6.0	6.5	9.0	**7.3**
6	DBW222 (C)	110	8.0	6.5	6.5	5.5	6.0	7.5	**6.7**
7	HD3470	101	6.5	7.5	7.0	6.5	6.0	7.5	**6.8**
8	UP3102	102	6.5	8.0	7.5	6.0	6.5	6.5	**6.8**
9	PBW887	106	7.0	7.5	7.0	7.5	7.0	7.0	**7.2**
10	HI1668	107	7.5	7.0	7.0	7.0	6.5	8.5	**7.3**
11	DBW386	109	7.0	7.0	6.5	6.5	6.0	7.0	**6.7**
12	PBW889	111	4.0	5.0	4.5	3.5	4.5	7.0	**4.8**
13	HD3471	112	8.0	7.5	8.0	7.5	6.0	9.0	**7.7**
Mean			**6.8**	**7.0**	**6.7**	**6.3**	**6.1**	**7.6**	**6.8**
Irrigated Late Sown									
1	DBW173 (C)	201	6.5	6.0	6.0	6.0	5.5	6.0	**6.0**
2	HD3059 (C)	203	7.0	6.5	5.5	5.5	5.5	9.0	**6.5**
3	JKW261 (C)	204	7.0	6.0	5.0	5.0	5.0	7.0	**5.8**
4	PBW771 (C)	207	6.5	6.0	5.5	5.0	5.5	7.0	**5.9**
5	K2108	202	6.0	6.0	5.5	5.0	5.0	7.0	**5.8**
6	PBW893	205	7.0	7.5	5.5	5.5	5.0	7.0	**6.3**
7	HD3428	206	6.5	6.0	5.0	5.5	5.0	5.0	**5.5**
Mean			**6.6**	**6.3**	**5.4**	**5.4**	**5.2**	**6.9**	**6.0**
Restricted Irrigated Timely Sown									
1	WH1402*	305	7.0	7.0	7.0	5.0	6.0	5.0	**6.2**
2	DBW296 (C)	302	6.0	6.0	6.0	5.5	5.0	8.0	**6.1**
3	HI1654(I) (C)	306	6.5	7.0	7.0	5.5	5.0	6.0	**6.2**
4	HD3369(I) (C)	307	5.5	6.5	6.0	5.5	6.5	7.5	**6.3**
5	PBW644 (C)	308	7.0	6.5	5.5	6.0	6.0	8.0	**6.5**
6	HI1653(I) (C)	311	7.5	8.0	8.5	6.5	6.5	8.0	**7.5**
7	NIAW3170 (C)	312	7.5	7.5	7.0	6.5	6.0	6.0	**6.8**
8	UP3111	301	6.5	7.0	8.5	6.0	5.5	7.5	**6.8**
9	WH1311	303	6.0	7.0	6.5	5.5	5.5	6.5	**6.2**
10	DBW397	304	7.5	7.5	8.0	6.0	6.0	9.0	**7.3**
11	PBW899	309	7.0	7.5	5.5	6.0	5.5	7.5	**6.5**
12	DBW398	310	4.0	5.0	3.5	3.0	4.5	3.5	**3.9**
Mean			**6.5**	**6.9**	**6.6**	**5.6**	**5.7**	**6.9**	**6.3**

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

S. No.	Entries	Code	Ludhiana	P.nagar	Delhi	Hisar	Karnal	Durgapura	Mean
Irrigated Timely Sown									
1	HD3386*	113					69		69
2	HD2967 (C)	103					81		81
3	DBW187 (C)	104					68		68
4	HD3086 (C)	105					75		75
5	PBW826(I) (C)	108					69		69
6	DBW222 (C)	110					80		80
7	HD3470	101					68		68
8	UP3102	102					79		79
9	PBW887	106					60		60
10	HI1668	107					66		66
11	DBW386	109					72		72
12	PBW889	111					66		66
13	HD3471	112					74		74
Mean							**71**		**71**
Irrigated Late Sown									
1	DBW173 (C)	201					64		64
2	HD3059 (C)	203					65		65
3	JKW261 (C)	204					66		66
4	PBW771 (C)	207					77		77
5	K2108	202					62		62
6	PBW893	205					60		60
7	HD3428	206					69		69
Mean							**66**		**66**
Restricted Irrigated Timely Sown									
1	WH1402*	305					64		64
2	DBW296 (C)	302					29		29
3	HI1654(I) (C)	306					34		34
4	HD3369(I) (C)	307					56		56
5	PBW644 (C)	308					75		75
6	HI1653(I) (C)	311					61		61
7	NIAW3170 (C)	312					29		29
8	UP3111	301					54		54
9	WH1311	303					61		61
10	DBW397	304					65		65
11	PBW899	309					69		69
12	DBW398	310					48		48
Mean							**54**		**54**

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

S. No.	Entries	Code	Ludhiana	P.nagar	Delhi	Hisar	Karnal	Durgapura	Mean
Irrigated Timely Sown									
1	HD3386*	113	36.5	42.3	61.8	33.6	33.3	39.2	**41.1**
2	HD2967 (C)	103	40.1	37.9	39.2	33	38.7	41.3	**38.4**
3	DBW187 (C)	104	38.8	37.8	42.0	30.7	35.5	41.8	**37.8**
4	HD3086 (C)	105	34.8	38.5	40.7	33.8	39.0	39.1	**37.7**
5	PBW826(I) (C)	108	36.8	36.2	43.6	33.1	33.0	40.8	**37.3**
6	DBW222 (C)	110	29.4	35.7	38.7	28.7	35.0	40.5	**34.7**
7	HD3470	101	35.3	37.9	54.4	29.5	31.3	41.7	**38.4**
8	UP3102	102	33.4	40.1	35.4	39.8	39.0	39.9	**37.9**
9	PBW887	106	40.9	39.7	45.5	31.2	42.4	37.4	**39.5**
10	HI1668	107	31.6	35.9	41.2	36.9	37.5	40.0	**37.2**
11	DBW386	109	35.8	34.0	44.1	35.9	41.1	39.8	**38.5**
12	PBW889	111	34.9	41.5	58.6	36.5	38.3	39.9	**41.6**
13	HD3471	112	40.2	38.5	50.0	30.3	35.4	41.0	**39.2**
Mean			**36.0**	**38.2**	**45.8**	**33.3**	**36.9**	**40.2**	**38.4**
Irrigated Late Sown									
1	DBW173 (C)	201	36.7	42.3	39.7	34.6	40.6	40.4	**39.1**
2	HD3059 (C)	203	31.8	35.3	38.2	36.5	36.5	43.6	**37.0**
3	JKW261 (C)	204	34.7	38.7	41.2	35.0	37.6	40.4	**37.9**
4	PBW771 (C)	207	37.1	36.9	44.0	35.3	41.8	41.7	**39.5**
5	K2108	202	30.0	45.5	49.8	36.7	35.1	41.0	**39.7**
6	PBW893	205	35.4	41.9	46.5	39.6	37.8	44.6	**41.0**
7	HD3428	206	42.5	42.3	40.2	37.4	41.4	42.1	**41.0**
Mean			**35.5**	**40.4**	**42.8**	**36.4**	**38.7**	**42.0**	**39.3**
Restricted Irrigated Timely Sown									
1	WH1402*	305	37.3	36.2	35.7	36.1	39.2	41.3	**37.6**
2	DBW296 (C)	302	37.6	45.7	40.9	33.4	40.6	47.8	**41.0**
3	HI1654(I) (C)	306	35.3	37.5	40.9	34.4	43.9	40.8	**38.8**
4	HD3369(I) (C)	307	35.9	40.0	51.5	33.8	48.4	44.2	**42.3**
5	PBW644 (C)	308	31.9	43.1	40.2	34.3	42.2	44.2	**39.3**
6	HI1653(I) (C)	311	36.8	41.0	39.4	36.8	42.0	37.3	**38.9**
7	NIAW3170 (C)	312	33.8	41.3	38.3	36.4	42.6	45.5	**39.7**
8	UP3111	301	31.8	37.3	39.6	31.7	37.3	38.5	**36.0**
9	WH1311	303	35.0	43.6	36.7	31.1	39.1	42.7	**38.0**
10	DBW397	304	41.1	39.9	35.5	34.7	45.2	47.2	**40.6**
11	PBW899	309	33.5	45.6	36.5	31.4	40.5	39.9	**37.9**
12	DBW398	310	30.6	40.8	38.1	33.8	41.9	42.7	**38.0**
Mean			**35.1**	**41.0**	**39.4**	**34.0**	**41.9**	**42.7**	**39.0**

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

S. No.	Entries	Code	Ludhiana	P.nagar	Delhi	Hisar	Karnal	Durgapura	Mean
Irrigated Timely Sown									
1	HD3386*	113	44.9	31.6	59.5	38.9	30.6	45.4	**41.8**
2	HD2967 (C)	103	44.0	35.1	58.3	35.5	36.7	47.3	**42.8**
3	DBW187 (C)	104	41.9	26.6	47.6	30.9	29.1	39.3	**35.9**
4	HD3086 (C)	105	59.0	33.4	54.2	30.9	36.0	42.1	**42.6**
5	PBW826(I) (C)	108	60.5	34.5	58.1	33.8	33.1	54.3	**45.7**
6	DBW222 (C)	110	55.2	33.5	50.8	27.9	32.5	38.1	**39.7**
7	HD3470	101	52.0	31.3	53.1	32.4	30.8	46.9	**41.1**
8	UP3102	102	56.3	34.5	46.6	35.5	34.5	42.2	**41.6**
9	PBW887	106	55.6	32.1	64.4	33.6	35.8	45.8	**44.6**
10	HI1668	107	36.1	26.4	44.1	29.5	31.7	42.2	**35.0**
11	DBW386	109	57.7	29.4	53.7	33.4	33.5	41.6	**41.6**
12	PBW889	111	55.1	37.2	61.6	36.9	42.2	51.2	**47.4**
13	HD3471	112	44.6	27.6	46.5	28.9	32.7	39.6	**36.7**
Mean			**51.0**	**31.8**	**53.7**	**32.9**	**33.8**	**44.3**	**41.3**
Irrigated Late Sown									
1	DBW173 (C)	201	71.8	31.0	49.2	36.3	34.8	49.4	**40.1**
2	HD3059 (C)	203	67.2	28.3	51.3	45.4	32.7	50.8	**41.7**
3	JKW261 (C)	204	68.3	30.0	52.7	42.1	36.1	46.8	**41.5**
4	PBW771 (C)	207	88.8	32.6	61.3	51.5	45.0	50.2	**48.1**
5	K2108	202	67.5	31.2	56.3	42.6	34.1	47.0	**42.2**
6	PBW893	205	61.4	33.4	65.0	51.5	40.3	63.1	**50.7**
7	HD3428	206	72.9	29.7	58.6	44.8	33.1	52.1	**43.7**
Mean			**71.1***	**30.9**	**56.3**	**44.9**	**36.6**	**51.3**	**44.0**
Restricted Irrigated Timely Sown									
1	WH1402*	305	25.0	33.3	54.7	38.5	32.0	43.4	**37.8**
2	DBW296 (C)	302	28.0	33.6	57.0	33.1	33.0	47.9	**38.8**
3	HI1654(I) (C)	306	23.3	27.9	59.8	34.2	30.1	42.1	**36.2**
4	HD3369(I) (C)	307	28.2	34.6	56.4	33.7	38.6	47.5	**39.8**
5	PBW644 (C)	308	21.8	35.1	67.7	35.9	30.7	54.4	**40.9**
6	HI1653(I) (C)	311	21.8	30.3	53.5	31.5	25.4	34.7	**32.9**
7	NIAW3170 (C)	312	22.7	32.4	65.8	42.5	37.5	44.5	**40.9**
8	UP3111	301	22.5	20.7	59.2	34.9	33.0	38.3	**34.8**
9	WH1311	303	24.4	35.4	65.0	35.0	35.0	41.1	**39.3**
10	DBW397	304	31.5	36.0	59.6	35.2	34.5	45.6	**40.4**
11	PBW899	309	23.3	34.0	49.6	34.2	31.4	49.6	**37.0**
12	DBW398	310	23.3	35.1	61.3	37.8	34.2	49.3	**40.2**
Mean			**24.7**	**32.4**	**59.1**	**35.5**	**33.0**	**44.9**	**38.3**

*Exceptionally high values at Ludhiana under ILS condition and hence not used in overall mean

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

S. No.	Entries	Code	Kanpur	Varanasi	Pusa	Sabour	Mean
Irrigated Timely Sown							
1	HD3388*	106	6.2	6.0	5.4	5.2	**5.7**
2	PBW826(I) (C)	102	6.6	6.2	5.8	5.4	**6.0**
3	DBW187 (C)	104	6.2	5.8	6.0	5.2	**5.8**
4	HD3086 (C)	105	6.2	5.8	6.0	5.4	**5.9**
5	DBW222 (C)	107	6.2	6.0	5.6	5.4	**5.8**
6	HD2967 (C)	109	6.0	5.2	5.6	5.4	**5.6**
7	HD3249 (C)	110	6.6	5.6	5.8	5.4	**5.9**
8	HD3471	101	6.8	5.6	5.4	5.8	**5.9**
9	HD3470	103	6.4	5.8	5.6	5.4	**5.8**
10	DBW386	108	6.0	6.0	5.8	5.6	**5.9**
Mean			**6.3**	**5.8**	**5.7**	**5.4**	**5.8**
Restricted Irrigated Timely Sown							
1	HI1612 (C)	301	5.6	5.2	6.2	5.4	**5.6**
2	HD3171 (C)	302	5.6	5.2	5.8	5.6	**5.6**
3	K1317 (C)	303	5.8	5.4	6.4	5.6	**5.8**
4	HD3293 (C)	304	6.2	5.4	5.8	5.8	**5.8**
5	DBW252 (C)	305	5.6	5.0	6.0	5.4	**5.5**
6	DBW398	306	6.0	5.0	6.0	5.4	**5.6**
Mean			**5.8**	**5.2**	**6.0**	**5.5**	**5.6**

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

S. No.	Entries	Code	Kanpur	Varanasi	Pusa	Sabour	Mean
Irrigated Timely Sown							
1	HD3388*	106	73.1	76.4	75.8	73.1	**74.6**
2	PBW826(I) (C)	102	75.6	75.8	79.4	74.0	**76.2**
3	DBW187 (C)	104	73.5	74.6	78.2	72.2	**74.6**
4	HD3086 (C)	105	73.6	76.3	79.6	71.8	**75.3**
5	DBW222 (C)	107	73.2	73.7	75.7	73.8	**74.1**
6	HD2967 (C)	109	73.2	72.9	77.1	73.1	**74.1**
7	HD3249 (C)	110	74.9	76.2	78.0	73.6	**75.7**
8	HD3471	101	75.5	75.1	76.6	74.6	**75.5**
9	HD3470	103	75.6	78.0	78.6	73.4	**76.4**
10	DBW386	108	75.2	76.4	78.4	75.2	**76.3**
Mean			**74.3**	**75.5**	**77.7**	**73.5**	**75.3**
Restricted Irrigated Timely Sown							
1	HI1612 (C)	301	76.4	70.4	80.3	74.3	**75.4**
2	HD3171 (C)	302	76.4	69.8	78.4	74.6	**74.8**
3	K1317 (C)	303	79.2	73.5	81.0	75.4	**77.3**
4	HD3293 (C)	304	74.4	70.0	78.1	73.8	**74.1**
5	DBW252 (C)	305	75.6	71.1	78.7	73.1	**74.6**
6	DBW398	306	74.2	67.1	77.5	67.1	**71.5**
Mean			**76.0**	**70.3**	**79.0**	**73.1**	**74.6**

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

S. No.	Entries	Code	Kanpur	Varanasi	Pusa	Sabour	Mean
Irrigated Timely Sown							
1	HD3388*	106	12.0	11.2	13.0	10.8	**11.7**
2	PBW826(I) (C)	102	11.8	10.6	10.8	11.0	**11.1**
3	DBW187 (C)	104	12.1	11.3	11.9	10.9	**11.6**
4	HD3086 (C)	105	10.9	11.3	11.7	10.4	**11.1**
5	DBW222 (C)	107	11.4	11.1	11.2	10.9	**11.2**
6	HD2967 (C)	109	11.7	11.2	11.7	10.9	**11.4**
7	HD3249 (C)	110	11.5	10.9	11.1	10.5	**11.0**
8	HD3471	101	11.2	11.6	11.4	10.6	**11.2**
9	HD3470	103	11.0	11.1	11.3	10.1	**10.9**
10	DBW386	108	11.3	11.4	10.5	10.1	**10.8**
Mean			**11.5**	**11.2**	**11.5**	**10.6**	**11.2**
Restricted Irrigated Timely Sown							
1	HI1612 (C)	301	11.9	12.1	11.3	10.8	**11.5**
2	HD3171 (C)	302	12.1	11.5	10.5	11.1	**11.3**
3	K1317 (C)	303	12.5	12.1	12.0	11.7	**12.1**
4	HD3293 (C)	304	11.2	11.9	11.0	10.5	**11.1**
5	DBW252 (C)	305	12.9	12.0	10.8	11.3	**11.8**
6	DBW398	306	10.8	12.2	9.5	11.1	**10.9**
Mean			**11.9**	**12.0**	**10.8**	**11.1**	**11.4**

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

S. No.	Entries	Code	Kanpur	Varanasi	Pusa	Sabour	Mean
Irrigated Timely Sown							
1	HD3388*	106	67	71	73	67	**70**
2	PBW826(I) (C)	102	60	69	69	71	**67**
3	DBW187 (C)	104	73	72	71	59	**69**
4	HD3086 (C)	105	58	68	70	63	**65**
5	DBW222 (C)	107	66	63	67	59	**64**
6	HD2967 (C)	109	62	56	68	59	**61**
7	HD3249 (C)	110	70	71	70	60	**68**
8	HD3471	101	72	68	72	63	**69**
9	HD3470	103	63	67	69	55	**63**
10	DBW386	108	58	65	63	55	**60**
Mean			**65**	**67**	**69**	**61**	**66**
Restricted Irrigated Timely Sown							
1	HI1612 (C)	301	71	67	72	63	**69**
2	HD3171 (C)	302	67	69	67	65	**67**
3	K1317 (C)	303	50	52	53	52	**52**
4	HD3293 (C)	304	48	59	52	50	**52**
5	DBW252 (C)	305	71	70	68	67	**69**
6	DBW398	306	55	60	57	59	**58**
Mean			**60**	**63**	**62**	**59**	**61**

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

S. No.	Entries	Code	Kanpur	Varanasi	Pusa	Sabour	Mean
Irrigated Timely Sown							
1	HD3388*	106	7.5	8.5	6.0	5.0	**6.8**
2	PBW826(I) (C)	102	7.5	8.5	6.0	6.5	**7.1**
3	DBW187 (C)	104	8.5	8.0	7.0	5.0	**7.1**
4	HD3086 (C)	105	7.0	8.0	6.0	6.5	**6.9**
5	DBW222 (C)	107	6.5	8.0	5.0	5.5	**6.3**
6	HD2967 (C)	109	8.0	7.5	4.0	5.5	**6.3**
7	HD3249 (C)	110	8.0	8.5	7.0	5.0	**7.1**
8	HD3471	101	8.0	9.0	6.5	5.5	**7.3**
9	HD3470	103	8.0	8.5	6.5	5.0	**7.0**
10	DBW386	108	6.5	8.5	5.5	5.0	**6.4**
Mean			**7.6**	**8.3**	**6.0**	**5.5**	**6.8**
Restricted Irrigated Timely Sown							
1	HI1612 (C)	301	7.5	8.5	6.0	5.5	**6.9**
2	HD3171 (C)	302	7.0	7.0	6.0	4.5	**6.1**
3	K1317 (C)	303	6.0	6.0	6.0	3.0	**5.3**
4	HD3293 (C)	304	7.0	8.0	3.5	5.0	**5.9**
5	DBW252 (C)	305	7.5	6.5	6.0	4.5	**6.1**
6	DBW398	306	5.5	5.0	3.0	3.0	**4.1**
Mean			**6.8**	**6.8**	**5.1**	**4.3**	**5.7**

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

S. No.	Entries	Code	Kanpur	Varanasi	Pusa	Sabour	Mean
Irrigated Timely Sown							
1	HD3388*	106	59				**59**
2	PBW826(I) (C)	102	59				**59**
3	DBW187 (C)	104	57				**57**
4	HD3086 (C)	105	55				**55**
5	DBW222 (C)	107	55				**55**
6	HD2967 (C)	109	57				**57**
7	HD3249 (C)	110	58				**58**
8	HD3471	101	57				**57**
9	HD3470	103	59				**59**
10	DBW386	108	52				**52**
Mean			**57**				**57**
Restricted Irrigated Timely Sown							
1	HI1612 (C)	301	71				**71**
2	HD3171 (C)	302	64				**64**
3	K1317 (C)	303	73				**73**
4	HD3293 (C)	304	60				**60**
5	DBW252 (C)	305	77				**77**
6	DBW398	306	49				**49**
Mean			**65**				**65**

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

S. No.	Entries	Code	Kanpur	Varanasi	Pusa	Sabour	Mean
Irrigated Timely Sown							
1	HD3388*	106	38.2	33.0	34.7	44.5	**37.6**
2	PBW826(I) (C)	102	35.2	33.7	39.2	45.2	**38.3**
3	DBW187 (C)	104	36.5	34.9	36.7	42.3	**37.6**
4	HD3086 (C)	105	41.8	34.4	35.7	50.2	**40.5**
5	DBW222 (C)	107	39.0	31.0	37.4	45.8	**38.3**
6	HD2967 (C)	109	33.9	32.6	34.1	44.3	**36.2**
7	HD3249 (C)	110	36.0	35.4	38.4	51.4	**40.3**
8	HD3471	101	36.6	32.4	36.5	50.2	**38.9**
9	HD3470	103	35.2	34.9	38.6	48.8	**39.4**
10	DBW386	108	40.7	31.5	40.2	39.5	**38.0**
Mean			**37.3**	**33.4**	**37.2**	**46.2**	**38.5**
Restricted Irrigated Timely Sown							
1	HI1612 (C)	301	54.4	52.5	37.2	48.3	**46.6**
2	HD3171 (C)	302	49.1	79.4	39.5	43.9	**44.2**
3	K1317 (C)	303	37.9	55.4	38.8	48.5	**41.7**
4	HD3293 (C)	304	48.8	66.7	32.9	58.2	**46.6**
5	DBW252 (C)	305	45.2	54.3	31.8	43.1	**40.0**
6	DBW398	306	39.4	76.3	35.7	45.4	**40.2**
Mean			**45.8**	**64.1***	**36.0**	**47.9**	**43.2**

***Fe content exceptionally high at Varanasi centre under RITS condition and hence not used in calculation of mean**

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

S. No.	Entries	Code	Kanpur	Varanasi	Pusa	Sabour	Mean
Irrigated Timely Sown							
1	HD3388*	106	29.5	32.3	32.5	17.2	**27.9**
2	PBW826(I) (C)	102	28.7	33.3	33.6	17.2	**28.2**
3	DBW187 (C)	104	22.0	31.3	32.3	18.2	**26.0**
4	HD3086 (C)	105	26.5	33.9	38.6	15.2	**28.6**
5	DBW222 (C)	107	25.8	30.0	32.6	15.9	**26.1**
6	HD2967 (C)	109	28.2	33.1	30.3	18.5	**27.5**
7	HD3249 (C)	110	23.3	31.4	32.7	20.9	**27.1**
8	HD3471	101	23.6	31.3	36.0	15.4	**26.6**
9	HD3470	103	27.7	39.6	33.7	18.2	**29.8**
10	DBW386	108	27.7	32.9	42.2	19.9	**30.7**
Mean			**26.3**	**32.9**	**34.5**	**17.7**	**27.8**
Restricted Irrigated Timely Sown							
1	HI1612 (C)	301	39.4	44.4	38.5	24.7	**36.8**
2	HD3171 (C)	302	40.7	36.0	34.8	21.6	**33.3**
3	K1317 (C)	303	28.7	40.0	31.7	18.7	**29.8**
4	HD3293 (C)	304	36.3	36.4	32.4	23.9	**32.3**
5	DBW252 (C)	305	32.2	40.2	33.5	19.7	**31.4**
6	DBW398	306	33.3	35.8	30.5	19.7	**29.8**
Mean			**35.1**	**38.8**	**33.6**	**21.4**	**32.2**

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

S. No.	Entries	Code	Vijapur	Junagarh	Indore	P.Khera	Mean
Irrigated Timely Sown							
1	GW547*	103	7.2	8.2	7.2	6.8	**7.4**
2	NWS2194*	104	7.0	7.4	6.8	6.2	**6.9**
3	HI1650(I) (C)	102	7.4	8.4	8.2	6.6	**7.7**
4	GW513 (C)	105	7.4	8.6	6.8	6.8	**7.4**
5	MACS6768(I) (C)	106	7.6	8.2	8.2	6.6	**7.7**
6	HI1636 (C)	109	7.8	8.2	8.4	6.6	**7.8**
7	GW322 (C)	110	7.0	8.0	6.8	6.4	**7.1**
8	HI1669	101	7.0	8.0	7.6	5.8	**7.1**
9	UAS3020	107	7.0	8.0	8.0	5.6	**7.2**
10	HI1670	108	6.8	8.2	8.0	5.8	**7.2**
Mean			**7.2**	**8.1**	**7.6**	**6.3**	**7.3**
Irrigated Late Sown							
1	CG1029 (C)	201	7.2	7.8	6.4	8.0	**7.4**
2	MP4010 (C)	202	6.2	6.4	6.4	6.4	**6.4**
3	HD2932 (C)	203	5.8	6.8	6.0	6.6	**6.3**
4	HI1634 (C)	209	6.2	7.0	7.6	7.0	**7.0**
5	HI1674	204	7.4	7.0	7.4	7.0	**7.2**
6	HI1673	205	6.0	6.6	7.2	6.6	**6.6**
7	HI1675	206	7.8	7.6	8.2	7.0	**7.7**
8	MP3557	207	7.2	6.4	7.8	6.6	**7.0**
9	AKAW5104	208	6.8	6.4	6.6	6.4	**6.6**
10	Filler	210	6.0	7.0	7.2	6.6	**6.7**
Mean			**6.7**	**6.9**	**7.1**	**6.8**	**6.9**
Restricted Irrigated Timely Sown							
1	DBW359*	302	8.6	8.4	8.0	7.2	**8.1**
2	CG1040*	306	7.8	8.0	7.8	6.4	**7.5**
3	MP3288 (C)	301	7.6	7.4	7.4	6.8	**7.3**
4	CG1036(I) (C)	304	7.8	8.0	7.2	6.8	**7.5**
5	HI1655(I) (C)	305	7.4	8.0	7.4	6.8	**7.4**
6	DBW110 (C)	308	7.6	7.8	8.0	6.4	**7.5**
7	DBW441	307	7.0	7.8	7.4	6.6	**7.2**
8	DBW442	303	6.8	7.6	7.4	6.2	**7.0**
Mean			**7.6**	**7.9**	**7.6**	**6.7**	**7.4**

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

S. No.	Entries	Code	Vijapur	Junagarh	Indore	P.Khera	Mean
Irrigated Timely Sown							
1	GW547*	103	79.4	82.1	78.4	78.7	**79.7**
2	NWS2194*	104	77.7	80.4	76.1	75.9	**77.5**
3	HI1650(I) (C)	102	81.9	84.7	81.3	81.9	**82.5**
4	GW513 (C)	105	81.2	83.1	80.8	81.8	**81.7**
5	MACS6768(I) (C)	106	83.3	84.0	81.0	81.9	**82.6**
6	HI1636 (C)	109	78.8	82.0	79.0	79.6	**79.9**
7	GW322 (C)	110	79.5	81.6	78.6	79.3	**79.8**
8	HI1669	101	82.2	84.8	81.7	81.2	**82.5**
9	UAS3020	107	79.1	80.6	78.7	77.1	**78.9**
10	HI1670	108	83.3	84.6	83.6	82.5	**83.5**
Mean			**80.6**	**82.8**	**79.9**	**80.0**	**80.8**
Irrigated Late Sown							
1	CG1029 (C)	201	80.0	80.1	81.8	81.5	**80.9**
2	MP4010 (C)	202	77.3	79.2	82.6	79.4	**79.6**
3	HD2932 (C)	203	77.8	78.5	81.0	77.7	**78.8**
4	HI1634 (C)	209	76.5	80.0	82.6	81.3	**80.1**
5	HI1674	204	80.1	80.1	82.5	79.9	**80.7**
6	HI1673	205	76.4	79.2	82.7	79.1	**79.4**
7	HI1675	206	82.6	81.6	84.3	82.2	**82.7**
8	MP3557	207	77.9	79.1	82.0	80.5	**79.9**
9	AKAW5104	208	78.8	79.9	82.5	79.6	**80.2**
10	Filler	210	75.7	77.3	79.8	77.1	**77.5**
Mean			**78.3**	**79.5**	**82.2**	**79.8**	**80.0**
Restricted Irrigated Timely Sown							
1	DBW359*	302	83.2	83.9	82.6	83.4	**83.3**
2	CG1040*	306	77.6	82.0	77.8	79.6	**79.3**
3	MP3288 (C)	301	79.6	81.8	79.6	81.6	**80.7**
4	CG1036(I) (C)	304	79.5	83.4	79.6	81.1	**80.9**
5	HI1655(I) (C)	305	77.6	80.8	79.6	79.4	**79.4**
6	DBW110 (C)	308	77.9	81.7	78.3	79.8	**79.4**
7	DBW441	307	77.6	82.3	78.1	81.1	**79.8**
8	DBW442	303	76.7	81.0	79.1	80.7	**79.4**
Mean			**78.7**	**82.1**	**79.3**	**80.8**	**80.3**

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

S. No.	Entries	Code	Vijapur	Junagarh	Indore	P.Khera	Mean
Irrigated Timely Sown							
1	GW547*	103	12.7	13.9	12.1	13.3	**13.0**
2	NWS2194*	104	11.8	12.8	11.7	12.1	**12.1**
3	HI1650(I) (C)	102	11.7	13.1	11.0	11.6	**11.8**
4	GW513 (C)	105	10.7	12.3	10.9	10.4	**11.1**
5	MACS6768(I) (C)	106	12.3	13.9	10.9	11.7	**12.2**
6	HI1636 (C)	109	11.6	12.5	11.3	11.8	**11.8**
7	GW322 (C)	110	11.6	11.6	10.8	10.7	**11.2**
8	HI1669	101	11.5	13.0	10.6	11.8	**11.7**
9	UAS3020	107	12.0	12.2	11.0	11.8	**11.8**
10	HI1670	108	11.7	12.8	11.0	11.6	**11.8**
Mean			**11.8**	**12.8**	**11.1**	**11.7**	**11.8**
Irrigated Late Sown							
1	CG1029 (C)	201	11.9	14.0	9.7	12.2	**11.9**
2	MP4010 (C)	202	12.1	14.4	10.2	12.5	**12.3**
3	HD2932 (C)	203	12.5	15.1	8.6	11.2	**11.9**
4	HI1634 (C)	209	12.2	13.5	10.5	12.9	**12.3**
5	HI1674	204	11.8	13.7	9.6	11.6	**11.7**
6	HI1673	205	11.9	12.7	9.3	12.0	**11.5**
7	HI1675	206	11.4	13.4	10.7	12.5	**12.0**
8	MP3557	207	12.6	14.6	9.4	13.2	**12.5**
9	AKAW5104	208	11.4	13.3	9.2	12.4	**11.6**
10	Filler	210	12.2	14.4	10.8	13.3	**12.7**
Mean			**12.0**	**13.9**	**9.8**	**12.4**	**12.0**
Restricted Irrigated Timely Sown							
1	DBW359*	302	11.3	13.2	10.5	9.0	**11.0**
2	CG1040*	306	12.0	12.4	10.9	10.1	**11.3**
3	MP3288 (C)	301	11.9	12.5	10.6	9.3	**11.1**
4	CG1036(I) (C)	304	11.5	13.2	9.8	9.3	**11.0**
5	HI1655(I) (C)	305	10.9	12.5	10.2	9.4	**10.8**
6	DBW110 (C)	308	11.7	13.1	11.2	10.2	**11.6**
7	DBW441	307	12.0	12.5	11.1	9.3	**11.2**
8	DBW442	303	12.4	12.8	10.3	9.2	**11.2**
Mean			**11.7**	**12.8**	**10.6**	**9.5**	**11.1**

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

S. No.	Entries	Code	Vijapur	Junagarh	Indore	P.Khera	Mean
Irrigated Timely Sown							
1	GW547*	103	53	58	60	63	**59**
2	NWS2194*	104	66	69	70	72	**69**
3	HI1650(I) (C)	102	40	47	47	46	**45**
4	GW513 (C)	105	53	40	44	43	**45**
5	MACS6768(I) (C)	106	39	44	43	42	**42**
6	HI1636 (C)	109	45	44	46	46	**45**
7	GW322 (C)	110	41	35	43	42	**40**
8	HI1669	101	47	45	51	50	**48**
9	UAS3020	107	48	43	48	48	**47**
10	HI1670	108	48	52	50	53	**51**
Mean			**48**	**48**	**50**	**50**	**49**
Irrigated Late Sown							
1	CG1029 (C)	201	44	36	40	43	**41**
2	MP4010 (C)	202	45	40	44	47	**44**
3	HD2932 (C)	203	58	49	48	50	**51**
4	HI1634 (C)	209	53	46	46	54	**50**
5	HI1674	204	41	43	44	45	**43**
6	HI1673	205	48	43	45	46	**45**
7	HI1675	206	52	44	50	51	**49**
8	MP3557	207	70	63	55	71	**65**
9	AKAW5104	208	49	47	47	52	**49**
10	Filler	210	63	66	59	72	**65**
Mean			**52**	**48**	**48**	**53**	**50**
Restricted Irrigated Timely Sown							
1	DBW359*	302	46	46	42	50	**46**
2	CG1040*	306	54	59	53	51	**54**
3	MP3288 (C)	301	46	52	48	44	**47**
4	CG1036(I) (C)	304	61	73	50	54	**59**
5	HI1655(I) (C)	305	44	47	42	43	**44**
6	DBW110 (C)	308	53	61	52	60	**57**
7	DBW441	307	55	59	54	50	**54**
8	DBW442	303	62	61	50	48	**55**
Mean			**53**	**57**	**49**	**50**	**52**

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

S. No.	Entries	Code	Vijapur	Junagarh	Indore	P.Khera	Mean
Irrigated Timely Sown							
1	GW547*	103	7.5	6.0	7.5	6.5	**6.9**
2	NWS2194*	104	7.0	6.5	6.5	6.0	**6.5**
3	HI1650(I) (C)	102	7.5	6.5	5.5	6.5	**6.5**
4	GW513 (C)	105	3.0	2.5	1.5	2.0	**2.3**
5	MACS6768(I) (C)	106	5.5	5.0	5.0	5.0	**5.1**
6	HI1636 (C)	109	4.5	4.5	3.5	3.5	**4.0**
7	GW322 (C)	110	5.0	5.0	4.0	7.0	**5.3**
8	HI1669	101	3.0	3.5	1.5	2.5	**2.6**
9	UAS3020	107	7.0	6.5	7.5	7.0	**7.0**
10	HI1670	108	3.5	3.5	1.5	1.5	**2.5**
Mean			**5.4**	**5.0**	**4.4**	**4.8**	**4.9**
Irrigated Late Sown							
1	CG1029 (C)	201	5.5	5.0	5.0	7.5	**5.8**
2	MP4010 (C)	202	5.0	4.5	4.5	5.0	**4.8**
3	HD2932 (C)	203	4.0	4.0	2.5	4.5	**3.8**
4	HI1634 (C)	209	5.5	6.0	4.5	6.5	**5.6**
5	HI1674	204	3.0	2.5	2.5	4.5	**3.1**
6	HI1673	205	6.5	5.5	4.5	6.0	**5.6**
7	HI1675	206	3.5	3.0	3.0	5.0	**3.6**
8	MP3557	207	4.0	4.5	4.0	6.0	**4.6**
9	AKAW5104	208	5.5	5.0	4.5	6.5	**5.4**
10	Filler	210	9.0	8.5	5.5	7.5	**7.6**
Mean			**5.2**	**4.9**	**4.1**	**5.9**	**5.0**
Restricted Irrigated Timely Sown							
1	DBW359*	302	2.5	2.0	1.0	4.5	**2.5**
2	CG1040*	306	7.0	6.0	7.0	6.0	**6.5**
3	MP3288 (C)	301	8.0	7.0	5.0	6.0	**6.5**
4	CG1036(I) (C)	304	3.5	3.0	2.0	4.0	**3.1**
5	HI1655(I) (C)	305	5.0	4.5	5.5	6.0	**5.3**
6	DBW110 (C)	308	5.0	4.5	7.0	6.5	**5.8**
7	DBW441	307	4.5	4.5	7.0	6.0	**5.5**
8	DBW442	303	6.0	5.0	7.0	6.0	**6.0**
Mean			**5.2**	**4.6**	**5.2**	**5.6**	**5.1**

Table 30: Hardness index of *T. aestivum* genotypes in Central Zone (CZ) AVTs

S. No.	Entries	Code	Vijapur	Junagarh	Indore	P.Khera	Mean
Irrigated Timely Sown							
1	GW547*	103		77			**77**
2	NWS2194*	104		77			**77**
3	HI1650(I) (C)	102		82			**82**
4	GW513 (C)	105		78			**78**
5	MACS6768(I) (C)	106		82			**82**
6	HI1636 (C)	109		76			**76**
7	GW322 (C)	110		85			**85**
8	HI1669	101		78			**78**
9	UAS3020	107		87			**87**
10	HI1670	108		80			**80**
Mean				**80**			**80**
Irrigated Late Sown							
1	CG1029 (C)	201		79			**79**
2	MP4010 (C)	202		77			**77**
3	HD2932 (C)	203		73			**73**
4	HI1634 (C)	209		87			**87**
5	HI1674	204		75			**75**
6	HI1673	205		91			**91**
7	HI1675	206		78			**78**
8	MP3557	207		76			**76**
9	AKAW5104	208		88			**88**
10	Filler	210		80			**80**
Mean				**80**			**80**
Restricted Irrigated Timely Sown							
1	DBW359*	302		79			**79**
2	CG1040*	306		80			**80**
3	MP3288 (C)	301		86			**86**
4	CG1036(I) (C)	304		76			**76**
5	HI1655(I) (C)	305		85			**85**
6	DBW110 (C)	308		81			**81**
7	DBW441	307		70			**70**
8	DBW442	303		78			**78**
Mean				**79**			**79**

Table 31: Grain iron content (ppm) of *T. aestivum* genotypes in Central Zone (CZ) AVTs

S. No.	Entries	Code	Vijapur	Junagarh	Indore	P.Khera	Mean
Irrigated Timely Sown							
1	GW547*	103	39.2	43.5	39.3	34.9	**39.2**
2	NWS2194*	104	36.6	40.4	38.1	30.9	**36.5**
3	HI1650(I) (C)	102	38.9	41.2	36.2	30.8	**36.8**
4	GW513 (C)	105	36.4	35.2	35.3	29.6	**34.1**
5	MACS6768(I) (C)	106	36.8	44.6	38.0	39.4	**39.7**
6	HI1636 (C)	109	34.6	40.7	41.9	30.4	**36.9**
7	GW322 (C)	110	33.9	39.4	37.7	30.6	**35.4**
8	HI1669	101	36.2	37.3	39.7	31.6	**36.2**
9	UAS3020	107	36.2	41.8	39.3	31.6	**37.2**
10	HI1670	108	35.9	43.1	41.0	30.8	**37.7**
Mean			**36.5**	**40.7**	**38.7**	**32.1**	**37.0**
Irrigated Late Sown							
1	CG1029 (C)	201	30.3	43.6	39.2	39.6	**38.2**
2	MP4010 (C)	202	30.9	47.2	39.7	35.6	**38.4**
3	HD2932 (C)	203	35.8	40.2	38.1	35.4	**37.4**
4	HI1634 (C)	209	31.3	40.6	39.3	37.9	**37.3**
5	HI1674	204	32.8	43.4	42.9	38.1	**39.3**
6	HI1673	205	33.7	44.1	39.9	37.8	**38.9**
7	HI1675	206	33.9	43.2	45.7	42.0	**41.2**
8	MP3557	207	32.5	40.3	34.9	35.0	**35.7**
9	AKAW5104	208	30.8	37.7	42.9	39.5	**37.7**
10	Filler	210	30.3	43.2	41.7	34.4	**37.4**
Mean			**32.2**	**42.4**	**40.4**	**37.5**	**38.1**
Restricted Irrigated Timely Sown							
1	DBW359*	302	40.7	47.7	43.2	42.1	**43.4**
2	CG1040*	306	34.4	41.5	42.7	37.1	**38.9**
3	MP3288 (C)	301	35.3	36.1	40.9	38.6	**37.7**
4	CG1036(I) (C)	304	40.5	41.0	40.7	34.5	**39.2**
5	HI1655(I) (C)	305	38.5	40.2	37.8	36.9	**38.4**
6	DBW110 (C)	308	33.5	43.0	45.0	35.8	**39.3**
7	DBW441	307	42.5	43.1	43.1	36.2	**41.2**
8	DBW442	303	37.7	37.5	39.8	37.1	**38.0**
Mean			**37.9**	**41.3**	**41.7**	**37.3**	**39.5**

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

S. No.	Entries	Code	Vijapur	Junagarh	Indore	P.Khera	Mean
Irrigated Timely Sown							
1	GW547*	103	46.3	46.6	39.3	37.9	**42.5**
2	NWS2194*	104	42.5	42.0	38.0	34.6	**39.3**
3	HI1650(I) (C)	102	40.0	39.3	33.4	38.2	**37.7**
4	GW513 (C)	105	43.4	34.4	34.9	31.8	**36.1**
5	MACS6768(I) (C)	106	50.6	42.2	36.3	47.7	**44.2**
6	HI1636 (C)	109	41.3	41.9	36.7	38.1	**39.5**
7	GW322 (C)	110	44.4	53.0	36.7	34.6	**42.2**
8	HI1669	101	45.5	44.2	39.4	33.1	**40.6**
9	UAS3020	107	50.1	40.9	39.8	40.2	**42.8**
10	HI1670	108	43.1	44.3	41.4	39.2	**42.0**
Mean			**44.7**	**42.9**	**37.6**	**37.5**	**40.7**
Irrigated Late Sown							
1	CG1029 (C)	201	41.3	43.0	34.0	42.7	**40.3**
2	MP4010 (C)	202	44.4	48.3	35.4	43.2	**42.8**
3	HD2932 (C)	203	46.4	42.1	34.1	36.5	**39.8**
4	HI1634 (C)	209	45.0	44.1	37.9	42.8	**42.5**
5	HI1674	204	46.1	43.8	36.3	44.9	**42.8**
6	HI1673	205	47.0	44.9	33.5	38.1	**40.9**
7	HI1675	206	49.6	44.3	37.3	48.6	**45.0**
8	MP3557	207	48.0	46.2	31.8	43.3	**42.3**
9	AKAW5104	208	47.4	42.1	40.2	42.1	**43.0**
10	Filler	210	41.7	38.7	32.8	34.4	**36.9**
Mean			**45.7**	**43.8**	**35.3**	**41.7**	**41.6**
Restricted Irrigated Timely Sown							
1	DBW359*	302	31.4	47.8	36.1	37.8	**38.3**
2	CG1040*	306	30.5	41.7	41.9	32.3	**36.6**
3	MP3288 (C)	301	32.7	39.5	35.6	38.4	**36.6**
4	CG1036(I) (C)	304	30.5	47.4	33.2	31.0	**35.5**
5	HI1655(I) (C)	305	31.9	48.0	36.7	31.5	**37.0**
6	DBW110 (C)	308	33.0	47.9	43.9	33.5	**39.6**
7	DBW441	307	33.5	43.7	42.7	29.5	**37.4**
8	DBW442	303	34.2	43.3	39.6	34.4	**37.9**
Mean			**32.2**	**44.9**	**38.7**	**33.6**	**37.3**

Table 33: Grain appearance score (Max-10) of *T. aestivum* and *T. durum* genotypes in Peninsular Zone (PZ) AVTs

S. No.	Entries	Code	Dharwad	Pune	Niphad	Mean
Irrigated Timely Sown						
T. aestivum						
1	MP1378*	112	6.4	5.6	5.8	**5.9**
2	GW322 (C)	103	6.4	5.6	6.0	**6.0**
3	DBW187 (C)	116	6.2	5.6	6.0	**5.9**
4	MACS6222 (C)	118	6.2	6.0	6.2	**6.1**
5	PBW891	101	7.2	5.8	6.8	**6.6**
6	NIAW4153	102	6.6	6.4	7.0	**6.7**
7	HD3469	104	6.4	5.6	6.0	**6.0**
8	AKAW5100	105	7.0	5.8	6.2	**6.3**
9	DBW444	106	6.6	6.0	6.0	**6.2**
10	UAS3020	107	7.6	6.0	6.0	**6.5**
11	WH1306	109	7.2	5.8	6.4	**6.5**
12	MACS6809	110	7.0	5.6	6.0	**6.2**
13	AKAW5314	114	7.4	6.0	6.0	**6.5**
14	NIAW4183	115	6.4	6.4	7.2	**6.7**
15	PWU15	117	6.6	6.0	6.0	**6.2**
16	UAS3021	119	7.6	6.4	6.4	**6.8**
17	MP1386	120	6.8	5.4	6.4	**6.2**
18	NWS2222	121	6.8	5.4	5.8	**6.0**
19	MACS6811	122	7.0	6.0	6.0	**6.3**
20	DBW443	123	7.4	6.4	6.4	**6.7**
Mean			**6.8**	**5.9**	**6.2**	**6.3**
T. durum						
1	MACS4100(d)(I) (C)	111	7.2	5.6	5.6	**6.1**
2	MACS3949(d) (C)	113	6.8	6.8	6.6	**6.7**
3	HI8826(d)(I) (C)	124	7.8	6.6	6.8	**7.1**
4	HI8841(d)	108	8.0	6.0	6.2	**6.7**
Mean			**7.5**	**6.3**	**6.3**	**6.7**

Table 33 cont.

S. No.	Entries	Code	Dharwad	Pune	Niphad	Mean
Irrigated Late Sown						
T. aestivum						
1	HD3090 (C)	202	7.6	6.0	5.6	**6.4**
2	HD2932 (C)	204	7.4	5.6	5.4	**6.1**
3	RAJ4083 (C)	213	8.0	6.4	6.0	**6.8**
4	HI1633 (C)	223	7.6	5.8	6.2	**6.5**
5	MP1388	201	7.8	5.8	5.6	**6.4**
6	GW538	203	7.8	5.8	5.8	**6.5**
7	DBW395	205	7.6	6.0	6.0	**6.5**
8	MACS6805	206	7.4	5.4	5.6	**6.1**
9	HI1672	207	8.2	5.6	5.8	**6.5**
10	HI1674	208	8.0	5.6	6.4	**6.7**
11	UAS3023	209	6.6	5.6	4.8	**5.7**
12	AKAW5104	210	7.8	5.8	5.6	**6.4**
13	LOK79	211	7.8	6.2	6.2	**6.7**
14	HI1675	212	8.0	5.8	6.2	**6.7**
15	UAS3022	214	7.6	5.6	5.9	**6.4**
16	MP3557	215	6.6	6.0	5.8	**6.1**
17	NIAW4120	216	7.8	6.4	6.2	**6.8**
18	GW542	217	8.4	6.2	6.6	**7.1**
19	MP3556	218	6.6	5.6	6.2	**6.1**
20	PBW897	219	7.4	6.2	5.6	**6.4**
21	WH1310	220	6.4	6.2	5.4	**6.0**
22	HI1673	221	6.8	6.0	5.6	**6.1**
23	MACS6814	222	8.0	6.2	5.8	**6.7**
24	NIAW4114	224	7.6	6.0	6.2	**6.6**
25	DBW394	225	6.8	5.8	6.0	**6.2**
Mean			**7.5**	**5.9**	**5.9**	**6.4**
Restricted Irrigated Timely Sown						
T. aestivum						
1	NIAW4028*	302	5.4	5.8	6.8	**6.0**
2	DBW359*	306	6.0	6.0	6.6	**6.2**
3	HI1665*	307	6.4	6.2	6.4	**6.3**
4	NIAW3170 (C)	301	5.2	5.4	6.2	**5.6**
5	HI1605 (C)	310	5.8	5.4	5.8	**5.7**
6	DBW397	303	6.0	6.2	6.8	**6.3**
Mean			**5.8**	**5.8**	**6.4**	**6.0**
T. durum						
1	UAS478(d)*	305	5.6	5.8	6.4	**5.9**
2	HI8840(d)*	312	6.6	6.2	6.6	**6.5**
3	NIDW1149(d) (C)	309	6.8	6.2	8.0	**7.0**
4	UAS446(d) (C)	311	6.6	5.6	6.2	**6.1**
5	UAS481(d)	304	5.2	5.8	5.8	**5.6**
6	DDW61(d)	308	5.8	6.0	6.8	**6.2**
Mean			**6.1**	**5.9**	**6.6**	**6.2**

Table 34: Hectolitre weight (Kg/hl) of *T. aestivum* and *T. durum* genotypes in Peninsular Zone (PZ) AVTs

S. No.	Entries	Code	Dharwad	Pune	Niphad	Mean
Irrigated Timely Sown						
T. aestivum						
1	MP1378*	112	81.9	81.9	81.3	**81.7**
2	GW322 (C)	103	78.9	80.2	80.0	**79.7**
3	DBW187 (C)	116	76.9	79.6	80.0	**78.8**
4	MACS6222 (C)	118	79.9	81.5	80.6	**80.7**
5	PBW891	101	79.3	78.7	79.2	**79.1**
6	NIAW4153	102	76.3	77.2	78.1	**77.2**
7	HD3469	104	81.4	82.2	80.5	**81.4**
8	AKAW5100	105	80.8	80.5	80.4	**80.6**
9	DBW444	106	76.9	77.2	77.3	**77.1**
10	UAS3020	107	79.3	78.1	76.1	**77.8**
11	WH1306	109	80.8	80.9	80.2	**80.6**
12	MACS6809	110	81.8	82.6	81.5	**82.0**
13	AKAW5314	114	82.5	82.3	80.9	**81.9**
14	NIAW4183	115	73.7	76.7	77.9	**76.1**
15	PWU15	117	80.9	81.4	80.9	**81.1**
16	UAS3021	119	80.1	80.4	80.1	**80.2**
17	MP1386	120	79.4	79.0	78.9	**79.1**
18	NWS2222	121	81.5	80.2	80.2	**80.6**
19	MACS6811	122	80.0	81.4	79.8	**80.4**
20	DBW443	123	80.5	81.4	80.4	**80.8**
Mean			**79.6**	**80.2**	**79.7**	**79.8**
T. durum						
1	MACS4100(d)(I) (C)	111	80.8	81.9	76.9	**79.9**
2	MACS3949(d) (C)	113	83.6	83.6	82.1	**83.1**
3	HI8826(d)(I) (C)	124	82.1	83.9	82.4	**82.8**
4	HI8841(d)	108	82.6	83.4	81.4	**82.5**
Mean			**82.3**	**83.2**	**80.7**	**82.1**

Table 34 cont.

S. No.	Entries	Code	Dharwad	Pune	Niphad	Mean
Irrigated Late Sown						
T. aestivum						
1	HD3090 (C)	202	79.9	80.4	76.5	**78.9**
2	HD2932 (C)	204	81.6	80.4	73.9	**78.6**
3	RAJ4083 (C)	213	81.8	81.4	78.0	**80.4**
4	HI1633 (C)	223	82.6	81.0	77.2	**80.3**
5	MP1388	201	78.5	79.8	77.6	**78.6**
6	GW538	203	83.4	82.9	80.4	**82.2**
7	DBW395	205	79.4	80.2	76.0	**78.5**
8	MACS6805	206	82.9	81.8	79.2	**81.3**
9	HI1672	207	82.9	81.2	80.0	**81.4**
10	HI1674	208	82.8	81.2	79.5	**81.2**
11	UAS3023	209	80.8	80.6	67.9	**76.4**
12	AKAW5104	210	82.1	82.0	78.4	**80.8**
13	LOK79	211	81.8	81.0	79.4	**80.7**
14	HI1675	212	83.1	82.2	81.3	**82.2**
15	UAS3022	214	81.1	79.0	80.2	**80.1**
16	MP3557	215	82.5	82.0	79.0	**81.2**
17	NIAW4120	216	76.5	77.2	72.6	**75.4**
18	GW542	217	82.5	82.5	78.4	**81.1**
19	MP3556	218	81.0	79.8	76.0	**78.9**
20	PBW897	219	81.2	81.0	75.6	**79.3**
21	WH1310	220	77.4	77.7	71.7	**75.6**
22	HI1673	221	81.3	81.4	78.2	**80.3**
23	MACS6814	222	80.7	80.5	77.4	**79.5**
24	NIAW4114	224	82.5	82.7	79.9	**81.7**
25	DBW394	225	80.6	80.6	77.1	**79.4**
Mean			**81.2**	**80.8**	**77.3**	**79.8**
Restricted Irrigated Timely Sown						
T. aestivum						
1	NIAW4028*	302	74.5	80.4	79.5	**78.1**
2	DBW359*	306	77.2	80.5	79.5	**79.1**
3	HI1665*	307	78.3	81.6	80.7	**80.2**
4	NIAW3170 (C)	301	74.1	79.6	79.4	**77.7**
5	HI1605 (C)	310	76.1	81.3	81.5	**79.6**
6	DBW397	303	76.9	80.3	79.0	**78.7**
Mean			**76.2**	**80.6**	**79.9**	**78.9**
T. durum						
1	UAS478(d)*	305	79.8	81.6	81.6	**81.0**
2	HI8840(d)*	312	79.3	83.1	82.3	**81.6**
3	NIDW1149(d) (C)	309	77.5	80.7	79.4	**79.2**
4	UAS446(d) (C)	311	80.1	81.8	81.5	**81.1**
5	UAS481(d)	304	79.5	82.1	81.9	**81.2**
6	DDW61(d)	308	77.8	81.4	80.6	**79.9**
Mean			**79.0**	**81.8**	**81.2**	**80.7**

Table 35: Protein content (%) at 12% moisture basis of *T. aestivum* and *T. durum* genotypes in Peninsular Zone (PZ) AVTs

S. No.	Entries	Code	Dharwad	Pune	Niphad	Mean
Irrigated Timely Sown						
T. aestivum						
1	MP1378*	112	14.1	13.8	12.3	**13.4**
2	GW322 (C)	103	13.1	11.7	10.4	**11.7**
3	DBW187 (C)	116	16.4	14.6	11.2	**14.0**
4	MACS6222 (C)	118	14.0	14.2	12.2	**13.5**
5	PBW891	101	12.6	13.5	11.5	**12.5**
6	NIAW4153	102	13.5	13.1	11.4	**12.7**
7	HD3469	104	14.5	15.0	11.5	**13.7**
8	AKAW5100	105	13.7	13.9	11.4	**13.0**
9	DBW444	106	16.6	15.2	13.1	**15.0**
10	UAS3020	107	12.4	12.9	10.1	**11.8**
11	WH1306	109	13.0	12.9	11.6	**12.5**
12	MACS6809	110	14.1	13.4	12.5	**13.3**
13	AKAW5314	114	14.0	14.2	11.5	**13.2**
14	NIAW4183	115	13.9	12.8	12.0	**12.9**
15	PWU15	117	14.2	14.7	13.0	**14.0**
16	UAS3021	119	13.2	13.6	11.0	**12.6**
17	MP1386	120	13.1	14.0	11.0	**12.7**
18	NWS2222	121	13.0	13.6	11.3	**12.6**
19	MACS6811	122	13.6	12.5	10.6	**12.2**
20	DBW443	123	14.2	15.1	12.4	**13.9**
Mean			**13.9**	**13.7**	**11.6**	**13.1**
T. durum						
1	MACS4100(d)(I) (C)	111	13.0	12.1	9.5	**11.5**
2	MACS3949(d) (C)	113	13.3	13.2	11.1	**12.5**
3	HI8826(d)(I) (C)	124	14.0	12.2	11.3	**12.5**
4	HI8841(d)	108	12.8	12.2	11.1	**12.0**
Mean			**13.3**	**12.4**	**10.7**	**12.1**

Table 35 cont.

S. No.	Entries	Code	Dharwad	Pune	Niphad	Mean
Irrigated Late Sown						
T. aestivum						
1	HD3090 (C)	202	13.0	12.4	12.5	**12.7**
2	HD2932 (C)	204	13.5	13.3	11.8	**12.9**
3	RAJ4083 (C)	213	12.4	14.1	12.7	**13.1**
4	HI1633 (C)	223	13.2	14.0	12.8	**13.3**
5	MP1388	201	13.1	13.2	13.3	**13.2**
6	GW538	203	13.5	14.1	13.2	**13.6**
7	DBW395	205	13.8	14.0	13.4	**13.7**
8	MACS6805	206	13.0	12.7	12.8	**12.8**
9	HI1672	207	12.7	14.1	13.1	**13.3**
10	HI1674	208	12.9	12.4	12.5	**12.6**
11	UAS3023	209	13.5	12.2	11.6	**12.4**
12	AKAW5104	210	11.0	13.0	12.3	**12.1**
13	LOK79	211	12.7	13.2	12.5	**12.8**
14	HI1675	212	12.7	14.0	13.1	**13.3**
15	UAS3022	214	12.8	14.0	13.0	**13.3**
16	MP3557	215	14.0	15.1	14.0	**14.4**
17	NIAW4120	216	12.8	12.8	12.5	**12.7**
18	GW542	217	12.9	13.0	11.6	**12.5**
19	MP3556	218	15.0	15.6	14.4	**15.0**
20	PBW897	219	14.4	13.9	13.1	**13.8**
21	WH1310	220	13.0	12.6	12.8	**12.8**
22	HI1673	221	11.8	13.4	12.3	**12.5**
23	MACS6814	222	13.1	13.3	13.5	**13.3**
24	NIAW4114	224	12.6	13.2	13.0	**12.9**
25	DBW394	225	14.3	13.9	13.3	**13.9**
Mean			**13.1**	**13.5**	**12.8**	**13.2**
Restricted Irrigated Timely Sown						
T. aestivum						
1	NIAW4028*	302	15.2	13.3	12.1	**13.5**
2	DBW359*	306	16.1	12.9	11.2	**13.4**
3	HI1665*	307	15.4	12.7	10.9	**13.0**
4	NIAW3170 (C)	301	16.0	14.3	12.3	**14.2**
5	HI1605 (C)	310	15.7	13.8	11.5	**13.7**
6	DBW397	303	15.1	14.1	13.1	**14.1**
Mean			**15.6**	**13.5**	**11.9**	**13.6**
T. durum						
1	UAS478(d)*	305	13.5	13.4	11.3	**12.8**
2	HI8840(d)*	312	13.9	12.2	11.7	**12.6**
3	NIDW1149(d) (C)	309	13.0	12.1	11.9	**12.3**
4	UAS446(d) (C)	311	13.6	13.1	11.8	**12.8**
5	UAS481(d)	304	15.1	13.1	11.6	**13.2**
6	DDW61(d)	308	14.5	12.1	12.0	**12.9**
Mean			**13.9**	**12.7**	**11.7**	**12.8**

Table 36: Sedimentation value (ml) of *T. aestivum* and *T. durum* genotypes in Peninsular Zone (PZ) AVTs

S. No.	Entries	Code	Dharwad	Pune	Niphad	Mean
Irrigated Timely Sown						
T. aestivum						
1	MP1378*	112	42	40	44	**42**
2	GW322 (C)	103	47	41	42	**43**
3	DBW187 (C)	116	68	63	63	**65**
4	MACS6222 (C)	118	41	37	40	**39**
5	PBW891	101	73	62	64	**66**
6	NIAW4153	102	53	46	47	**49**
7	HD3469	104	57	54	67	**60**
8	AKAW5100	105	47	43	45	**45**
9	DBW444	106	50	46	56	**50**
10	UAS3020	107	69	56	66	**63**
11	WH1306	109	69	62	59	**63**
12	MACS6809	110	51	43	46	**47**
13	AKAW5314	114	47	43	43	**44**
14	NIAW4183	115	50	45	43	**46**
15	PWU15	117	52	49	52	**51**
16	UAS3021	119	69	52	58	**59**
17	MP1386	120	48	40	43	**44**
18	NWS2222	121	58	55	46	**53**
19	MACS6811	122	55	45	49	**50**
20	DBW443	123	59	51	62	**57**
Mean			**55**	**49**	**52**	**52**
T. durum						
1	MACS4100(d)(I) (C)	111	36	39	38	**38**
2	MACS3949(d) (C)	113	43	36	43	**41**
3	HI8826(d)(I) (C)	124	28	27	32	**29**
4	HI8841(d)	108	26	26	26	**26**
Mean			**34**	**32**	**35**	**34**

Table 36 cont.

S. No.	Entries	Code	Dharwad	Pune	Niphad	Mean
Irrigated Late Sown						
T. aestivum						
1	HD3090 (C)	202	53	42	50	**49**
2	HD2932 (C)	204	55	48	51	**52**
3	RAJ4083 (C)	213	53	48	58	**53**
4	HI1633 (C)	223	45	47	48	**47**
5	MP1388	201	62	47	57	**55**
6	GW538	203	44	43	43	**44**
7	DBW395	205	61	52	62	**58**
8	MACS6805	206	49	41	44	**45**
9	HI1672	207	52	49	51	**50**
10	HI1674	208	41	38	43	**41**
11	UAS3023	209	58	49	53	**54**
12	AKAW5104	210	45	46	54	**48**
13	LOK79	211	44	45	43	**44**
14	HI1675	212	48	45	45	**46**
15	UAS3022	214	61	52	54	**56**
16	MP3557	215	63	64	70	**65**
17	NIAW4120	216	52	48	50	**50**
18	GW542	217	40	38	42	**40**
19	MP3556	218	58	60	70	**62**
20	PBW897	219	62	61	65	**62**
21	WH1310	220	55	46	57	**53**
22	HI1673	221	46	44	48	**46**
23	MACS6814	222	51	48	54	**51**
24	NIAW4114	224	60	48	52	**53**
25	DBW394	225	70	61	68	**67**
Mean			**53**	**48**	**53**	**52**
Restricted Irrigated Timely Sown						
T. aestivum						
1	NIAW4028*	302	73	51	67	**63**
2	DBW359*	306	69	55	66	**63**
3	HI1665*	307	38	36	40	**38**
4	NIAW3170 (C)	301	69	47	62	**59**
5	HI1605 (C)	310	69	55	63	**62**
6	DBW397	303	67	49	61	**59**
Mean			**64**	**49**	**60**	**58**
T. durum						
1	UAS478(d)*	305	41	38	42	**40**
2	HI8840(d)*	312	38	36	43	**39**
3	NIDW1149(d) (C)	309	36	30	34	**33**
4	UAS446(d) (C)	311	48	40	48	**45**
5	UAS481(d)	304	36	33	40	**37**
6	DDW61(d)	308	38	39	46	**41**
Mean			**40**	**36**	**42**	**39**

Table 37: Phenol test (Max-10) of *T. aestivum* genotypes in Peninsular Zone (PZ) AVTs

S. No.	Entries	Code	Dharwad	Pune	Niphad	Mean
Irrigated Timely Sown						
T. aestivum						
1	MP1378*	112	6.5	6.0	6.5	**6.3**
2	GW322 (C)	103	7.0	7.5	4.5	**6.3**
3	DBW187 (C)	116	8.0	7.5	8.0	**7.8**
4	MACS6222 (C)	118	6.5	6.0	7.0	**6.5**
5	PBW891	101	3.0	3.5	3.0	**3.2**
6	NIAW4153	102	3.5	3.0	2.5	**3.0**
7	HD3469	104	8.5	8.0	8.5	**8.3**
8	AKAW5100	105	6.0	5.0	6.0	**5.7**
9	DBW444	106	5.0	4.0	3.0	**4.0**
10	UAS3020	107	7.5	6.0	6.0	**6.5**
11	WH1306	109	3.0	3.0	3.0	**3.0**
12	MACS6809	110	3.0	3.5	3.0	**3.2**
13	AKAW5314	114	3.0	3.0	3.0	**3.0**
14	NIAW4183	115	3.0	3.5	2.5	**3.0**
15	PWU15	117	3.0	5.5	3.5	**4.0**
16	UAS3021	119	6.0	6.0	6.5	**6.2**
17	MP1386	120	7.0	7.5	7.5	**7.3**
18	NWS2222	121	5.5	6.0	7.0	**6.2**
19	MACS6811	122	6.0	7.0	7.5	**6.8**
20	DBW443	123	9.0	9.0	8.5	**8.8**
Mean			**5.5**	**5.5**	**5.4**	**5.5**
T. durum						
1	MACS4100(d)(I) (C)	111	0.0	0.0	0.0	**0.0**
2	MACS3949(d) (C)	113	0.0	0.0	0.0	**0.0**
3	HI8826(d)(I) (C)	124	0.0	0.0	0.0	**0.0**
4	HI8841(d)	108	0.0	0.0	0.0	**0.0**
Mean			**0.0**	**0.0**	**0.0**	**0.0**

Table 37 cont.

S. No.	Entries	Code	Dharwad	Pune	Niphad	Mean
Irrigated Late Sown						
T. aestivum						
1	HD3090 (C)	202	8.0	8.5	7.0	**7.8**
2	HD2932 (C)	204	3.0	4.5	5.0	**4.2**
3	RAJ4083 (C)	213	5.5	5.0	7.0	**5.8**
4	HI1633 (C)	223	6.0	6.0	7.5	**6.5**
5	MP1388	201	5.0	5.5	6.0	**5.5**
6	GW538	203	7.0	6.5	6.5	**6.7**
7	DBW395	205	5.0	3.0	5.5	**4.5**
8	MACS6805	206	6.0	6.5	6.5	**6.3**
9	HI1672	207	3.0	3.5	2.5	**3.0**
10	HI1674	208	3.0	4.0	2.5	**3.2**
11	UAS3023	209	6.0	7.5	7.0	**6.8**
12	AKAW5104	210	6.0	7.0	6.5	**6.5**
13	LOK79	211	7.0	7.0	6.5	**6.8**
14	HI1675	212	3.5	4.0	3.0	**3.5**
15	UAS3022	214	6.0	7.0	6.8	**6.6**
16	MP3557	215	5.5	6.0	6.5	**6.0**
17	NIAW4120	216	3.5	4.0	3.5	**3.7**
18	GW542	217	3.5	4.0	3.0	**3.5**
19	MP3556	218	4.0	4.5	4.0	**4.2**
20	PBW897	219	8.0	7.5	8.0	**7.8**
21	WH1310	220	8.0	8.0	8.0	**8.0**
22	HI1673	221	7.5	8.0	7.0	**7.5**
23	MACS6814	222	7.0	7.5	7.0	**7.2**
24	NIAW4114	224	4.0	4.0	3.0	**3.7**
25	DBW394	225	8.0	8.0	8.0	**8.0**
Mean			**5.6**	**5.9**	**5.8**	**5.7**
Restricted Irrigated Timely Sown						
T. aestivum						
1	NIAW4028*	302	6.5	7.5	5.5	**6.5**
2	DBW359*	306	3.5	4.0	8.0	**5.2**
3	HI1665*	307	6.0	5.5	4.0	**5.2**
4	NIAW3170 (C)	301	7.5	7.0	5.5	**6.7**
5	HI1605 (C)	310	3.5	5.0	1.5	**3.3**
6	DBW397	303	7.0	7.5	6.0	**6.8**
Mean			**5.7**	**6.1**	**5.1**	**5.6**
T. durum						
1	UAS478(d)*	305	0.0	0.0	0.0	**0.0**
2	HI8840(d)*	312	0.0	0.0	0.0	**0.0**
3	NIDW1149(d) (C)	309	0.0	0.0	0.0	**0.0**
4	UAS446(d) (C)	311	0.0	0.0	0.0	**0.0**
5	UAS481(d)	304	0.0	0.0	0.0	**0.0**
6	DDW61(d)	308	0.0	0.0	0.0	**0.0**
Mean			**0.0**	**0.0**	**0.0**	**0.0**

Table 38: Yellow pigment (ppm) of *T. durum* genotypes in Peninsular Zone (PZ) AVTs

S. No.	Entries	Code	Dharwad	Pune	Niphad	Mean
Irrigated Timely Sown						
T. aestivum						
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
Mean						
T. durum						
1	MACS4100(d)(I) (C)	111	6.72	5.79	7.59	**6.70**
2	MACS3949(d) (C)	113	6.52	6.55	6.36	**6.48**
3	HI8826(d)(I) (C)	124	4.96	6.48	7.24	**6.23**
4	HI8841(d)	108	6.40	6.54	7.35	**6.76**
Mean			**6.15**	**6.34**	**7.13**	**6.54**

Table 38 cont.

S. No.	Entries	Code	Dharwad	Pune	Niphad	Mean
Irrigated Late Sown						
T. aestivum						
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
Mean						
Restricted Irrigated Timely Sown						
T. aestivum						
1						
2						
3						
4						
5						
6						
Mean						
T. durum						
1	UAS478(d)*	305	7.06	7.32	6.72	**7.03**
2	HI8840(d)*	312	7.42	5.32	6.54	**6.43**
3	NIDW1149(d) (C)	309	6.06	5.65	6.04	**5.92**
4	UAS446(d) (C)	311	6.06	6.04	5.95	**6.02**
5	UAS481(d)	304	7.80	6.40	7.59	**7.26**
6	DDW61(d)	308	7.53	8.13	7.20	**7.62**
Mean			**6.99**	**6.48**	**6.67**	**6.71**

Table 39: Hardness index of *T. aestivum* and *T. durum* genotypes in Peninsular Zone (PZ) AVTs

S. No.	Entries	Code	Dharwad	Pune	Niphad	Mean
Irrigated Timely Sown						
T. aestivum						
1	MP1378*	112		77		**77**
2	GW322 (C)	103		86		**86**
3	DBW187 (C)	116		80		**80**
4	MACS6222 (C)	118		82		**82**
5	PBW891	101		79		**79**
6	NIAW4153	102		79		**79**
7	HD3469	104		73		**73**
8	AKAW5100	105		89		**89**
9	DBW444	106		77		**77**
10	UAS3020	107		81		**81**
11	WH1306	109		78		**78**
12	MACS6809	110		83		**83**
13	AKAW5314	114		81		**81**
14	NIAW4183	115		77		**77**
15	PWU15	117		77		**77**
16	UAS3021	119		83		**83**
17	MP1386	120		86		**86**
18	NWS2222	121		83		**83**
19	MACS6811	122		74		**74**
20	DBW443	123		88		**88**
Mean				**81**		**81**
T. durum						
1	MACS4100(d)(I) (C)	111		94		**94**
2	MACS3949(d) (C)	113		89		**89**
3	HI8826(d)(I) (C)	124		90		**90**
4	HI8841(d)	108		96		**96**
Mean				**92**		**92**

Table 39 cont.

S. No.	Entries	Code	Dharwad	Pune	Niphad	Mean
Irrigated Late Sown						
T. aestivum						
1	HD3090 (C)	202		84		**84**
2	HD2932 (C)	204		77		**77**
3	RAJ4083 (C)	213		79		**79**
4	HI1633 (C)	223		86		**86**
5	MP1388	201		79		**79**
6	GW538	203		70		**70**
7	DBW395	205		67		**67**
8	MACS6805	206		86		**86**
9	HI1672	207		69		**69**
10	HI1674	208		74		**74**
11	UAS3023	209		76		**76**
12	AKAW5104	210		84		**84**
13	LOK79	211		89		**89**
14	HI1675	212		72		**72**
15	UAS3022	214		90		**90**
16	MP3557	215		78		**78**
17	NIAW4120	216		74		**74**
18	GW542	217		79		**79**
19	MP3556	218		80		**80**
20	PBW897	219		73		**73**
21	WH1310	220		85		**85**
22	HI1673	221		84		**84**
23	MACS6814	222		78		**78**
24	NIAW4114	224		81		**81**
25	DBW394	225		83		**83**
Mean				**79**		**79**
Restricted Irrigated Timely Sown						
T. aestivum						
1	NIAW4028*	302		85		**85**
2	DBW359*	306		86		**86**
3	HI1665*	307		83		**83**
4	NIAW3170 (C)	301		38		**38**
5	HI1605 (C)	310		77		**77**
6	DBW397	303		85		**85**
Mean				**76**		**76**
T. durum						
1	UAS478(d)*	305		98		**98**
2	HI8840(d)*	312		94		**94**
3	NIDW1149(d) (C)	309		78		**78**
4	UAS446(d) (C)	311		91		**91**
5	UAS481(d)	304		91		**91**
6	DDW61(d)	308		94		**94**
Mean				**91**		**91**

Table 40: Grain iron content (ppm) of *T. aestivum* and *T. durum* genotypes in Peninsular Zone (PZ) AVTs

S. No.	Entries	Code	Dharwad	Pune	Niphad	Mean
Irrigated Timely Sown						
T. aestivum						
1	MP1378*	112	43.1	39.1	39.0	**40.4**
2	GW322 (C)	103	37.4	35.4	33.1	**35.3**
3	DBW187 (C)	116	41.6	37.1	37.8	**38.8**
4	MACS6222 (C)	118	42.0	39.5	36.5	**39.3**
5	PBW891	101	41.2	41.8	38.1	**40.4**
6	NIAW4153	102	44.2	33.9	36.2	**38.1**
7	HD3469	104	48.2	39.8	35.6	**41.2**
8	AKAW5100	105	44.4	38.8	33.4	**38.9**
9	DBW444	106	45.9	42.4	45.6	**44.6**
10	UAS3020	107	45.8	44.6	36.3	**42.2**
11	WH1306	109	41.3	41.3	38.6	**40.4**
12	MACS6809	110	46.2	37.4	39.0	**40.9**
13	AKAW5314	114	38.8	33.4	32.4	**34.9**
14	NIAW4183	115	41.5	31.4	34.0	**35.6**
15	PWU15	117	40.5	37.1	41.7	**39.8**
16	UAS3021	119	39.3	34.9	38.4	**37.5**
17	MP1386	120	43.6	37.9	41.6	**41.0**
18	NWS2222	121	35.5	35.9	31.5	**34.3**
19	MACS6811	122	41.2	34.7	35.1	**37.0**
20	DBW443	123	41.0	41.1	37.5	**39.9**
Mean			**42.1**	**37.9**	**37.1**	**39.0**
T. durum						
1	MACS4100(d)(I) (C)	111	40.1	34.1	36.2	**36.8**
2	MACS3949(d) (C)	113	38.5	35.5	34.5	**36.2**
3	HI8826(d)(I) (C)	124	39.3	34.6	34.2	**36.0**
4	HI8841(d)	108	41.4	36.0	37.3	**38.2**
Mean			**39.8**	**35.1**	**35.6**	**36.8**

Table 40 cont.

S. No.	Entries	Code	Dharwad	Pune	Niphad	Mean
Irrigated Late Sown						
T. aestivum						
1	HD3090 (C)	202	42.1	38.9	36.6	**39.2**
2	HD2932 (C)	204	41.7	33.4	35.4	**36.8**
3	RAJ4083 (C)	213	41.5	44.0	37.0	**40.8**
4	HI1633 (C)	223	45.6	40.2	41.1	**42.3**
5	MP1388	201	41.1	38.5	39.2	**39.6**
6	GW538	203	42.7	39.8	42.2	**41.6**
7	DBW395	205	44.2	34.8	38.2	**39.1**
8	MACS6805	206	44.3	40.7	39.5	**41.5**
9	HI1672	207	44.5	42.3	38.9	**41.9**
10	HI1674	208	42.1	40.7	38.5	**40.4**
11	UAS3023	209	39.9	39.8	33.2	**37.6**
12	AKAW5104	210	42.6	42.4	37.3	**40.8**
13	LOK79	211	45.7	40.0	39.7	**41.8**
14	HI1675	212	44.6	36.3	39.5	**40.1**
15	UAS3022	214	46.2	37.4	38.1	**40.6**
16	MP3557	215	45.0	35.4	35.3	**38.6**
17	NIAW4120	216	40.3	42.4	37.6	**40.1**
18	GW542	217	43.2	40.7	34.2	**39.4**
19	MP3556	218	47.3	38.8	34.3	**40.1**
20	PBW897	219	44.7	28.2	39.3	**37.4**
21	WH1310	220	47.1	32.4	33.5	**37.7**
22	HI1673	221	47.1	40.1	36.9	**41.4**
23	MACS6814	222	43.1	42.4	35.5	**40.3**
24	NIAW4114	224	46.0	38.6	37.4	**40.7**
25	DBW394	225	41.9	38.7	38.5	**39.7**
Mean			**43.8**	**38.7**	**37.5**	**40.0**
Restricted Irrigated Timely Sown						
T. aestivum						
1	NIAW4028*	302	40.2	41.5	37.6	**39.8**
2	DBW359*	306	39.1	41.7	37.5	**39.4**
3	HI1665*	307	40.8	42.0	40.9	**41.2**
4	NIAW3170 (C)	301	40.5	41.6	36.6	**39.6**
5	HI1605 (C)	310	39.2	37.9	38.5	**38.5**
6	DBW397	303	41.6	42.7	46.4	**43.6**
Mean			**40.2**	**41.2**	**39.6**	**40.4**
T. durum						
1	UAS478(d)*	305	40.7	40.8	37.8	**39.8**
2	HI8840(d)*	312	39.6	36.7	43.6	**40.0**
3	NIDW1149(d) (C)	309	40.8	39.5	40.3	**40.2**
4	UAS446(d) (C)	311	40.7	38.3	39.6	**39.5**
5	UAS481(d)	304	37.5	38.8	40.0	**38.8**
6	DDW61(d)	308	36.4	42.0	38.0	**38.8**
Mean			**39.3**	**39.4**	**39.9**	**39.5**

Table 41: Grain zinc content (ppm) of *T. aestivum* and *T. durum* genotypes in Peninsular Zone (PZ) AVTs

S. No.	Entries	Code	Dharwad	Pune	Niphad	Mean
Irrigated Timely Sown						
T. aestivum						
1	MP1378*	112	36.1	47.5	49.4	**44.3**
2	GW322 (C)	103	31.8	43.2	40.4	**38.5**
3	DBW187 (C)	116	40.1	42.6	35.2	**39.3**
4	MACS6222 (C)	118	30.6	46.1	44.5	**40.4**
5	PBW891	101	26.3	48.1	41.1	**38.5**
6	NIAW4153	102	39.5	35.8	37.5	**37.6**
7	HD3469	104	32.4	50.3	40.4	**41.0**
8	AKAW5100	105	33.9	46.5	39.8	**40.1**
9	DBW444	106	42.3	51.2	52.0	**48.5**
10	UAS3020	107	31.6	47.7	35.8	**38.4**
11	WH1306	109	29.6	44.1	43.7	**39.1**
12	MACS6809	110	36.2	40.4	47.2	**41.3**
13	AKAW5314	114	36.2	43.0	36.9	**38.7**
14	NIAW4183	115	28.5	34.2	46.2	**36.3**
15	PWU15	117	35.0	42.1	46.0	**41.0**
16	UAS3021	119	30.4	45.1	40.2	**38.6**
17	MP1386	120	35.0	46.5	45.3	**42.3**
18	NWS2222	121	24.0	39.1	33.8	**32.3**
19	MACS6811	122	33.3	39.5	38.7	**37.2**
20	DBW443	123	29.5	47.7	43.7	**40.3**
Mean			**33.1**	**44.0**	**41.9**	**39.7**
T. durum						
1	MACS4100(d)(I) (C)	111	34.9	47.1	43.2	**41.7**
2	MACS3949(d) (C)	113	34.3	43.5	43.3	**40.4**
3	HI8826(d)(I) (C)	124	41.6	44.1	42.7	**42.8**
4	HI8841(d)	108	29.9	45.3	47.1	**40.8**
Mean			**35.2**	**45.0**	**44.1**	**41.4**

Table 41 cont.

S. No.	Entries	Code	Dharwad	Pune	Niphad	Mean
Irrigated Late Sown						
T. aestivum						
1	HD3090 (C)	202	37.7	40.4	41.0	**39.7**
2	HD2932 (C)	204	42.2	41.4	42.5	**42.0**
3	RAJ4083 (C)	213	31.3	48.3	42.5	**40.7**
4	HI1633 (C)	223	42.6	47.5	45.0	**45.0**
5	MP1388	201	39.8	45.8	46.5	**44.0**
6	GW538	203	33.3	57.3	47.4	**46.0**
7	DBW395	205	34.3	46.8	44.3	**41.8**
8	MACS6805	206	38.2	47.3	44.8	**43.4**
9	HI1672	207	37.7	56.7	48.4	**47.6**
10	HI1674	208	36.2	43.3	44.4	**41.3**
11	UAS3023	209	37.9	46.6	42.7	**42.4**
12	AKAW5104	210	35.1	48.1	42.9	**42.0**
13	LOK79	211	32.3	44.8	41.2	**39.4**
14	HI1675	212	38.4	50.4	44.0	**44.3**
15	UAS3022	214	40.5	47.4	44.9	**44.3**
16	MP3557	215	43.3	49.5	43.7	**45.5**
17	NIAW4120	216	36.5	43.7	36.4	**38.9**
18	GW542	217	37.2	50.3	36.4	**41.3**
19	MP3556	218	40.3	49.4	41.2	**43.6**
20	PBW897	219	34.3	43.3	44.5	**40.7**
21	WH1310	220	40.5	39.6	43.8	**41.3**
22	HI1673	221	37.3	45.7	42.6	**41.9**
23	MACS6814	222	36.2	48.7	40.4	**41.8**
24	NIAW4114	224	37.2	43.0	43.3	**41.2**
25	DBW394	225	34.3	44.0	43.2	**40.5**
Mean			**37.4**	**46.8**	**43.1**	**42.4**
Restricted Irrigated Timely Sown						
T. aestivum						
1	NIAW4028*	302	38.9	44.0	37.6	**40.2**
2	DBW359*	306	49.8	45.9	37.5	**44.4**
3	HI1665*	307	41.7	50.4	40.9	**44.3**
4	NIAW3170 (C)	301	46.8	45.7	36.6	**43.0**
5	HI1605 (C)	310	42.5	45.0	38.5	**42.0**
6	DBW397	303	44.6	46.4	46.4	**45.8**
Mean			**44.1**	**46.2**	**39.6**	**43.3**
T. durum						
1	UAS478(d)*	305	47.0	47.8	37.8	**44.2**
2	HI8840(d)*	312	46.5	46.3	43.6	**45.5**
3	NIDW1149(d) (C)	309	41.7	46.8	40.3	**42.9**
4	UAS446(d) (C)	311	39.2	41.4	39.6	**40.1**
5	UAS481(d)	304	43.5	43.0	40.0	**42.2**
6	DDW61(d)	308	43.3	46.8	38.0	**42.7**
Mean			**43.5**	**45.4**	**39.9**	**42.9**

Table 42: Yellow berry (%) of *T. durum* genotypes in Peninsular Zone (PZ) AVTs

S. No.	Entries	Code	Dharwad	Pune	Niphad	Mean
Irrigated Timely Sown						
T. aestivum						
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
Mean						
T. durum						
1	MACS4100(d)(I) (C)	111	10	40	40	**30**
2	MACS3949(d) (C)	113	0	10	40	**17**
3	HI8826(d)(I) (C)	124	10	40	40	**30**
4	HI8841(d)	108	10	50	50	**37**
Mean			**8**	**35**	**43**	**28**

Table 42 cont.

S. No.	Entries	Code	Dharwad	Pune	Niphad	Mean
Irrigated Late Sown						
T. aestivum						
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
Mean						
Restricted Irrigated Timely Sown						
T. aestivum						
1						
2						
3						
4						
5						
6						
Mean						
T. durum						
1	UAS478(d)*	305	10	40	30	**27**
2	HI8840(d)*	312	0	30	10	**13**
3	NIDW1149(d) (C)	309	0	40	10	**17**
4	UAS446(d) (C)	311	0	30	5	**12**
5	UAS481(d)	304	0	50	20	**23**
6	DDW61(d)	308	0	50	10	**20**
Mean			**2**	**40**	**14**	**19**

Table 43: High Molecular weight Glutenin Subunits of *T. aestivum* genotypes in Northern Hill Zone AVTs

S. No.	Variety	Code	Glu-D1	Glu-A1	Glu-B1	Glu-1 Score
	Rainfed, Timely Sown					
1	VL907 (C)	101	5+10	1	17+18	10
2	VL2041(I) (C)	102	2+12	N	7+9	5
3	HPW349 (C)	105	5+10	1	7	8
4	VL892 (C)	107	2+12	2*	7	6
5	HS562 (C)	109	5+10	1	17+18	10

Table 44: High Molecular weight Glutenin Subunits of *T. aestivum* genotypes in North Western Plains Zone AVTs

S. No.	Variety	Code	Glu-D1	Glu-A1	Glu-B1	Glu-1 Score
	Irrigated, Timely Sown					
1	HD3386*	113	2+12	2*	7+8	8
2	PBW826 (I) (C)	108	2+12	2*	7+8	8
3	DBW 222 (C)	110	5+10	2*	17+18	10
4	HD 3086 (C)	105	5+10	1	17+18	10
5	HD 2967 (C)	103	5+10	2*	17+18	10
6	DBW 187 (C)	104	5+10	2*	17+18	10
	Irrigated, Late Sown					
1	DBW 173 (C)	201	5+10	2*	17+18	10
2	HD 3059 (C)	203	5+10	2*	17+18	10
3	JKW 261 (C)	204	5+10	N	7	6
4	PBW 771 (C)	207	5+10	N	7+9	7
	Restricted Irrigation, Timely Sown					
1	WH1402*	305	5+10	2*	7+9	9
2	HI 1654 (I) (C)	306	2+12	2*	7+8	8
3	HD 3369 (I) (C)	307	2+12	2*	7+8	8
4	HI 1653 (I) (C)	311	2+12	2*	7	6
5	NIAW 3170 (C)	312	2+12	N	17+18	6
6	PBW 644 (C)	308	2+12	1	7+8	8
7	DBW 296 (C)	302	5+10	2*	13+16	10

Table 45: High Molecular weight Glutenin Subunits of *T. aestivum* genotypes in North Eastern Plains Zone AVTs

S. No.	Variety	Code	Glu-D1	Glu-A1	Glu-B1	Glu-1 Score
	Irrigated, Timely Sown					
1	HD3388*	106	5+10	2*	7+9	9
2	PBW 826 (I) (C)	102	2+12	2*	7+8	8
3	HD 3249 (C)	110	5+10	N	17+18	8
4	DBW 187 (C)	104	5+10	2*	17+18	10
5	HD 2967 (C)	109	5+10	2*	17+18	10
6	DBW 222 (C)	107	5+10	2*	17+18	10
7	HD 3086 (C)	105	5+10	1	17+18	10
	Restricted Irrigation, Timely Sown					
1	HI 1612 (C)	301	5+10	2*	7	8
2	K 1317 (C)	303	2+12	N	7	4
3	DBW 252 (C)	305	5+10	N	7	6
4	HD 3171 (C)	302	5+10	2*	7	8
5	HD 3293 (C)	304	5+10	2*	7	8

Table 46: High Molecular weight Glutenin Subunits of *T. aestivum* genotypes in Central Zone AVTs

S. No.	Variety	Code	Glu-D1	Glu-A1	Glu-B1	Glu-1 Score
	Irrigated, Timely Sown					
1	GW547*	103	2+12	2*	7+8	8
2	NWS2194*	104	5+10	1	7+8	10
3	HI 1650 (I) (C)	102	2+12	2*	7+9	7
4	MACS 6768 (I) (C)	106	2+12	2*	7+9	7
5	GW 322 (C)	110	2+12	2*	7+8	8
6	HI 1636 (C)	109	2+12	N	7+8	6
7	GW 513 (C)	105	5+10	N	17+18	8
	Irrigated, Late Sown					
1	CG1029 (C)	201	2+12	2*	7+8	8
2	MP4010 (C)	202	5+10	2*	7	8
3	HD2932 (C)	203	2+12	2*	17+18	8
4	HI1634 (C)	209	5+10	2*	7	8
	Restricted Irrigation, Timely Sown					
1	DBW359*	302	5+10	2*	7+8	10
2	CG1040*	306	2+12	2*	7+8	8
3	CG 1036 (I) (C)	304	2+12	2*	7	6
4	HI 1655Q (I) (C)	305	2+12	2*	7	6
5	DBW 110 (C)	308	5+10	1	7	8
6	MP 3288 (C)	301	2+12	2*	7+9	7

Table 47: High Molecular weight Glutenin Subunits of *T. aestivum* genotypes in Peninsular Zone AVTs

S. No.	Variety	Code	Glu-D1	Glu-A1	Glu-B1	Glu-1 Score
	Irrigated, Timely Sown					
1	MP1378*	112	2+12	2*	7+9	7
2	DBW187 (C)	116	5+10	2*	17+18	10
3	GW 322 (C)	103	2+12	2*	7+8	8
4	MACS 6222 (C)	118	2+12	2*	7+9	7
	Irrigated, Late Sown					
1	HD 2932 (C)	204	2+12	2*	17+18	8
2	RAJ 4083 (C)	213	5+10	1	7+8	10
3	HD 3090 (C)	202	5+10	1	7	8
4	HI 1633 (C)	223	5+10	2*	7	8
	Restricted Irrigation, Timely Sown					
1	NIAW4028*	302	5+10	2*	6+8	8
2	DBW359*	306	5+10	2*	7+8	10
3	HI1665*	307	2+12	2*	7+8	8
4	HI 1605 (C)	310	5+10	2*	7	8
5	NIAW 3170 (C)	301	2+12	N	17+18	6

Table 48: High Molecular weight Glutenin Subunits of *T. aestivum* genotypes in North Western Plains Zone HYPTs

S. No.	Variety	Code	Glu-D1	Glu-A1	Glu-B1	Glu-1 Score
1	PBW 872 (I) (C)	101	2+12	2*	7+8	8
2	DBW 371 (I) (C)	102	2+12	2*	7+9	7
3	DBW 370 (I) (C)	105	2+12	2*	7+9	7
4	DBW 372 (I) (C)	104	2+12	2*	7	6
5	DBW 303 (C)	107	5+10	2*	7	8
6	DBW 187 (C)	103	5+10	2*	17+18	10

Table 49: High Molecular weight Glutenin Subunits of *T. aestivum* genotypes in Central Zone HYPTs

S. No.	Variety	Code	Glu-D1	Glu-A1	Glu-B1	Glu-1 Score
1	DBW377*	203	2+12	2*	7+8	8
2	GW 322 (C)	206	2+12	2*	7+8	8
3	DBW 303 (C)	201	5+10	2*	7	8
4	DBW 187 (C)	205	5+10	2*	17+18	10

Section B

SPECIAL TRIALS

High Yield Potential Trial (HYPT) (Tables 1-16)

Under this trial, 7 entries from 4 centres (Karnal, Ludhiana, Delhi and Hisar) in **NWPZ** and 6 entries from 4 centres in CZ (Vijapur, Junagarh, P'Kheda and Indore) were evaluated for grain appearance, hectolitre weight, protein content, sedimentation value, hardness index, phenol test and Iron & Zinc content and IInd year entries along with checks were evaluated for chapati, bread, biscuit, gluten content and pasta quality.

Table 1: Grain appearance score (Max-10) of *T. aestivum* genotypes of HYPT NWPZ trial

S. No.	Entries	Code	Ludhiana	Delhi	Hisar	Karnal	Mean
1	PBW872(I) (C)	101	6.2	6.0	7.2	6.4	**6.5**
2	DBW371(I) (C)	102	6.6	5.6	7.0	6.4	**6.4**
3	DBW187 (C)	103	6.0	5.6	6.4	6.0	**6.0**
4	DBW372(I) (C)	104	5.8	5.8	6.8	6.0	**6.1**
5	DBW370(I) (C)	105	6.2	6.0	6.6	6.0	**6.2**
6	DBW303 (C)	107	5.8	5.2	5.8	6.2	**5.8**
7	DBW380	106	5.8	5.8	5.8	6.2	**5.9**
Mean			**6.1**	**5.7**	**6.5**	**6.2**	**6.1**

Table 2: Hectolitre weight (Kg/hl) of *T. aestivum* genotypes of HYPT NWPZ trial

S. No.	Entries	Code	Ludhiana	Delhi	Hisar	Karnal	Mean
1	PBW872(I) (C)	101	77.8	78.3	79.7	78.8	**78.7**
2	DBW371(I) (C)	102	77.9	76.2	79.4	78.6	**78.0**
3	DBW187 (C)	103	75.1	74.7	76.2	77.1	**75.8**
4	DBW372(I) (C)	104	78.9	77.3	79.8	78.1	**78.5**
5	DBW370(I) (C)	105	74.9	75.6	76.7	75.8	**75.8**
6	DBW380	106	76.4	76.0	75.9	79.4	**76.9**
7	DBW303 (C)	107	78.7	74.9	78.7	79.2	**77.9**
Mean			**77.1**	**76.1**	**78.1**	**78.1**	**77.4**

Table 3: Protein content (%) at 12% moisture basis of *T. aestivum* genotypes of HYPT NWPZ trial

S. No.	Entries	Code	Ludhiana	Delhi	Hisar	Karnal	Mean
1	PBW872(I) (C)	101	11.4	13.0	11.4	10.8	**11.7**
2	DBW371(I) (C)	102	11.4	14.1	11.7	11.3	**12.1**
3	DBW187 (C)	103	12.5	14.5	12.6	11.6	**12.8**
4	DBW372(I) (C)	104	12.0	14.1	11.7	12.5	**12.6**
5	DBW370(I) (C)	105	11.8	13.1	11.5	11.4	**11.9**
6	DBW303 (C)	107	11.7	13.6	12.5	11.5	**12.3**
7	DBW380	106	12.2	14.4	12.5	11.0	**12.5**
Mean			**11.9**	**13.8**	**12.0**	**11.4**	**12.3**

Table 4: Sedimentation value (ml) of *T. aestivum* genotypes of HYPT NWPZ trial

S. No.	Entries	Code	Ludhiana	Delhi	Hisar	Karnal	Mean
1	PBW872(I) (C)	101	56	60	50	55	**55**
2	DBW371(I) (C)	102	60	67	55	55	**59**
3	DBW187 (C)	103	69	66	65	69	**67**
4	DBW372(I) (C)	104	65	61	55	57	**59**
5	DBW370(I) (C)	105	51	55	47	53	**52**
6	DBW303 (C)	107	61	62	57	62	**60**
7	DBW380	106	66	65	61	57	**62**
Mean			**61**	**62**	**56**	**58**	**59**

Table 5: Hardness index of *T. aestivum* genotypes of HYPT NWPZ trial

S. No.	Entries	Code	Ludhiana	Delhi	Hisar	Karnal	Mean
1	PBW872(I) (C)	101				70	**70**
2	DBW371(I) (C)	102				68	**68**
3	DBW187 (C)	103				67	**67**
4	DBW372(I) (C)	104				72	**72**
5	DBW370(I) (C)	105				66	**66**
6	DBW303 (C)	107				68	**68**
7	DBW380	106				70	**70**
Mean						**69**	**69**

Table 6: Phenol test score (Max-10) of *T. aestivum* genotypes of HYPT NWPZ trial

S. No.	Entries	Code	Ludhiana	Delhi	Hisar	Karnal	Mean
1	PBW872(I) (C)	101	7.5	7.5	6.5	6.5	**7.0**
2	DBW371(I) (C)	102	4.0	3.0	3.0	3.5	**3.4**
3	DBW187 (C)	103	7.5	6.5	6.5	6.5	**6.8**
4	DBW372(I) (C)	104	6.5	6.5	6.0	6.0	**6.3**
5	DBW370(I) (C)	105	5.5	3.0	4.0	5.0	**4.4**
6	DBW303 (C)	107	6.5	7.5	6.0	5.5	**6.4**
7	DBW380	106	7.5	7.5	6.5	6.0	**6.9**
Mean			**6.4**	**5.9**	**5.5**	**5.6**	**5.9**

Table 7: Grain iron content (ppm) of *T. aestivum* genotypes of HYPT NWPZ trial

S. No.	Entries	Code	Ludhiana	Delhi	Hisar	Karnal	Mean
1	PBW872(I) (C)	101	40.4	49.2	35.0	35.1	**39.9**
2	DBW371(I) (C)	102	40.2	41.4	35.7	43.5	**40.2**
3	DBW187 (C)	103	34.0	45.3	35.2	40.7	**38.8**
4	DBW372(I) (C)	104	36.5	44.9	29.9	40.0	**37.8**
5	DBW370(I) (C)	105	36.4	52.3	33.3	35.9	**39.5**
6	DBW303 (C)	107	37.4	46.9	34.0	36.2	**38.6**
7	DBW380	106	40.2	47.6	35.1	37.3	**40.1**
Mean			**37.9**	**46.8**	**34.0**	**38.4**	**39.3**

Table 8: Grain zinc content (ppm) of *T. aestivum* genotypes of HYPT NWPZ trial

S. No.	Entries	Code	Ludhiana	Delhi	Hisar	Karnal	Mean
1	PBW872(I) (C)	101	51.3	58.2	40.1	30.2	**45.0**
2	DBW371(I) (C)	102	55.3	49.7	36.6	31.6	**43.3**
3	DBW187 (C)	103	53.3	60.0	36.4	28.5	**44.6**
4	DBW372(I) (C)	104	46.4	61.5	36.1	31.8	**44.0**
5	DBW370(I) (C)	105	44.6	63.5	38.9	26.4	**43.4**
6	DBW303 (C)	107	46.5	60.4	44.4	29.5	**45.2**
7	DBW380	106	58.5	56.5	38.0	28.3	**45.3**
Mean			**50.8**	**58.5**	**38.6**	**29.5**	**44.4**

Table 9: Grain appearance score (Max-10) of *T. aestivum* genotypes of HYPT CZ trial

S. No.	Entries	Code	Vijapur	Junagarh	Indore	P.kheda	Mean
1	DBW377*	203	8.0	8.0	6.0	6.2	**7.1**
2	DBW303 (C)	201	7.0	8.0	7.0	6.4	**7.1**
3	DBW187 (C)	205	8.2	8.0	6.4	6.4	**7.3**
4	GW322 (C)	206	8.2	8.2	6.2	6.2	**7.2**
5	GW543	202	8.4	8.2	7.4	7.0	**7.8**
6	CG1044	204	8.4	8.2	6.4	6.8	**7.5**
Mean			**8.0**	**8.1**	**6.6**	**6.5**	**7.3**

Table 10: Hectolitre weight (Kg/hl) of *T. aestivum* genotypes of HYPT CZ trial

S. No.	Entries	Code	Vijapur	Junagarh	Indore	P.kheda	Mean
1	DBW377*	203	81.1	80.8	79.5	80.7	**80.5**
2	DBW303 (C)	201	82.8	83.5	80.9	83.3	**82.6**
3	DBW187 (C)	205	78.7	82.4	79.5	81.0	**80.4**
4	GW322 (C)	206	82.8	82.0	79.4	82.2	**81.6**
5	GW543	202	81.9	82.2	79.9	83.0	**81.8**
6	CG1044	204	81.8	82.2	80.8	83.3	**82.0**
Mean			**81.5**	**82.2**	**80.0**	**82.3**	**81.5**

Table 11: Protein content (%) at 12% moisture basis of *T. aestivum* genotypes of HYPT CZ trial

S. No.	Entries	Code	Vijapur	Junagarh	Indore	P.kheda	Mean
1	DBW377*	203	10.3	12.4	10.3	10.4	**10.9**
2	DBW303 (C)	201	10.9	12.7	10.4	10.5	**11.1**
3	DBW187 (C)	205	10.6	13.4	10.7	10.2	**11.2**
4	GW322 (C)	206	10.1	11.6	9.1	10.0	**10.2**
5	GW543	202	11.5	12.2	9.9	10.5	**11.0**
6	CG1044	204	11.9	11.9	10.0	9.9	**10.9**
Mean			**10.9**	**12.4**	**10.1**	**10.2**	**10.9**

Table 12: Sedimentation value (ml) of *T. aestivum* genotypes of HYPT CZ trial

S. No.	Entries	Code	Vijapur	Junagarh	Indore	P.kheda	Mean
1	DBW377*	203	54	57	49	52	**53**
2	DBW303 (C)	201	57	55	56	57	**56**
3	DBW187 (C)	205	71	62	53	51	**59**
4	GW322 (C)	206	43	38	40	41	**40**
5	GW543	202	54	53	50	51	**52**
6	CG1044	204	58	52	61	53	**56**
Mean			**56**	**53**	**52**	**51**	**53**

Table 13: Hardness index of *T. aestivum* genotypes of HYPT CZ trial

S. No.	Entries	Code	Vijapur	Junagarh	Indore	P.kheda	Mean
1	DBW377*	203		78			**78**
2	DBW303 (C)	201		83			**83**
3	DBW187 (C)	205		84			**84**
4	GW322 (C)	206		88			**88**
5	GW543	202		77			**77**
6	CG1044	204		86			**86**
Mean				**83**			**83**

Table 14: Phenol test score (Max-10) of *T. aestivum* genotypes of HYPT CZ trial

S. No.	Entries	Code	Vijapur	Junagarh	Indore	P.kheda	Mean
1	DBW377*	203	6.5	6.0	8.0	8.0	**7.1**
2	DBW303 (C)	201	4.0	4.5	5.0	7.0	**5.1**
3	DBW187 (C)	205	5.5	6.5	7.5	7.5	**6.8**
4	GW322 (C)	206	5.0	4.5	5.5	7.0	**5.5**
5	GW543	202	3.5	3.0	3.0	3.5	**3.3**
6	CG1044	204	6.5	5.5	7.0	7.0	**6.5**
Mean			**5.2**	**5.0**	**6.0**	**6.7**	**5.7**

Table 15: Grain iron content (ppm) of *T. aestivum* genotypes of HYPT CZ trial

S. No.	Entries	Code	Vijapur	Junagarh	Indore	P.kheda	Mean
1	DBW377*	203	31.1	36.9	39.4	35.3	**35.7**
2	DBW303 (C)	201	33.1	42.9	38.9	37.2	**38.0**
3	DBW187 (C)	205	33.3	38.0	39.0	34.2	**36.1**
4	GW322 (C)	206	33.9	38.1	33.9	35.0	**35.2**
5	GW543	202	34.5	41.3	40.9	36.3	**38.3**
6	CG1044	204	37.0	40.1	34.8	34.3	**36.6**
Mean			**33.8**	**39.6**	**37.8**	**35.4**	**36.6**

Table 16: Grain zinc content (ppm) of *T. aestivum* genotypes of HYPT CZ trial

S. No.	Entries	Code	Vijapur	Junagarh	Indore	P.kheda	Mean
1	DBW377*	203	37.0	37.5	33.3	29.9	**34.4**
2	DBW303 (C)	201	39.5	41.2	32.0	31.3	**36.0**
3	DBW187 (C)	205	35.6	36.0	31.8	34.6	**34.5**
4	GW322 (C)	206	38.6	47.0	34.8	31.9	**38.1**
5	GW543	202	37.7	40.2	33.8	32.2	**36.0**
6	CG1044	204	37.3	41.6	29.5	29.0	**34.4**
Mean			**37.6**	**40.6**	**32.5**	**31.5**	**35.6**

Section C

End-product Quality (AVT and HYPT)

Chapati

Bread

Biscuit

Gluten

Pasta

AVT (Tables 1-8b)
HYPT CZ (Tables 9a-9g)

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

North Western Plains Zone

S. No.	Variety	Code	Ludhiana	P.nagar	Delhi	Hisar	Karnal	Durgapura	Mean
	Irrigated Timely Sown								
1	HD3386*	113	7.5	7.4	6.4	6.5	7.3	8.0	**7.2**
2	HD2967 (C)	103	8.2	7.7	7.3	6.5	7.8	8.0	**7.6**
3	DBW187 (C)	104	7.1	7.9	6.8	6.2	7.5	7.3	**7.1**
4	HD3086 (C)	105	7.1	7.3	7.5	6.8	7.9	6.9	**7.2**
5	PBW826(I) (C)	108	8.2	7.6	6.5	6.7	7.9	7.5	**7.4**
6	DBW222 (C)	110	7.7	7.3	7.3	6.3	7.1	7.9	**7.3**
Mean			**7.6**	**7.5**	**7.0**	**6.5**	**7.6**	**7.6**	**7.3**
	Restricted Irrigated Timely Sown								
1	WH1402*	305	7.8	7.4	7.1	7.4	7.4	7.7	**7.4**
2	DBW296 (C)	302	8.0	7.7	6.8	7.0	7.5	7.1	**7.3**
3	HI1654(I) (C)	306	7.9	7.0	7.4	7.8	7.9	7.5	**7.6**
4	HD3369(I) (C)	307	7.4	7.7	6.8	8.1	7.7	7.5	**7.5**
5	PBW644 (C)	308	7.4	7.3	7.4	7.4	8.1	7.3	**7.5**
6	HI1653(I) (C)	311	7.5	7.4	7.8	7.8	7.1	8.0	**7.6**
7	NIAW3170 (C)	312	6.9	7.3	7.0	7.5	8.0	7.9	**7.4**
Mean			**7.6**	**7.4**	**7.2**	**7.6**	**7.7**	**7.5**	**7.5**

North Eastern Plains Zone

S. No.	Variety	Code	Kanpur	Varanasi	Pusa	Sabour	Mean
	Irrigated Timely Sown						
1	HD3388*	106	7.8	8.0	8.1	8.3	**8.0**
2	PBW826(I) (C)	102	7.6	8.2	8.0	7.5	**7.8**
3	DBW187 (C)	104	8.1	7.4	7.7	7.4	**7.6**
4	HD3086 (C)	105	7.9	7.7	7.6	7.6	**7.7**
5	DBW222 (C)	107	8.1	8.1	8.1	8.2	**8.1**
6	HD2967 (C)	109	7.5	8.0	7.6	8.0	**7.8**
7	HD3249 (C)	110	7.4	8.1	7.3	7.3	**7.5**
Mean			**7.8**	**7.9**	**7.8**	**7.8**	**7.8**

Central Zone

S. No.	Variety	Code	Vijapur	Junagarh	Indore	P.kheda	Mean
	Irrigated Timely Sown						
1	GW547*	102	8.2	7.9	8.3	8.3	**8.2**
2	NWS2194*	103	8.4	7.3	8.0	8.2	**7.9**
3	HI1650(I) (C)	104	8.4	7.8	7.9	8.3	**8.1**
4	GW513 (C)	105	8.2	8.1	7.2	8.2	**7.9**
5	MACS6768(I) (C)	106	8.3	7.9	8.3	8.4	**8.2**
6	HI1636 (C)	109	8.3	8.1	7.3	8.3	**8.0**
7	GW322 (C)	110	8.0	7.8	7.6	7.8	**7.8**
Mean			**8.2**	**7.8**	**7.8**	**8.2**	**8.0**
	Restricted Irrigated Timely Sown						
1	DBW359*	301	8.2	7.5	7.6	7.5	**7.7**
2	CG1040*	302	8.0	8.1	7.8	8.3	**8.0**
3	MP3288 (C)	304	8.3	8.2	7.2	8.1	**7.9**
4	CG1036(I) (C)	305	8.4	8.0	7.5	7.9	**8.0**
5	HI1655(I) (C)	306	8.1	7.9	7.4	8.0	**7.8**
6	DBW110 (C)	308	8.4	8.2	7.7	7.3	**7.9**
Mean			**8.2**	**8.0**	**7.5**	**7.8**	**7.9**

Peninsular Zone

S. No.	Variety	Code	Dharwad	Pune	Niphad	Mean
	Irrigated Timely Sown					
1	MP1378*	103	7.8	7.4	7.7	**7.7**
2	GW322 (C)	112	8.0	8.0	7.8	**7.9**
3	DBW187 (C)	116	8.0	8.0	7.7	**7.9**
4	MACS6222 (C)	118	7.5	7.9	8.1	**7.8**
Mean			**7.8**	**7.8**	**7.8**	**7.8**
	Restricted Irrigated Timely Sown					
1	NIAW4028*	301	8.2	6.7	7.5	**7.5**
2	DBW359*	302	7.0	7.4	7.9	**7.4**
3	HI1665*	306	6.7	8.2	7.1	**7.3**
4	NIAW3170 (C)	307	7.8	7.4	8.0	**7.7**
5	HI1605 (C)	310	7.6	7.2	7.3	**7.4**
Mean			**7.4**	**7.4**	**7.6**	**7.5**

Table 2: Bread quality loaf volume (cc) of *T. aestivum* genotypes in AVTs

North Western Plains Zone

S. No.	Variety	Code	Ludhiana	P.nagar	Delhi	Hisar	Karnal	Durgapura	Mean
	Irrigated Timely Sown								
1	HD3386*	113	590	545	575	505	565	565	**558**
2	HD2967 (C)	103	575	590	585	520	605	600	**579**
3	DBW187 (C)	104	570	575	570	505	505	570	**549**
4	HD3086 (C)	105	605	535	590	525	575	585	**569**
5	PBW826(I) (C)	108	575	515	610	480	530	545	**543**
6	DBW222 (C)	110	565	515	575	525	535	585	**550**
Mean			**580**	**546**	**584**	**510**	**553**	**575**	**558**
	Restricted Irrigated Timely Sown								
1	WH1402*	305	575	625	610	515	580	645	**592**
2	DBW296 (C)	302	610	630	645	600	580	595	**610**
3	HI1654(I) (C)	306	565	590	610	600	590	625	**597**
4	HD3369(I) (C)	307	540	620	515	560	530	615	**563**
5	PBW644 (C)	308	510	535	555	520	530	590	**540**
6	HI1653(I) (C)	311	540	580	605	465	565	610	**561**
7	NIAW3170 (C)	312	545	490	590	535	500	545	**534**
Mean			**555**	**581**	**590**	**542**	**554**	**604**	**571**

North Eastern Plains Zone

S. No.	Variety	Code	Kanpur	Varanasi	Pusa	Sabour	Mean
	Irrigated Timely Sown						
1	HD3388*	106	585	570	580	510	**561**
2	PBW826(I) (C)	102	625	620	500	545	**573**
3	DBW187 (C)	104	625	585	550	520	**570**
4	HD3086 (C)	105	610	600	540	550	**575**
5	DBW222 (C)	107	580	615	570	560	**581**
6	HD2967 (C)	109	630	575	600	560	**591**
7	HD3249 (C)	110	595	585	550	545	**569**
Mean			**607**	**593**	**556**	**541**	**574**

Central Zone

S. No.	Variety	Code	Vijapur	Junagarh	Indore	P.kheda	Mean
	Irrigated Timely Sown						
1	GW547*	103	600	410	520	585	**529**
2	NWS2194*	104	550	475	560	465	**513**
3	HI1650(I) (C)	102	445	410	465	475	**449**
4	GW513 (C)	105	385	435	385	455	**415**
5	MACS6768(I) (C)	106	380	490	355	445	**418**
6	HI1636 (C)	109	415	505	450	530	**475**
7	GW322 (C)	110	450	485	455	480	**468**
Mean			**461**	**459**	**456**	**491**	**466**
	Restricted Irrigated Timely Sown						
1	DBW359*	302	435	490	410	420	**439**
2	CG1040*	306	485	500	490	415	**473**
3	MP3288 (C)	301	490	545	405	420	**465**
4	CG1036(I) (C)	304	440	555	435	375	**451**
5	HI1655(I) (C)	305	430	425	380	370	**401**
6	DBW110 (C)	308	525	575	470	455	**506**
Mean			**468**	**515**	**432**	**409**	**456**

Peninsular Zone

S. No.	Variety	Code	Dharwad	Pune	Niphad	Mean
	Irrigated Timely Sown					
1	MP1378*	112	565	500	535	**533**
2	GW322 (C)	103	475	505	485	**488**
3	DBW187 (C)	116	550	535	475	**520**
4	MACS6222 (C)	118	510	460	470	**480**
Mean			**525**	**500**	**491**	**505**
	Restricted Irrigated Timely Sown					
1	NIAW4028*	302	560	445	515	**507**
2	DBW359*	306	665	565	505	**578**
3	HI1665*	307	440	425	425	**430**
4	NIAW3170 (C)	301	540	490	500	**510**
5	HI1605 (C)	310	580	535	440	**518**
Mean			**557**	**492**	**477**	**509**

Table 3: Bread quality score (Max 10) of *T. aestivum* genotypes in AVTs

North Western Plains Zone

S. No.	Variety	Code	Ludhiana	P.nagar	Delhi	Hisar	Karnal	Durgapura	Mean
	Irrigated Timely Sown								
1	HD3386*	113	7.8	6.3	7.0	5.3	6.7	7.0	**6.7**
2	HD2967 (C)	103	7.8	7.6	7.8	6.4	7.5	7.6	**7.4**
3	DBW187 (C)	104	7.2	7.2	7.7	5.6	5.9	7.3	**6.8**
4	HD3086 (C)	105	7.9	6.4	7.3	6.4	7.1	7.1	**7.0**
5	PBW826(I) (C)	108	7.4	5.7	7.4	5.3	5.9	6.3	**6.3**
6	DBW222 (C)	110	7.0	5.7	6.3	5.9	5.5	7.0	**6.2**
Mean			**7.5**	**6.5**	**7.2**	**5.8**	**6.4**	**7.0**	**6.8**
	Restricted Irrigated Timely Sown								
1	WH1402*	305	7.1	8.4	8.2	6.2	7.3	9.0	**7.7**
2	DBW296 (C)	302	7.8	8.4	8.4	7.6	7.4	6.8	**7.7**
3	HI1654(I) (C)	306	6.7	7.8	7.4	8.0	7.6	8.4	**7.7**
4	HD3369(I) (C)	307	6.4	8.4	5.9	6.9	6.6	8.3	**7.1**
5	PBW644 (C)	308	5.8	6.0	6.6	5.5	5.5	7.4	**6.1**
6	HI1653(I) (C)	311	6.8	7.0	7.9	5.6	7.2	8.1	**7.1**
7	NIAW3170 (C)	312	6.4	4.9	6.9	5.6	4.9	6.0	**5.8**
Mean			**6.7**	**7.3**	**7.3**	**6.5**	**6.7**	**7.7**	**7.0**

North Eastern Plains Zone

S. No.	Variety	Code	Kanpur	Varanasi	Pusa	Sabour	Mean
	Irrigated Timely Sown						
1	HD3388*	106	8.2	7.6	7.9	5.5	**7.3**
2	PBW826(I) (C)	102	9.0	7.6	5.8	6.4	**7.2**
3	DBW187 (C)	104	7.4	7.9	7.2	6.0	**7.1**
4	HD3086 (C)	105	8.5	8.0	6.8	6.5	**7.4**
5	DBW222 (C)	107	8.1	7.6	7.0	7.0	**7.4**
6	HD2967 (C)	109	8.8	8.0	8.1	7.3	**8.1**
7	HD3249 (C)	110	8.6	8.6	7.0	6.4	**7.7**
Mean			**8.4**	**7.9**	**7.1**	**6.4**	**7.5**

Central Zone

S. No.	Variety	Code	Vijapur	Junagarh	Indore	P.kheda	Mean
	Irrigated Timely Sown						
1	GW547*	103	7.6	4.2	6.5	7.6	**6.5**
2	NWS2194*	104	6.9	5.7	7.6	5.2	**6.4**
3	HI1650(I) (C)	102	4.7	4.1	5.2	5.6	**4.9**
4	GW513 (C)	105	3.2	4.5	3.1	5.5	**4.1**
5	MACS6768(I) (C)	106	3.2	5.9	3.1	4.7	**4.2**
6	HI1636 (C)	109	4.5	6.3	5.5	6.5	**5.7**
7	GW322 (C)	110	5.3	5.9	5.5	5.4	**5.5**
Mean			**5.1**	**5.2**	**5.2**	**5.8**	**5.3**
	Restricted Irrigated Timely Sown						
1	DBW359*	302	4.9	5.8	4.3	4.3	**4.8**
2	CG1040*	306	5.6	5.9	6.1	4.5	**5.5**
3	MP3288 (C)	301	5.7	6.6	4.0	4.3	**5.1**
4	CG1036(I) (C)	304	5.1	7.2	5.3	3.8	**5.4**
5	HI1655(I) (C)	305	4.5	4.4	3.2	3.8	**4.0**
6	DBW110 (C)	308	6.7	7.2	5.7	5.5	**6.3**
Mean			**5.4**	**6.2**	**4.8**	**4.4**	**5.2**

Peninsular Zone

S. No.	Variety	Code	Dharwad	Pune	Niphad	Mean
	Irrigated Timely Sown					
1	MP1378*	112	6.4	4.7	6.3	**5.8**
2	GW322 (C)	103	5.2	5.6	5.3	**5.4**
3	DBW187 (C)	116	6.2	6.2	5.5	**5.9**
4	MACS6222 (C)	118	5.9	4.9	4.7	**5.2**
Mean			**5.9**	**5.3**	**5.5**	**5.6**
	Restricted Irrigated Timely Sown					
1	NIAW4028*	302	7.0	4.8	5.6	**5.8**
2	DBW359*	306	8.6	7.8	5.6	**7.3**
3	HI1665*	307	4.5	4.1	4.4	**4.3**
4	NIAW3170 (C)	301	6.2	5.3	5.1	**5.5**
5	HI1605 (C)	310	8.1	6.3	4.9	**6.4**
Mean			**6.9**	**5.6**	**5.1**	**5.9**

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

North Western Plains Zone

S. No.	Variety	Code	Ludhiana	P.nagar	Delhi	Hisar	Karnal	Durgapura	Mean
	Irrigated Timely Sown								
1	HD3386*	113	7.8	7.9	8.2	8.5	8.1	9.3	**8.3**
2	HD2967 (C)	103	9.9	6.9	8.8	9.4	8.7	9.8	**8.9**
3	DBW187 (C)	104	8.7	8.9	7.6	8.9	8.8	8.7	**8.6**
4	HD3086 (C)	105	8.5	8.1	7.8	9.2	8.0	8.2	**8.3**
5	PBW826(I) (C)	108	8.4	9.1	8.1	8.0	9.0	8.2	**8.5**
6	DBW222 (C)	110	7.5	8.2	9.3	8.8	9.4	9.1	**8.7**
Mean			**8.5**	**8.2**	**8.3**	**8.8**	**8.7**	**8.9**	**8.6**
	Restricted Irrigated Timely Sown								
1	WH1402*	305	11.7	9.4	9.8	10.1	8.1	8.8	**9.7**
2	DBW296 (C)	302	9.4	12.1	11.1	13.6	10.8	9.7	**11.1**
3	HI1654(I) (C)	306	8.7	10.2	7.4	11.0	12.1	11.3	**10.1**
4	HD3369(I) (C)	307	10.3	10.4	8.8	9.9	9.7	9.2	**9.7**
5	PBW644 (C)	308	10.2	9.4	8.6	9.2	8.6	8.8	**9.1**
6	HI1653(I) (C)	311	9.5	8.9	8.5	8.7	9.2	8.7	**8.9**
7	NIAW3170 (C)	312	8.7	13.9	15.1	12.0	11.0	10.6	**11.9**
Mean			**9.8**	**10.6**	**9.9**	**10.7**	**9.9**	**9.6**	**10.1**

North Eastern Plains Zone

S. No.	Variety	Code	Kanpur	Varanasi	Pusa	Sabour	Mean
	Irrigated Timely Sown						
1	HD3388*	106	9.7	7.4	8.7	8.3	**8.5**
2	PBW826(I) (C)	102	8.6	8.3	9.5	8.3	**8.7**
3	DBW187 (C)	104	9.5	8.5	9.5	8.8	**9.1**
4	HD3086 (C)	105	9.2	8.8	8.6	8.1	**8.7**
5	DBW222 (C)	107	9.9	7.2	9.0	8.5	**8.6**
6	HD2967 (C)	109	9.9	8.2	8.9	9.4	**9.1**
7	HD3249 (C)	110	9.9	9.5	8.8	8.7	**9.2**
Mean			**9.5**	**8.3**	**9.0**	**8.6**	**8.8**

Central Zone

S. No.	Variety	Code	Vijapur	Junagarh	Indore	P.kheda	Mean
	Irrigated Timely Sown						
1	GW547*	103	8.4	8.5	7.6	8.6	**8.3**
2	NWS2194*	104	9.3	8.7	9.3	8.4	**8.9**
3	HI1650(I) (C)	102	8.5	8.2	8.4	8.4	**8.4**
4	GW513 (C)	105	8.2	7.9	8.0	9.0	**8.3**
5	MACS6768(I) (C)	106	7.8	8.4	7.4	7.4	**7.8**
6	HI1636 (C)	109	8.4	8.3	8.6	6.6	**8.0**
7	GW322 (C)	110	9.3	7.8	8.6	9.0	**8.7**
Mean			**8.5**	**8.3**	**8.3**	**8.2**	**8.3**
	Restricted Irrigated Timely Sown						
1	DBW359*	302	8.3	7.4	7.8	8.9	**8.1**
2	CG1040*	306	8.0	8.8	8.4	8.4	**8.4**
3	MP3288 (C)	301	10.0	9.0	8.8	8.2	**9.0**
4	CG1036(I) (C)	304	7.9	7.5	8.3	9.4	**8.3**
5	HI1655(I) (C)	305	7.3	6.7	7.9	8.7	**7.6**
6	DBW110 (C)	308	8.5	8.8	9.4	9.0	**8.9**
Mean			**8.3**	**8.0**	**8.4**	**8.8**	**8.4**

Peninsular Zone

S. No.	Variety	Code	Dharwad	Pune	Niphad	Mean
	Irrigated Timely Sown					
1	MP1378*	112	9.5	8.9	9.0	**9.1**
2	GW322 (C)	103	8.0	8.6	8.5	**8.4**
3	DBW187 (C)	116	7.2	8.7	8.4	**8.1**
4	MACS6222 (C)	118	8.2	7.1	8.7	**8.0**
Mean			**8.2**	**8.3**	**8.6**	**8.4**
	Restricted Irrigated Timely Sown					
1	NIAW4028*	302	6.4	9.8	9.2	**8.5**
2	DBW359*	306	7.5	8.5	8.6	**8.2**
3	HI1665*	307	6.7	7.7	8.4	**7.6**
4	NIAW3170 (C)	301	8.7	11.5	11.2	**10.5**
5	HI1605 (C)	310	7.3	8.2	8.4	**8.0**
Mean			**7.3**	**9.1**	**9.2**	**8.5**

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

North Western Plains Zone

S. No.	Variety	Code	Ludhiana	P.nagar	Delhi	Hisar	Karnal	Durgapura	Mean
	Irrigated Timely Sown								
1	HD3386*	113	26.7	24.8	29.3	19.8	26.8	28.9	**26.1**
2	HD2967 (C)	103	29.0	27.4	32.3	20.9	31.9	27.5	**28.2**
3	DBW187 (C)	104	30.0	28.7	29.9	19.1	25.8	27.0	**26.8**
4	HD3086 (C)	105	31.0	26.1	33.3	21.5	27.0	30.9	**28.3**
5	PBW826(I) (C)	108	24.8	24.9	29.3	17.9	24.6	31.8	**25.6**
6	DBW222 (C)	110	27.5	24.4	31.8	20.7	26.2	31.3	**27.0**
Mean			**28.2**	**26.1**	**31.0**	**20.0**	**27.1**	**29.6**	**27.0**
	Restricted Irrigated Timely Sown								
1	WH1402*	305	23.3	28.3	23.2	16.0	22.5	30.6	**24.0**
2	DBW296 (C)	302	24.7	20.9	20.3	18.0	20.2	25.8	**21.7**
3	HI1654(I) (C)	306	25.2	20.0	23.9	20.1	19.6	26.0	**22.5**
4	HD3369(I) (C)	307	25.7	18.6	24.5	16.7	18.3	26.8	**21.8**
5	PBW644 (C)	308	28.5	25.4	28.7	23.3	25.8	37.3	**28.2**
6	HI1653(I) (C)	311	24.7	26.2	25.0	18.5	21.3	29.2	**24.2**
7	NIAW3170 (C)	312	27.9	25.5	26.8	23.1	26.6	32.2	**27.0**
Mean			**25.7**	**23.6**	**24.6**	**19.4**	**22.0**	**29.7**	**24.2**

North Eastern Plains Zone

S. No.	Variety	Code	Kanpur	Varanasi	Pusa	Sabour	Mean
	Irrigated Timely Sown						
1	HD3388*	106	27.3	23.5	31.7	20.7	**25.8**
2	PBW826(I) (C)	102	24.7	21.7	23.5	21.0	**22.7**
3	DBW187 (C)	104	26.2	22.7	25.5	22.2	**24.2**
4	HD3086 (C)	105	20.8	23.4	27.4	22.5	**23.5**
5	DBW222 (C)	107	26.1	24.0	27.0	20.7	**24.5**
6	HD2967 (C)	109	24.8	24.9	27.7	21.2	**24.7**
7	HD3249 (C)	110	23.9	22.1	23.7	21.1	**22.7**
Mean			**24.8**	**23.2**	**26.6**	**21.3**	**24.0**

Central Zone

S. No.	Variety	Code	Vijapur	Junagarh	Indore	P.kheda	Mean
	Irrigated Timely Sown						
1	GW547*	103	32.7	33.7	30.1	34.7	**32.8**
2	NWS2194*	104	29.1	31.4	28.2	29.6	**29.6**
3	HI1650(I) (C)	102	29.6	30.4	28.2	29.4	**29.4**
4	GW513 (C)	105	30.2	34.0	30.5	29.0	**30.9**
5	MACS6768(I) (C)	106	35.2	34.9	29.1	34.0	**33.3**
6	HI1636 (C)	109	29.5	37.6	26.4	30.0	**30.9**
7	GW322 (C)	110	27.2	33.7	26.4	26.5	**28.5**
Mean			**30.5**	**33.7**	**28.4**	**30.5**	**30.8**
	Restricted Irrigated Timely Sown						
1	DBW359*	302	32.4	34.6	27.6	22.8	**29.4**
2	CG1040*	306	31.6	32.4	26.1	23.8	**28.5**
3	MP3288 (C)	301	32.6	31.1	25.2	24.7	**28.4**
4	CG1036(I) (C)	304	27.3	32.5	20.8	18.5	**24.8**
5	HI1655(I) (C)	305	29.9	38.2	24.7	25.0	**29.5**
6	DBW110 (C)	308	28.5	33.3	27.1	24.8	**28.4**
Mean			**30.4**	**33.7**	**25.3**	**23.3**	**28.1**

Peninsular Zone

S. No.	Variety	Code	Dharwad	Pune	Niphad	Mean
	Irrigated Timely Sown					
1	MP1378*	112	35.5	32.0	28.6	**32.0**
2	GW322 (C)	103	35.9	25.0	29.2	**30.0**
3	DBW187 (C)	116	39.0	30.8	24.5	**31.4**
4	MACS6222 (C)	118	44.0	36.3	33.2	**37.8**
Mean			**38.6**	**31.0**	**28.9**	**32.8**
	Restricted Irrigated Timely Sown					
1	NIAW4028*	302	39.9	29.7	30.6	**33.4**
2	DBW359*	306	37.1	26.7	26.5	**30.1**
3	HI1665*	307	42.2	34.5	31.7	**36.1**
4	NIAW3170 (C)	301	36.7	30.1	31.1	**32.6**
5	HI1605 (C)	310	41.7	29.7	28.0	**33.1**
Mean			**39.5**	**30.1**	**29.6**	**33.1**

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

North Western Plains Zone

S. No.	Variety	Code	Ludhiana	P.nagar	Delhi	Hisar	Karnal	Durgapura	Mean
	Irrigated Timely Sown								
1	HD3386*	113	8.7	8.2	9.8	6.6	8.9	9.6	**8.6**
2	HD2967 (C)	103	9.4	9.1	10.7	7.0	10.4	9.1	**9.3**
3	DBW187 (C)	104	9.8	9.6	10.5	6.8	9.2	9.3	**9.2**
4	HD3086 (C)	105	10.3	8.8	11.1	7.4	9.1	10.4	**9.5**
5	PBW826(I) (C)	108	8.1	8.5	9.8	6.0	8.2	10.8	**8.6**
6	DBW222 (C)	110	9.0	8.3	10.6	7.0	8.9	10.5	**9.1**
Mean			**9.2**	**8.8**	**10.4**	**6.8**	**9.1**	**10.0**	**9.0**
	Restricted Irrigated Timely Sown								
1	WH1402*	305	8.1	10.0	8.2	5.6	7.9	10.6	**8.4**
2	DBW296 (C)	302	8.4	7.3	7.0	6.0	6.9	9.3	**7.5**
3	HI1654(I) (C)	306	8.6	7.0	8.6	6.4	6.4	9.0	**7.7**
4	HD3369(I) (C)	307	8.9	6.6	8.7	5.8	6.6	9.6	**7.7**
5	PBW644 (C)	308	9.2	8.2	9.2	7.8	9.4	11.8	**9.3**
6	HI1653(I) (C)	311	8.5	8.8	8.5	6.4	7.6	9.7	**8.3**
7	NIAW3170 (C)	312	9.1	8.7	8.8	7.7	8.8	10.7	**9.0**
Mean			**8.7**	**8.1**	**8.4**	**6.5**	**7.7**	**10.1**	**8.2**

North Eastern Plains Zone

S. No.	Variety	Code	Kanpur	Varanasi	Pusa	Sabour	Mean
	Irrigated Timely Sown						
1	HD3388*	106	9.1	8.0	10.8	7.3	**8.8**
2	PBW826(I) (C)	102	8.3	7.7	8.0	7.4	**7.9**
3	DBW187 (C)	104	8.7	8.3	9.1	8.0	**8.5**
4	HD3086 (C)	105	8.0	8.0	9.2	8.0	**8.3**
5	DBW222 (C)	107	8.7	8.2	9.4	7.1	**8.4**
6	HD2967 (C)	109	8.4	8.4	9.2	7.8	**8.5**
7	HD3249 (C)	110	8.2	7.7	8.3	7.6	**8.0**
Mean			**8.5**	**8.0**	**9.1**	**7.6**	**8.3**

Central Zone

S. No.	Variety	Code	Vijapur	Junagarh	Indore	P.kheda	Mean
	Irrigated Timely Sown						
1	GW547*	103	10.9	10.5	9.8	11.1	**10.6**
2	NWS2194*	104	9.6	10.9	9.5	9.9	**10.0**
3	HI1650(I) (C)	102	9.6	9.4	9.5	9.9	**9.6**
4	GW513 (C)	105	9.5	11.1	9.7	9.3	**9.9**
5	MACS6768(I) (C)	106	11.9	11.5	10.0	11.6	**11.3**
6	HI1636 (C)	109	9.0	11.9	8.8	9.5	**9.8**
7	GW322 (C)	110	9.0	11.1	8.5	8.4	**9.3**
Mean			**9.9**	**10.9**	**9.4**	**10.0**	**10.1**
	Restricted Irrigated Timely Sown						
1	DBW359*	302	10.7	11.3	8.7	7.4	**9.5**
2	CG1040*	306	10.2	11.1	8.7	8.0	**9.5**
3	MP3288 (C)	301	10.4	10.5	8.4	7.9	**9.3**
4	CG1036(I) (C)	304	9.2	11.2	7.1	6.3	**8.5**
5	HI1655(I) (C)	305	10.0	14.1	8.3	8.5	**10.2**
6	DBW110 (C)	308	9.2	11.4	9.0	8.3	**9.5**
Mean			**10.0**	**11.6**	**8.4**	**7.7**	**9.4**

Peninsular Zone

S. No.	Variety	Code	Dharwad	Pune	Niphad	Mean
	Irrigated Timely Sown					
1	MP1378*	112	11.0	11.2	9.4	**10.5**
2	GW322 (C)	103	13.1	8.3	10.4	**10.6**
3	DBW187 (C)	116	13.2	10.2	8.2	**10.5**
4	MACS6222 (C)	118	15.8	12.1	11.4	**13.1**
Mean			**13.3**	**10.5**	**9.9**	**11.2**
	Restricted Irrigated Timely Sown					
1	NIAW4028*	302	13.7	9.8	9.9	**11.1**
2	DBW359*	306	13.2	9.3	8.9	**10.5**
3	HI1665*	307	14.6	11.6	10.4	**12.2**
4	NIAW3170 (C)	301	12.0	9.5	9.9	**10.5**
5	HI1605 (C)	310	14.2	9.6	9.4	**11.1**
Mean			**13.5**	**10.0**	**9.7**	**11.1**

Table 7: Gluten index (Max 100) of *T. aestivum* genotypes in AVTs

North Western Plains Zone

S. No.	Variety	Code	Ludhiana	P.nagar	Delhi	Hisar	Karnal	Durgapura	Mean
	Irrigated Timely Sown								
1	HD3386*	113	91	92	86	95	84	94	**90**
2	HD2967 (C)	103	84	87	85	93	74	87	**85**
3	DBW187 (C)	104	71	91	97	98	98	99	**92**
4	HD3086 (C)	105	72	97	74	96	92	95	**88**
5	PBW826(I) (C)	108	86	97	87	98	95	95	**93**
6	DBW222 (C)	110	69	92	92	92	90	92	**88**
Mean			**79**	**93**	**87**	**95**	**89**	**94**	**89**
	Restricted Irrigated Timely Sown								
1	WH1402*	305	99	82	99	98	96	98	**95**
2	DBW296 (C)	302	99	99	98	98	99	99	**99**
3	HI1654(I) (C)	306	86	99	99	93	95	99	**95**
4	HD3369(I) (C)	307	99	99	99	99	99	99	**99**
5	PBW644 (C)	308	81	82	84	94	85	79	**84**
6	HI1653(I) (C)	311	98	89	99	98	99	93	**96**
7	NIAW3170 (C)	312	77	79	90	70	84	82	**80**
Mean			**91**	**90**	**95**	**93**	**94**	**93**	**93**

North Eastern Plains Zone

S. No.	Variety	Code	Kanpur	Varanasi	Pusa	Sabour	Mean
	Irrigated Timely Sown						
1	HD3388*	106	84	99	87	99	**92**
2	PBW826(I) (C)	102	96	98	96	98	**97**
3	DBW187 (C)	104	98	95	99	98	**98**
4	HD3086 (C)	105	99	99	96	97	**98**
5	DBW222 (C)	107	90	98	93	99	**95**
6	HD2967 (C)	109	95	97	91	98	**95**
7	HD3249 (C)	110	99	99	99	99	**99**
Mean			**94**	**98**	**94**	**98**	**96**

Central Zone

S. No.	Variety	Code	Vijapur	Junagarh	Indore	P.kheda	Mean
	Irrigated Timely Sown						
1	GW547*	103	64	49	72	56	**60**
2	NWS2194*	104	99	98	98	93	**97**
3	HI1650(I) (C)	102	60	37	74	62	**58**
4	GW513 (C)	105	60	74	54	56	**61**
5	MACS6768(I) (C)	106	48	44	64	50	**52**
6	HI1636 (C)	109	58	59	75	59	**63**
7	GW322 (C)	110	64	61	58	55	**60**
Mean			**65**	**60**	**71**	**62**	**64**
	Restricted Irrigated Timely Sown						
1	DBW359*	302	61	58	45	75	**60**
2	CG1040*	306	86	88	87	96	**89**
3	MP3288 (C)	301	69	88	84	83	**81**
4	CG1036(I) (C)	304	97	97	99	99	**98**
5	HI1655(I) (C)	305	64	60	64	62	**63**
6	DBW110 (C)	308	81	89	81	94	**86**
Mean			**76**	**80**	**77**	**85**	**79**

Peninsular Zone

S. No.	Variety	Code	Dharwad	Pune	Niphad	Mean
	Irrigated Timely Sown					
1	MP1378*	112	41	50	52	**48**
2	GW322 (C)	103	53	68	62	**61**
3	DBW187 (C)	116	79	83	97	**86**
4	MACS6222 (C)	118	49	46	50	**48**
Mean			**56**	**62**	**65**	**61**
	Restricted Irrigated Timely Sown					
1	NIAW4028*	302	89	73	70	**77**
2	DBW359*	306	98	98	94	**97**
3	HI1665*	307	41	43	48	**44**
4	NIAW3170 (C)	301	76	47	60	**61**
5	HI1605 (C)	310	70	71	80	**74**
Mean			**75**	**66**	**70**	**71**

Peninsular Zone (Restricted Irrigated Timely Sown)

Table 8a: Pasta cooking quality of *T. durum* genotypes in AVTs

S. No.	Variety	Code	Cooking time (Min.)	Water absorption (%)	Water uptake ratio	Gruel solid loss (%)	Stickiness
1	UAS478(d)*	305	10.6	127.3	1.3	10.0	NS
2	HI8840(d)*	312	8.6	113.0	1.3	13.0	PS
3	NIDW1149(d) (C)	309	9.3	114.0	1.3	8.3	PS
4	UAS446(d) (C)	311	9.6	119.0	1.4	10.0	PS
5	UAS481(d)	304	10.3	121.3	1.3	15.0	PS
6	DDW61(d)	308	8.0	112.0	1.3	10.0	PS
Mean			**9.4**	**117.8**	**1.3**	**11.1**	

PS = Partial sticky

Table 8b: Pasta sensory evaluation of *T. durum* genotypes in AVTs

S. No.	Variety	Code	colour	Texture	Flavour/Aroma	Taste	Overall acceptability (Out of 9)
1	UAS478(d)*	305	5.4	5.3	5.3	5.3	**5.3**
2	HI8840(d)*	312	5.4	6.0	5.7	5.0	**5.5**
3	NIDW1149(d) (C)	309	5.0	6.0	5.6	5.0	**5.4**
4	UAS446(d) (C)	311	5.7	6.0	6.0	6.0	**5.9**
5	UAS481(d)	304	5.4	5.6	5.7	5.3	**5.5**
6	DDW61(d)	308	6.7	7.0	5.7	6.0	**6.4**
Mean			**5.6**	**6.0**	**5.7**	**5.4**	**5.7**

T. aestivum (CZ HYPT)

Table 9a: Chapati quality (Max Score - 10) of *T. aestivum* genotypes of HYPT CZ trial

S. No.	Variety	Code	Vijapur	Junagarh	Indore	P.kheda	Mean
1	DBW377*	203	8.3	8.0	7.1	7.3	**7.7**
2	DBW303 (C)	201	8.5	8.2	7.7	7.8	**8.1**
3	DBW187 (C)	205	8.3	8.0	7.4	7.9	**7.9**
4	GW322 (C)	206	8.3	8.0	8.1	7.6	**8.0**
Mean			**8.4**	**8.0**	**7.6**	**7.7**	**7.9**

Table 9b: Bread loaf volume (cc) of *T. aestivum* genotypes of HYPT CZ trial

S. No.	Variety	Code	Vijapur	Junagarh	Indore	P.kheda	Mean
1	DBW377*	203	435	395	470	440	**435**
2	DBW303 (C)	201	420	500	480	460	**465**
3	DBW187 (C)	205	425	485	440	450	**450**
4	GW322 (C)	206	410	450	400	370	**408**
Mean			**418**	**478**	**440**	**427**	**441**

Table 9c: Bread quality score (Max 10) of *T. aestivum* genotypes of HYPT CZ trial

S. No.	Variety	Code	Vijapur	Junagarh	Indore	P.kheda	Mean
1	DBW377*	203	4.9	3.5	5.3	4.9	**4.6**
2	DBW303 (C)	201	4.5	5.8	6.2	5.7	**5.5**
3	DBW187 (C)	205	4.9	5.9	5.3	5.7	**5.4**
4	GW322 (C)	206	4.5	4.8	3.5	3.9	**4.2**
Mean			**4.7**	**5.0**	**5.1**	**5.0**	**4.9**

Table 9d: Biscuit spread factor of *T. aestivum* genotypes of HYPT CZ trial

S. No.	Variety	Code	Vijapur	Junagarh	Indore	P.kheda	Mean
1	DBW377*	203	8.2	8.1	9.8	7.7	**8.5**
2	DBW303 (C)	201	7.9	7.9	7.7	9.1	**8.2**
3	DBW187 (C)	205	8.1	7.8	8.6	8.7	**8.3**
4	GW322 (C)	206	7.8	8.4	9.4	9.7	**8.8**
Mean			**8.0**	**8.0**	**8.9**	**8.8**	**8.4**

Table 9e: Wet gluten content (%) of *T. aestivum* genotypes of HYPT CZ trial

S. No.	Variety	Code	Vijapur	Junagarh	Indore	P.kheda	Mean
1	DBW377*	203	26.3	32.6	23.0	25.0	**26.7**
2	DBW303 (C)	201	28.8	32.3	26.3	24.5	**28.0**
3	DBW187 (C)	205	25.8	31.5	23.0	23.8	**26.0**
4	GW322 (C)	206	26.9	29.9	22.3	23.5	**25.7**
Mean			**27.0**	**31.6**	**23.7**	**24.2**	**26.6**

Table 9f: Dry gluten content (%) of *T. aestivum* genotypes of HYPT CZ trial

S. No.	Variety	Code	Vijapur	Junagarh	Indore	P.kheda	Mean
1	DBW377*	203	8.5	10.6	7.9	8.5	**8.9**
2	DBW303 (C)	201	9.5	10.7	8.8	8.5	**9.4**
3	DBW187 (C)	205	9.6	10.7	8.0	8.3	**9.2**
4	GW322 (C)	206	9.2	9.5	7.2	8.0	**8.5**
Mean			**9.2**	**10.4**	**8.0**	**8.3**	**9.0**

Table 9g: Gluten index of *T. aestivum* genotypes of HYPT CZ trial

S. No.	Variety	Code	Vijapur	Junagarh	Indore	P.kheda	Mean
1	DBW377*	203	78	64	98	77	**79**
2	DBW303 (C)	201	59	64	82	93	**75**
3	DBW187 (C)	205	92	91	99	84	**92**
4	GW322 (C)	206	62	50	78	98	**72**
Mean			**73**	**67**	**89**	**88**	**79**

Section D

NATIONAL INITIAL VARIETAL TRIALS
&
IVT, NHZ

Table from 1 -47 (NIVT) and 48-52 (IVT, NHZ)

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	Delhi	Pantnagar	Durgapura	Karnal	Mean	Kanpur	Varanasi	Mean	
1	HD3447	101	4.7	6.5	6.1	7.3	5.9	6.2	**6.1**	5.7	5.0	**5.4**	**5.9**
2	UBW18	102	6.3	6.1	5.1	5.9	6.7	6.8	**6.2**	5.8	4.7	**5.3**	**5.9**
3	UP3121	103	5.2	5.8	5.4	6.7	5.0	6.4	**5.8**	5.9	5.0	**5.5**	**5.7**
4	RAJ4577	104	4.4	7.9	6.7	5.3	5.5	6.0	**6.0**	6.6	5.3	**6.0**	**6.0**
5	WH1316	105	6.1	6.1	5.7	6.0	4.9	6.4	**5.9**	6.1	5.3	**5.7**	**5.8**
6	PBW912	106	5.4	7.2	7.1	6.7	6.3	6.2	**6.5**	6.8	4.3	**5.6**	**6.3**
7	JAUW711	107	4.3	6.0	4.7	5.3	4.6	6.0	**5.2**	5.6	5.7	**5.7**	**5.3**
8	PBW910	108	6.6	7.3	5.4	5.9	6.8	6.6	**6.4**	6.9	6.3	**6.6**	**6.5**
9	DBW408	109	5.3	6.6	5.5	5.6	6.2	6.4	**5.9**	7.1	6.3	**6.7**	**6.1**
10	RAJ4576	110	4.6	7.7	5.6	4.7	5.5	6.2	**5.7**	5.3	5.3	**5.3**	**5.6**
11	HD3472	111	4.9	4.7	5.0	4.6	6.1	6.2	**5.3**	4.8	5.1	**5.0**	**5.2**
12	HD3086 (C)	112	5.1	6.3	6.0	5.4	6.3	6.2	**5.9**	5.9	4.8	**5.4**	**5.8**
13	WH1315	113	6.1	7.6	5.5	6.7	5.6	6.0	**6.3**	7.2	5.5	**6.4**	**6.3**
14	NWS2442	114	5.0	6.1	4.8	5.4	4.5	6.6	**5.4**	5.5	5.4	**5.5**	**5.4**
15	DBW411	115	5.7	5.7	5.6	5.6	4.7	6.2	**5.6**	6.9	5.2	**6.1**	**5.7**
16	BCW28	116	4.5	5.6	5.0	5.7	6.5	6.0	**5.6**	6.7	4.2	**5.5**	**5.5**
17	PBW911	117	6.1	6.8	6.7	7.2	5.1	6.0	**6.3**	6.9	5.7	**6.3**	**6.3**
18	SVPWL21-15	118	4.0	5.5	6.1	5.1	4.7	5.8	**5.2**	7.1	4.4	**5.8**	**5.3**
19	HD3444	119	5.3	5.3	5.5	5.2	5.6	6.2	**5.5**	6.1	5.4	**5.8**	**5.6**
20	NW8072	120	6.7	6.4	5.5	5.7	6.5	6.4	**6.2**	6.8	4.1	**5.5**	**6.0**
21	K2201	121	4.5	6.4	5.5	5.3	5.1	6.4	**5.5**	5.5	5.3	**5.4**	**5.5**
22	HUW854	122	3.9	6.5	5.6	5.6	5.7	5.8	**5.5**	6.8	5.6	**6.2**	**5.7**
23	DBW410	123	5.7	6.9	5.5	6.8	4.8	6.6	**6.1**	6.7	5.8	**6.3**	**6.1**
24	UP3123	124	5.2	6.1	6.3	5.6	3.8	5.6	**5.4**	5.7	5.6	**5.7**	**5.5**
25	UP3122	125	4.6	6.7	5.0	5.8	5.3	6.2	**5.6**	5.3	5.1	**5.2**	**5.5**
26	DBW409	126	5.4	6.7	5.5	5.7	4.9	6.2	**5.7**	6.4	4.9	**5.7**	**5.7**
27	HD3446	127	6.3	6.2	6.0	5.7	5.3	6.2	**6.0**	5.3	4.9	**5.1**	**5.7**
28	DBW187 (C)	128	4.6	7.0	4.9	5.1	5.2	6.2	**5.5**	5.5	5.5	**5.5**	**5.5**
29	DBW222 (C)	129	5.0	5.9	5.7	5.8	3.8	5.8	**5.3**	4.8	5.4	**5.1**	**5.3**
30	DBW412	130	5.5	6.7	5.1	5.4	3.8	6.4	**5.5**	6.5	6.4	**6.5**	**5.7**
31	PBW909	131	4.8	6.9	6.3	6.9	5.7	6.2	**6.1**	6.0	4.2	**5.1**	**5.9**
32	KRL2106	132	5.0	6.3	5.0	7.0	4.3	6.0	**5.6**	4.8	5.5	**5.2**	**5.5**
33	PBW908	133	4.7	5.2	4.9	4.9	4.7	5.8	**5.0**	5.4	5.5	**5.5**	**5.1**
34	HD3445	134	5.3	5.5	5.2	5.4	6.0	5.8	**5.5**	5.3	6.2	**5.8**	**5.6**
35	BRW3944	135	6.9	6.8	6.7	6.7	6.4	6.4	**6.7**	7.0	5.5	**6.3**	**6.6**
36	RAJ4578	136	4.7	4.9	4.7	4.7	5.5	6.2	**5.1**	5.2	5.6	**5.4**	**5.2**
Mean			**5.2**	**6.3**	**5.6**	**5.8**	**5.4**	**6.2**	**5.7**	**6.1**	**5.3**	**5.7**	**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	Delhi	Pantnagar	Durgapura	Karnal	Mean	Kanpur	Varanasi	Mean	
1	HD3447	101	73.0	77.8	75.8	78.3	70.5	76.1	**75.3**	72.0	72.5	**72.3**	**74.5**
2	UBW18	102	75.0	78.3	74.5	76.0	73.8	78.8	**76.1**	72.5	70.0	**71.3**	**74.9**
3	UP3121	103	73.5	77.3	75.8	77.5	68.0	77.9	**75.0**	71.5	71.5	**71.5**	**74.1**
4	RAJ4577	104	72.3	80.5	75.8	77.0	71.5	79.5	**76.1**	73.5	71.3	**72.4**	**75.2**
5	WH1316	105	76.3	78.8	76.3	76.8	69.0	79.7	**76.2**	72.8	74.3	**73.6**	**75.5**
6	PBW912	106	75.0	79.3	78.5	79.3	72.3	79.2	**77.3**	76.3	71.0	**73.7**	**76.4**
7	JAUW711	107	69.5	76.8	71.8	75.8	64.0	75.3	**72.2**	71.3	70.8	**71.1**	**71.9**
8	PBW910	108	75.8	79.0	76.0	77.0	72.0	78.8	**76.4**	73.0	73.8	**73.4**	**75.7**
9	DBW408	109	75.5	78.8	73.8	77.0	72.3	79.3	**76.1**	74.5	75.0	**74.8**	**75.8**
10	RAJ4576	110	74.8	78.3	74.0	75.3	69.5	78.8	**75.1**	71.8	73.3	**72.6**	**74.5**
11	HD3472	111	75.3	77.5	73.0	76.0	72.5	77.0	**75.2**	70.8	72.8	**71.8**	**74.4**
12	HD3086 (C)	112	74.0	78.3	75.5	75.5	71.5	76.6	**75.2**	73.0	69.8	**71.4**	**74.3**
13	WH1315	113	75.0	80.3	75.5	78.8	72.5	79.9	**77.0**	75.0	72.5	**73.8**	**76.2**
14	NWS2442	114	73.0	77.0	73.8	75.5	66.0	76.6	**73.7**	70.8	72.8	**71.8**	**73.2**
15	DBW411	115	75.3	76.5	77.0	76.5	70.0	75.9	**75.2**	74.0	70.0	**72.0**	**74.4**
16	BCW28	116	74.3	77.3	74.0	75.8	72.5	75.2	**74.9**	71.5	68.0	**69.8**	**73.6**
17	PBW911	117	75.3	78.3	77.0	78.0	71.5	78.4	**76.4**	74.3	72.0	**73.2**	**75.6**
18	SVPWL21-15	118	71.8	76.8	78.0	77.5	70.3	78.2	**75.4**	74.3	70.8	**72.6**	**74.7**
19	HD3444	119	74.0	78.8	76.0	76.3	71.3	77.7	**75.7**	72.0	73.0	**72.5**	**74.9**
20	NW8072	120	78.0	80.5	76.0	77.8	73.8	78.2	**77.4**	74.8	65.5	**70.2**	**75.6**
21	K2201	121	72.0	77.3	74.5	75.8	69.8	76.3	**74.3**	71.3	72.5	**71.9**	**73.7**
22	HUW854	122	75.0	78.5	76.3	78.5	72.0	80.8	**76.9**	73.0	69.8	**71.4**	**75.5**
23	DBW410	123	75.5	79.0	76.8	78.0	69.5	79.4	**76.4**	72.8	71.8	**72.3**	**75.4**
24	UP3123	124	73.3	77.3	76.0	76.3	66.5	78.3	**74.6**	72.3	74.5	**73.4**	**74.3**
25	UP3122	125	70.5	77.3	71.8	75.5	68.8	76.3	**73.4**	72.3	71.5	**71.9**	**73.0**
26	DBW409	126	74.0	78.3	75.8	75.8	69.3	78.7	**75.3**	72.8	72.3	**72.6**	**74.6**
27	HD3446	127	74.8	78.0	75.5	78.3	69.5	76.8	**75.5**	72.5	69.8	**71.2**	**74.4**
28	DBW187 (C)	128	73.0	78.3	75.5	75.5	70.0	76.9	**74.9**	71.5	73.0	**72.3**	**74.2**
29	DBW222 (C)	129	73.5	77.3	75.8	75.8	65.3	75.3	**73.8**	72.5	71.3	**71.9**	**73.4**
30	DBW412	130	75.3	78.3	75.0	75.3	63.3	76.7	**74.0**	72.5	75.3	**73.9**	**74.0**
31	PBW909	131	73.3	78.0	76.0	78.5	70.5	77.8	**75.7**	69.5	68.3	**68.9**	**74.0**
32	KRL2106	132	75.3	76.8	74.3	79.0	68.8	77.1	**75.2**	71.5	70.5	**71.0**	**74.2**
33	PBW908	133	73.0	76.0	73.3	74.3	68.3	75.8	**73.5**	70.5	71.3	**70.9**	**72.8**
34	HD3445	134	73.3	76.5	73.5	76.0	70.8	76.2	**74.4**	74.5	73.3	**73.9**	**74.3**
35	BRW3944	135	77.5	79.8	78.0	78.8	72.3	80.6	**77.8**	70.0	71.0	**70.5**	**76.0**
36	RAJ4578	136	71.3	75.5	72.5	73.8	68.0	76.7	**73.0**	70.0	70.0	**70.0**	**72.2**
Mean			**74.1**	**78.0**	**75.2**	**76.7**	**69.9**	**77.7**	**75.3**	**72.5**	**71.6**	**72.0**	**74.5**

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

S. No.	Entry	Trial Code	NWPZ							NEPZ			Overall Mean
			Ludhiana	Hisar	Delhi	Pantnagar	Durgapura	Karnal	Mean	Kanpur	Varanasi	Mean	
1	HD3447	101	12.4	11.1	13.4	11.0	12.0	11.3	**11.9**	12.6	11.8	**12.2**	**12.0**
2	UBW18	102	10.4	9.2	14.3	10.0	11.8	9.4	**10.8**	11.8	11.8	**11.8**	**11.1**
3	UP3121	103	12.8	10.5	14.0	11.6	13.9	11.2	**12.3**	12.4	12.0	**12.2**	**12.3**
4	RAJ4577	104	11.4	9.8	13.6	9.6	12.1	11.0	**11.2**	12.4	11.5	**11.9**	**11.4**
5	WH1316	105	10.2	8.4	12.8	10.3	12.4	10.3	**10.7**	11.8	11.9	**11.9**	**11.0**
6	PBW912	106	11.6	9.7	13.2	9.0	12.7	10.6	**11.1**	11.7	11.4	**11.6**	**11.2**
7	JAUW711	107	12.4	9.2	13.9	9.8	13.3	10.2	**11.4**	12.2	12.1	**12.1**	**11.6**
8	PBW910	108	11.6	10.1	14.6	11.5	12.3	10.9	**11.8**	11.7	11.6	**11.6**	**11.8**
9	DBW408	109	10.4	9.2	13.7	10.1	12.4	8.8	**10.7**	12.4	11.5	**12.0**	**11.1**
10	RAJ4576	110	10.5	10.2	13.8	12.4	13.5	10.4	**11.8**	12.2	10.9	**11.5**	**11.7**
11	HD3472	111	10.9	9.6	13.2	10.6	11.4	9.8	**10.9**	12.0	11.3	**11.7**	**11.1**
12	HD3086 (C)	112	11.1	9.3	13.3	10.3	12.9	9.8	**11.1**	10.7	11.2	**10.9**	**11.1**
13	WH1315	113	10.6	9.5	13.6	9.9	11.8	9.5	**10.8**	12.4	11.7	**12.1**	**11.1**
14	NWS2442	114	10.4	10.7	13.7	10.7	12.8	9.6	**11.3**	10.5	11.9	**11.2**	**11.3**
15	DBW411	115	9.4	9.4	12.6	9.8	12.0	9.2	**10.4**	11.9	12.0	**11.9**	**10.8**
16	BCW28	116	10.5	8.3	13.4	9.7	11.7	10.7	**10.7**	10.1	12.2	**11.1**	**10.8**
17	PBW911	117	12.3	11.5	13.9	11.4	13.1	11.5	**12.3**	12.8	10.9	**11.9**	**12.2**
18	SVPWL21-15	118	11.4	9.7	13.2	11.1	11.9	10.2	**11.3**	11.5	12.7	**12.1**	**11.5**
19	HD3444	119	10.6	8.2	13.2	10.8	12.1	11.0	**11.0**	12.3	11.6	**11.9**	**11.2**
20	NW8072	120	10.7	9.3	13.4	10.2	12.3	9.8	**11.0**	12.5	12.8	**12.7**	**11.4**
21	K2201	121	10.7	9.0	12.8	11.0	12.6	10.1	**11.0**	10.5	11.2	**10.8**	**11.0**
22	HUW854	122	10.9	10.3	12.9	9.8	11.0	10.1	**10.8**	11.5	11.8	**11.6**	**11.0**
23	DBW410	123	11.1	9.8	14.6	11.2	13.2	10.7	**11.7**	11.4	12.0	**11.7**	**11.7**
24	UP3123	124	11.6	11.0	14.6	12.0	15.3	11.0	**12.6**	11.4	11.5	**11.5**	**12.3**
25	UP3122	125	12.0	11.4	13.2	11.5	12.4	10.2	**11.8**	11.9	11.4	**11.6**	**11.7**
26	DBW409	126	10.8	9.4	14.2	10.4	13.2	10.0	**11.3**	13.4	11.1	**12.2**	**11.6**
27	HD3446	127	11.1	10.2	14.2	10.8	13.3	10.6	**11.7**	13.7	11.3	**12.5**	**11.9**
28	DBW187 (C)	128	11.4	8.4	13.9	11.5	12.4	10.5	**11.4**	12.3	11.8	**12.0**	**11.5**
29	DBW222 (C)	129	10.6	8.6	12.2	10.6	12.4	10.6	**10.8**	11.3	11.1	**11.2**	**10.9**
30	DBW412	130	10.4	10.1	13.2	10.6	13.2	10.6	**11.3**	12.2	11.3	**11.8**	**11.4**
31	PBW909	131	12.5	10.4	14.0	10.7	12.6	11.1	**11.9**	12.3	11.7	**12.0**	**11.9**
32	KRL2106	132	10.4	12.4	13.9	10.5	13.0	9.7	**11.6**	12.9	12.6	**12.7**	**11.9**
33	PBW908	133	11.4	8.2	13.3	11.8	12.7	10.1	**11.2**	11.5	10.5	**11.0**	**11.2**
34	HD3445	134	10.2	9.3	12.9	11.3	11.5	9.9	**10.9**	11.4	11.7	**11.6**	**11.0**
35	BRW3944	135	10.5	9.7	13.7	10.7	13.8	10.7	**11.5**	13.4	12.9	**13.2**	**11.9**
36	RAJ4578	136	11.2	9.6	12.8	12.1	11.8	10.4	**11.3**	12.9	11.4	**12.1**	**11.5**
Mean			**11.1**	**9.7**	**13.5**	**10.7**	**12.6**	**10.3**	**11.3**	**12.0**	**11.7**	**11.8**	**11.4**

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

S. No.	Entry	Trial Code	NWPZ							NEPZ			Overall Mean
			Ludhiana	Hisar	Delhi	Pantnagar	Durgapura	Karnal	Mean	Kanpur	Varanasi	Mean	
1	HD3447	101	51.0	33.0	37.0	42.0	50.0	53.4	**44.4**	42.0	45.0	**43.5**	**44.2**
2	UBW18	102	51.0	36.0	43.0	42.0	50.0	51.5	**45.6**	49.0	52.0	**50.5**	**46.8**
3	UP3121	103	49.0	43.0	47.0	46.0	54.0	49.2	**48.0**	50.0	46.0	**48.0**	**48.0**
4	RAJ4577	104	49.0	33.0	37.0	36.0	41.0	50.7	**41.1**	53.0	62.0	**57.5**	**45.2**
5	WH1316	105	59.0	41.0	45.0	51.0	62.0	54.2	**52.0**	54.0	57.0	**55.5**	**52.9**
6	PBW912	106	54.0	36.0	36.0	42.0	49.0	50.7	**44.6**	46.0	56.0	**51.0**	**46.2**
7	JAUW711	107	56.0	41.0	41.0	42.0	57.0	57.7	**49.1**	55.0	54.0	**54.5**	**50.5**
8	PBW910	108	61.0	48.0	49.0	53.0	57.0	64.6	**55.4**	54.0	38.0	**46.0**	**53.1**
9	DBW408	109	56.0	37.0	45.0	45.0	55.0	51.9	**48.3**	53.0	56.0	**54.5**	**49.9**
10	RAJ4576	110	44.0	37.0	38.0	40.0	47.0	60.4	**44.4**	47.0	48.0	**47.5**	**45.2**
11	HD3472	111	54.0	40.0	50.0	49.0	53.0	55.0	**50.2**	49.0	43.0	**46.0**	**49.1**
12	HD3086 (C)	112	55.0	41.0	43.0	51.0	54.0	53.4	**49.6**	50.0	56.0	**53.0**	**50.4**
13	WH1315	113	59.0	51.0	53.0	47.0	57.0	58.1	**54.2**	59.0	50.0	**54.5**	**54.3**
14	NWS2442	114	60.0	43.0	44.0	44.0	55.0	56.5	**50.4**	51.0	58.0	**54.5**	**51.4**
15	DBW411	115	34.0	33.0	35.0	32.0	45.0	41.5	**36.8**	42.0	49.0	**45.5**	**38.9**
16	BCW28	116	63.0	41.0	49.0	45.0	52.0	62.3	**52.0**	49.0	48.0	**48.5**	**51.2**
17	PBW911	117	42.0	33.0	29.0	35.0	40.0	45.7	**37.5**	34.0	52.0	**43.0**	**38.8**
18	SVPWL21-15	118	55.0	45.0	39.0	49.0	54.0	49.6	**48.6**	48.0	52.0	**50.0**	**48.9**
19	HD3444	119	55.0	42.0	47.0	53.0	62.0	58.4	**52.9**	53.0	53.0	**53.0**	**52.9**
20	NW8072	120	50.0	42.0	48.0	43.0	57.0	46.1	**47.7**	51.0	57.0	**54.0**	**49.3**
21	K2201	121	47.0	34.0	33.0	34.0	46.0	43.4	**39.6**	50.0	49.0	**49.5**	**42.1**
22	HUW854	122	43.0	30.0	37.0	37.0	50.0	48.8	**41.0**	50.0	41.0	**45.5**	**42.1**
23	DBW410	123	45.0	40.0	38.0	43.0	60.0	56.1	**47.0**	48.0	55.0	**51.5**	**48.1**
24	UP3123	124	50.0	40.0	40.0	41.0	52.0	48.0	**45.2**	51.0	48.0	**49.5**	**46.3**
25	UP3122	125	48.0	46.0	40.0	49.0	55.0	53.8	**48.6**	52.0	54.0	**53.0**	**49.7**
26	DBW409	126	54.0	46.0	49.0	50.0	62.0	54.2	**52.5**	55.0	50.0	**52.5**	**52.5**
27	HD3446	127	56.0	49.0	44.0	48.0	60.0	56.9	**52.3**	48.0	55.0	**51.5**	**52.1**
28	DBW187 (C)	128	56.0	48.0	46.0	54.0	60.0	67.3	**55.2**	63.0	58.0	**60.5**	**56.5**
29	DBW222 (C)	129	53.0	46.0	41.0	45.0	56.0	57.7	**49.8**	49.0	48.0	**48.5**	**49.5**
30	DBW412	130	44.0	38.0	36.0	40.0	56.0	52.3	**44.4**	44.0	50.0	**47.0**	**45.0**
31	PBW909	131	53.0	39.0	29.0	40.0	48.0	50.0	**43.2**	42.0	52.0	**47.0**	**44.1**
32	KRL2106	132	41.0	41.0	35.0	47.0	45.0	47.7	**42.8**	44.0	49.0	**46.5**	**43.7**
33	PBW908	133	54.0	35.0	41.0	48.0	60.0	53.4	**48.6**	54.0	49.0	**51.5**	**49.3**
34	HD3445	134	43.0	36.0	38.0	45.0	47.0	49.6	**43.1**	49.0	56.0	**52.5**	**45.4**
35	BRW3944	135	52.0	45.0	36.0	48.0	52.0	53.4	**47.7**	54.0	55.0	**54.5**	**49.4**
36	RAJ4578	136	51.0	41.0	44.0	48.0	50.0	51.1	**47.5**	60.0	47.0	**53.5**	**49.0**
Mean			**51.3**	**40.3**	**41.2**	**44.6**	**53.1**	**53.2**	**47.3**	**50.1**	**51.3**	**50.7**	**48.1**

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

S. No.	Entry	Trial Code	NWPZ							NEPZ			Overall Mean
			Ludhiana	Hisar	Delhi	Pantnagar	Durgapura	Karnal	Mean	Kanpur	Varanasi	Mean	
1	HD3447	101	6.1	6.0	6.0	5.3	4.7	7.0	**5.9**	6.5	6.0	**6.3**	**6.0**
2	UBW18	102	5.9	6.1	6.6	5.3	5.5	6.5	**6.0**	6.4	5.3	**5.9**	**6.0**
3	UP3121	103	6.2	6.2	6.5	5.2	5.5	7.5	**6.2**	6.3	5.7	**6.0**	**6.1**
4	RAJ4577	104	4.9	4.7	5.6	4.6	4.8	7.0	**5.3**	6.2	6.2	**6.2**	**5.5**
5	WH1316	105	2.5	2.1	2.9	2.8	3.0	4.5	**3.0**	2.5	6.0	**4.3**	**3.3**
6	PBW912	106	1.7	1.8	1.8	1.7	1.7	4.0	**2.1**	2.0	5.8	**3.9**	**2.6**
7	JAUW711	107	5.2	5.8	6.3	6.0	4.5	7.5	**5.9**	6.2	5.5	**5.9**	**5.9**
8	PBW910	108	6.1	5.6	6.3	5.7	4.4	9.0	**6.2**	6.6	5.0	**5.8**	**6.1**
9	DBW408	109	5.3	5.5	6.0	5.3	5.1	8.5	**6.0**	6.3	4.9	**5.6**	**5.9**
10	RAJ4576	110	4.9	4.7	5.1	5.5	4.1	9.0	**5.6**	6.2	6.2	**6.2**	**5.7**
11	HD3472	111	5.2	4.8	5.9	5.3	4.0	5.5	**5.1**	6.2	6.0	**6.1**	**5.4**
12	HD3086 (C)	112	5.2	4.8	5.8	6.0	4.7	6.0	**5.4**	5.9	5.7	**5.8**	**5.5**
13	WH1315	113	5.5	5.4	4.8	5.2	4.4	7.0	**5.4**	5.4	6.5	**6.0**	**5.5**
14	NWS2442	114	4.4	5.1	6.0	5.7	4.7	7.0	**5.5**	6.2	5.8	**6.0**	**5.6**
15	DBW411	115	4.7	5.0	5.0	5.5	4.7	6.0	**5.2**	5.1	4.7	**4.9**	**5.1**
16	BCW28	116	5.1	6.0	5.7	5.2	5.2	7.0	**5.7**	5.0	6.0	**5.5**	**5.7**
17	PBW911	117	4.2	6.1	5.1	5.0	4.7	9.0	**5.7**	5.1	4.9	**5.0**	**5.5**
18	SVPWL21-15	118	5.0	5.7	5.2	4.9	5.1	6.0	**5.3**	2.7	5.1	**3.9**	**5.0**
19	HD3444	119	5.4	6.0	5.7	5.1	5.0	7.5	**5.8**	5.5	5.5	**5.5**	**5.7**
20	NW8072	120	4.7	6.1	6.1	5.0	5.2	6.5	**5.6**	5.2	6.2	**5.7**	**5.6**
21	K2201	121	5.0	6.0	5.0	4.9	3.9	6.5	**5.2**	3.2	5.3	**4.3**	**5.0**
22	HUW854	122	5.3	5.7	5.5	4.8	4.3	7.5	**5.5**	4.3	5.1	**4.7**	**5.3**
23	DBW410	123	5.2	5.8	5.0	5.6	5.3	8.5	**5.9**	4.3	6.3	**5.3**	**5.8**
24	UP3123	124	4.9	5.6	4.7	5.5	5.9	7.5	**5.7**	5.0	2.3	**3.7**	**5.2**
25	UP3122	125	4.5	5.9	3.2	4.9	4.1	5.5	**4.7**	4.9	1.8	**3.4**	**4.4**
26	DBW409	126	4.7	4.7	5.1	6.1	4.9	8.0	**5.6**	4.1	5.7	**4.9**	**5.4**
27	HD3446	127	5.1	4.6	3.7	6.1	4.7	8.5	**5.5**	4.9	5.7	**5.3**	**5.4**
28	DBW187 (C)	128	5.0	4.9	5.7	5.8	5.0	9.0	**5.9**	5.6	6.1	**5.9**	**5.9**
29	DBW222 (C)	129	5.9	5.5	5.7	5.7	5.4	9.0	**6.2**	5.4	5.2	**5.3**	**6.0**
30	DBW412	130	5.5	5.7	4.8	5.3	5.4	9.0	**6.0**	5.0	5.2	**5.1**	**5.7**
31	PBW909	131	4.2	5.7	4.9	6.0	5.5	6.5	**5.5**	5.6	5.1	**5.4**	**5.4**
32	KRL2106	132	4.9	6.5	5.1	6.0	5.2	6.0	**5.6**	3.3	5.2	**4.3**	**5.3**
33	PBW908	133	3.3	4.4	2.5	2.7	3.7	5.5	**3.7**	4.7	5.3	**5.0**	**4.0**
34	HD3445	134	3.0	3.5	4.5	3.9	4.1	7.0	**4.3**	4.4	6.1	**5.3**	**4.6**
35	BRW3944	135	4.0	2.7	4.6	3.9	4.0	6.0	**4.2**	5.0	6.3	**5.7**	**4.6**
36	RAJ4578	136	6.5	5.8	6.3	5.7	6.2	8.0	**6.4**	5.1	3.8	**4.5**	**5.9**
Mean			**4.9**	**5.2**	**5.1**	**5.1**	**4.7**	**7.1**	**5.3**	**5.1**	**5.4**	**5.2**	**5.3**

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

S. No.	Entry	Trial Code	NWPZ						NEPZ				Overall Mean
			Ludhiana	Delhi	Durgapura	Hisar	Karnal	Mean	Kanpur	Sabour	Varanasi	Mean	
1	K2204	201	7.0	6.0	7.0	7.0	6.0	**6.6**	6.0	7.0	6.0	**6.3**	**6.5**
2	BCW29	202	8.0	5.0	6.0	7.0	6.0	**6.4**	7.0	6.0	7.0	**6.7**	**6.5**
3	PBW916	203	7.0	5.0	5.0	5.0	6.8	**5.8**	7.0	5.0	7.0	**6.3**	**6.0**
4	JKW305	204	6.0	4.0	6.0	6.0	6.0	**5.6**	6.0	7.0	8.0	**7.0**	**6.1**
5	HD3467	205	7.0	7.0	5.0	5.0	5.8	**6.0**	7.0	6.0	6.0	**6.3**	**6.1**
6	DBW414	206	6.0	8.0	6.0	5.0	5.8	**6.2**	7.0	6.0	7.0	**6.7**	**6.4**
7	NW8073	207	6.0	6.0	5.0	5.0	5.2	**5.4**	6.0	7.0	6.0	**6.3**	**5.8**
8	BRW3946	208	6.0	6.0	7.0	6.0	5.4	**6.1**	6.0	6.0	7.0	**6.3**	**6.2**
9	PBW915	209	5.0	8.0	6.0	6.0	5.4	**6.1**	7.0	7.0	7.0	**7.0**	**6.4**
10	SVPWL21-07	210	7.0	7.0	7.0	4.0	5.8	**6.2**	7.0	5.0	6.0	**6.0**	**6.1**
11	WH1318	211	6.0	5.0	7.0	5.0	6.4	**5.9**	6.0	6.0	6.0	**6.0**	**5.9**
12	PBW914	212	8.0	6.0	5.0	5.0	6.2	**6.0**	6.0	7.0	8.0	**7.0**	**6.4**
13	UBW19	213	6.0	6.0	6.0	4.0	5.6	**5.5**	5.0	6.0	7.0	**6.0**	**5.7**
14	HD3448	214	6.0	7.0	7.0	7.0	6.0	**6.6**	5.0	6.0	7.0	**6.0**	**6.4**
15	PBW917	215	5.0	5.0	6.0	6.0	6.6	**5.7**	6.0	5.0	6.0	**5.7**	**5.7**
16	BRW3942	216	5.0	6.0	5.0	7.0	6.4	**5.9**	7.0	7.0	6.0	**6.7**	**6.2**
17	DBW415	217	5.0	6.0	5.0	7.0	6.2	**5.8**	6.0	6.0	6.0	**6.0**	**5.9**
18	HUW855	218	6.0	5.0	6.0	8.0	6.0	**6.2**	5.0	6.0	7.0	**6.0**	**6.1**
19	DBW417	219	6.0	7.0	7.0	7.0	6.2	**6.6**	6.0	7.0	7.0	**6.7**	**6.7**
20	NWS2216	220	7.0	7.0	7.0	6.0	6.4	**6.7**	7.0	6.0	6.0	**6.3**	**6.6**
21	PBW913	221	6.0	5.0	6.0	7.0	6.4	**6.1**	6.0	6.0	7.0	**6.3**	**6.2**
22	HD3449	222	7.0	6.0	6.0	6.0	6.4	**6.3**	7.0	5.0	8.0	**6.7**	**6.4**
23	DBW187 (C)	223	7.0	6.0	7.0	6.0	6.0	**6.4**	5.0	5.0	7.0	**5.7**	**6.1**
24	HP1979	224	5.0	7.0	7.0	6.0	5.8	**6.2**	7.0	5.0	5.0	**5.7**	**6.0**
25	NW8075	225	6.0	7.0	6.0	5.0	5.8	**6.0**	6.0	6.0	5.0	**5.7**	**5.9**
26	UP3132	226	5.0	6.0	7.0	7.0	6.2	**6.2**	7.0	6.0	6.0	**6.3**	**6.3**
27	HP1978	227	5.0	5.0	7.0	6.0	5.6	**5.7**	5.0	7.0	5.0	**5.7**	**5.7**
28	K2203	228	5.0	6.0	6.0	8.0	5.8	**6.2**	7.0	6.0	5.0	**6.0**	**6.1**
29	UP3125	229	6.0	7.0	7.0	6.0	5.6	**6.3**	5.0	6.0	6.0	**5.7**	**6.1**
30	DBW413	230	6.0	5.0	6.0	6.0	6.2	**5.8**	5.0	5.0	6.0	**5.3**	**5.7**
31	WH1317	231	4.0	4.0	7.0	5.0	6.2	**5.2**	6.0	6.0	6.0	**6.0**	**5.5**
32	UP3124	232	5.0	7.0	6.0	5.0	6.2	**5.8**	5.0	5.0	6.0	**5.3**	**5.7**
33	DBW416	233	5.0	6.0	7.0	5.0	6.0	**5.8**	7.0	7.0	7.0	**7.0**	**6.3**
34	RAJ4579	234	4.0	6.0	6.0	6.0	6.2	**5.6**	7.0	6.0	6.0	**6.3**	**5.9**
35	DBW222 (C)	235	7.0	7.0	5.0	6.0	6.0	**6.2**	6.0	5.0	7.0	**6.0**	**6.1**
36	HD3086 (C)	236	6.0	6.0	7.0	7.0	6.2	**6.4**	6.0	6.0	5.0	**5.7**	**6.2**
Mean			**5.9**	**6.1**	**6.2**	**6.0**	**6.0**	**6.0**	**6.2**	**6.0**	**6.4**	**6.2**	**6.1**

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

S. No.	Entry	Trial Code	NWPZ						NEPZ				Overall Mean
			Ludhiana	Delhi	Durgapura	Hisar	Karnal	Mean	Kanpur	Sabour	Varanasi	Mean	
1	K2204	201	73.9	73.4	70.3	80.2	78.1	**75.2**	73.9	70.5	72.2	**72.2**	**74.1**
2	BCW29	202	73.3	76.0	68.9	77.3	77.2	**74.5**	72.8	71.2	74.9	**73.0**	**74.0**
3	PBW916	203	74.4	76.5	68.9	78.5	78.6	**75.4**	73.6	72.3	74.4	**73.4**	**74.7**
4	JKW305	204	73.7	71.6	64.7	78.2	77.7	**73.2**	74.2	67.8	71.9	**71.3**	**72.5**
5	HD3467	205	70.0	72.8	63.5	75.2	74.5	**71.2**	70.8	65.9	70.0	**68.9**	**70.3**
6	DBW414	206	74.1	75.2	64.0	76.1	77.0	**73.3**	71.9	65.5	72.2	**69.9**	**72.0**
7	NW8073	207	74.0	71.6	65.8	77.1	71.7	**72.0**	71.5	70.5	71.8	**71.3**	**71.8**
8	BRW3946	208	76.4	77.6	66.1	79.4	79.6	**75.8**	72.9	72.5	74.5	**73.3**	**74.9**
9	PBW915	209	80.0	79.4	73.9	81.2	79.4	**78.8**	75.9	73.1	76.0	**75.0**	**77.4**
10	SVPWL21-07	210	76.8	75.5	68.8	79.2	78.1	**75.7**	72.0	70.9	71.7	**71.5**	**74.1**
11	WH1318	211	73.1	75.0	69.7	78.4	77.2	**74.7**	73.9	70.8	76.4	**73.7**	**74.3**
12	PBW914	212	72.9	76.0	68.8	78.3	76.0	**74.4**	73.6	69.9	74.2	**72.6**	**73.7**
13	UBW19	213	75.9	73.3	68.5	79.4	74.9	**74.4**	70.0	70.3	72.0	**70.8**	**73.0**
14	HD3448	214	75.9	72.0	66.3	78.4	76.6	**73.8**	69.6	71.0	72.6	**71.1**	**72.8**
15	PBW917	215	76.4	74.3	71.5	80.2	78.7	**76.2**	74.4	74.7	74.8	**74.6**	**75.6**
16	BRW3942	216	74.0	75.4	68.4	78.6	78.6	**75.0**	73.3	73.8	74.4	**73.8**	**74.6**
17	DBW415	217	75.1	74.4	62.9	79.9	77.8	**74.0**	72.9	72.4	74.3	**73.2**	**73.7**
18	HUW855	218	74.7	73.2	68.1	79.7	77.7	**74.7**	71.7	69.2	72.4	**71.1**	**73.3**
19	DBW417	219	73.9	75.8	68.7	77.2	76.2	**74.4**	72.7	66.1	71.5	**70.1**	**72.8**
20	NWS2216	220	76.8	72.8	71.0	79.1	78.0	**75.5**	75.4	66.1	73.6	**71.7**	**74.1**
21	PBW913	221	76.5	78.5	72.6	79.5	78.9	**77.2**	74.1	73.6	75.3	**74.3**	**76.1**
22	HD3449	222	74.3	75.6	67.2	79.2	77.7	**74.8**	72.4	68.0	73.7	**71.4**	**73.5**
23	DBW187 (C)	223	74.8	71.4	66.9	79.2	77.8	**74.0**	72.3	70.1	71.7	**71.4**	**73.0**
24	HP1979	224	76.4	76.8	71.3	78.2	77.7	**76.1**	74.3	69.8	73.9	**72.7**	**74.8**
25	NW8075	225	72.8	75.4	67.3	77.4	74.9	**73.6**	72.3	66.5	74.5	**71.1**	**72.6**
26	UP3132	226	72.5	75.9	68.4	78.0	76.1	**74.2**	71.2	65.9	70.8	**69.3**	**72.4**
27	HP1978	227	70.8	73.4	60.6	75.6	74.6	**71.0**	71.1	64.2	70.1	**68.5**	**70.1**
28	K2203	228	70.5	71.7	62.4	76.9	75.7	**71.4**	70.0	64.0	70.7	**68.2**	**70.2**
29	UP3125	229	71.9	76.4	70.7	78.2	76.6	**74.8**	71.5	66.9	73.4	**70.6**	**73.2**
30	DBW413	230	75.7	73.4	69.6	77.4	78.0	**74.8**	74.1	68.9	74.0	**72.3**	**73.9**
31	WH1317	231	74.3	76.5	73.2	80.3	80.4	**76.9**	75.8	73.3	74.9	**74.7**	**76.1**
32	UP3124	232	74.5	75.3	68.4	79.1	79.7	**75.4**	72.2	71.5	74.4	**72.7**	**74.4**
33	DBW416	233	76.5	69.9	68.3	78.2	78.0	**74.2**	73.3	67.7	72.2	**71.1**	**73.0**
34	RAJ4579	234	75.2	75.9	69.2	78.8	79.0	**75.6**	73.2	70.9	70.1	**71.4**	**74.0**
35	DBW222 (C)	235	71.9	73.2	67.0	78.8	76.5	**73.5**	70.9	68.3	71.6	**70.3**	**72.3**
36	HD3086 (C)	236	73.7	75.1	70.4	78.9	77.7	**75.2**	72.4	68.8	73.8	**71.7**	**73.9**
Mean			**74.4**	**74.6**	**68.1**	**78.5**	**77.3**	**74.6**	**72.7**	**69.5**	**73.1**	**71.8**	**73.5**

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	Delhi	Durgapura	Hisar	Karnal	Mean	Kanpur	Sabour	Varanasi	Mean	
1	K2204	201	11.7	13.4	11.9	10.0	11.0	**11.6**	10.9	11.8	10.6	**11.1**	**11.4**
2	BCW29	202	11.4	13.4	13.3	8.1	10.4	**11.3**	10.8	11.1	11.5	**11.1**	**11.3**
3	PBW916	203	11.7	13.8	13.0	11.5	11.3	**12.3**	13.1	12.0	12.3	**12.5**	**12.3**
4	JKW305	204	10.4	14.2	14.1	8.6	10.5	**11.6**	11.6	12.0	11.8	**11.8**	**11.7**
5	HD3467	205	12.4	13.3	13.4	11.6	10.2	**12.2**	12.2	12.2	11.4	**11.9**	**12.1**
6	DBW414	206	11.5	12.5	14.0	8.1	10.2	**11.3**	11.9	12.4	10.7	**11.7**	**11.4**
7	NW8073	207	11.4	12.8	13.0	10.7	11.0	**11.8**	11.4	12.4	11.1	**11.6**	**11.7**
8	BRW3946	208	10.9	13.7	13.9	10.5	10.2	**11.8**	12.5	12.2	12.1	**12.3**	**12.0**
9	PBW915	209	11.9	13.9	15.5	9.5	12.1	**12.6**	13.3	12.9	12.4	**12.9**	**12.7**
10	SVPWL21-07	210	10.6	14.1	13.4	9.0	11.6	**11.7**	13.0	12.1	11.9	**12.3**	**12.0**
11	WH1318	211	11.8	13.6	13.0	8.9	11.1	**11.7**	11.4	12.2	12.3	**12.0**	**11.8**
12	PBW914	212	11.7	14.0	14.6	13.0	11.8	**13.0**	12.7	11.9	12.2	**12.3**	**12.7**
13	UBW19	213	10.4	13.2	13.1	10.3	11.0	**11.6**	12.0	12.9	10.8	**11.9**	**11.7**
14	HD3448	214	10.3	13.3	14.2	9.0	10.8	**11.5**	13.0	11.7	11.9	**12.2**	**11.8**
15	PBW917	215	12.1	14.7	13.2	10.2	11.5	**12.3**	12.3	12.2	12.1	**12.2**	**12.3**
16	BRW3942	216	11.5	13.3	13.6	8.1	10.4	**11.4**	11.9	11.1	11.2	**11.4**	**11.4**
17	DBW415	217	12.0	13.2	14.9	8.8	11.0	**12.0**	10.3	12.3	11.0	**11.2**	**11.7**
18	HUW855	218	11.4	12.8	13.1	8.5	9.9	**11.1**	12.3	12.5	10.7	**11.8**	**11.4**
19	DBW417	219	10.6	13.0	12.8	8.6	11.0	**11.2**	11.3	11.7	11.0	**11.3**	**11.2**
20	NWS2216	220	10.6	13.8	13.3	8.8	10.7	**11.4**	12.9	12.8	11.8	**12.5**	**11.8**
21	PBW913	221	10.8	13.5	13.3	10.9	11.4	**12.0**	13.1	12.4	11.9	**12.5**	**12.2**
22	HD3449	222	11.5	13.4	13.5	9.3	10.6	**11.7**	12.0	12.1	11.2	**11.8**	**11.7**
23	DBW187 (C)	223	12.0	14.6	13.9	8.8	10.2	**11.9**	10.7	12.3	11.2	**11.4**	**11.7**
24	HP1979	224	10.8	12.8	13.3	10.7	10.9	**11.7**	11.5	11.7	11.7	**11.6**	**11.7**
25	NW8075	225	12.3	12.9	13.1	10.5	11.0	**12.0**	12.3	12.0	11.7	**12.0**	**12.0**
26	UP3132	226	12.1	13.9	13.0	9.9	10.9	**12.0**	10.8	12.4	11.3	**11.5**	**11.8**
27	HP1978	227	12.2	12.6	13.7	9.9	10.6	**11.8**	10.7	12.6	10.9	**11.4**	**11.6**
28	K2203	228	12.5	13.6	13.1	11.6	11.3	**12.4**	13.2	12.3	11.9	**12.5**	**12.4**
29	UP3125	229	11.7	13.6	12.1	9.7	10.5	**11.5**	12.1	12.8	11.3	**12.1**	**11.7**
30	DBW413	230	11.8	14.5	13.3	9.0	10.8	**11.9**	10.8	12.7	12.3	**11.9**	**11.9**
31	WH1317	231	12.5	13.3	14.5	9.2	10.5	**12.0**	12.4	12.9	11.1	**12.1**	**12.0**
32	UP3124	232	11.5	13.4	14.5	9.7	10.1	**11.8**	12.1	13.5	10.4	**12.0**	**11.9**
33	DBW416	233	11.0	14.1	13.1	8.2	10.5	**11.4**	12.7	12.4	11.9	**12.3**	**11.7**
34	RAJ4579	234	10.5	13.3	13.0	8.7	10.0	**11.1**	12.0	11.8	11.6	**11.8**	**11.4**
35	DBW222 (C)	235	10.6	12.4	12.9	10.7	10.9	**11.5**	12.0	12.1	11.1	**11.7**	**11.6**
36	HD3086 (C)	236	11.4	13.4	13.7	8.5	10.8	**11.6**	10.8	12.5	11.4	**11.6**	**11.6**
Mean			**11.4**	**13.5**	**13.5**	**9.6**	**10.8**	**11.8**	**11.9**	**12.2**	**11.5**	**11.9**	**11.8**

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

S. No.	Entry	Trial Code	NWPZ						NEPZ				Overall Mean
			Ludhiana	Delhi	Durgapura	Hisar	Karnal	Mean	Kanpur	Sabour	Varanasi	Mean	
1	K2204	201	38.0	53.0	44.0	38.0	61.1	**46.8**	41.0	41.0	43.0	**41.7**	**44.9**
2	BCW29	202	45.0	43.0	54.0	47.0	52.3	**48.3**	56.0	53.0	52.0	**53.7**	**50.3**
3	PBW916	203	48.0	50.0	54.0	43.0	57.3	**50.5**	35.0	54.0	42.0	**43.7**	**47.9**
4	JKW305	204	50.0	58.0	63.0	49.0	63.1	**56.6**	48.0	54.0	58.0	**53.3**	**55.4**
5	HD3467	205	50.0	56.0	46.0	49.0	57.3	**51.7**	52.0	52.0	49.0	**51.0**	**51.4**
6	DBW414	206	39.0	50.0	53.0	44.0	52.3	**47.7**	51.0	48.0	53.0	**50.7**	**48.8**
7	NW8073	207	52.0	60.0	43.0	49.0	54.2	**51.6**	44.0	49.0	54.0	**49.0**	**50.7**
8	BRW3946	208	49.0	51.0	53.0	36.0	45.4	**46.9**	45.0	46.0	54.0	**48.3**	**47.4**
9	PBW915	209	40.0	57.0	43.0	44.0	53.4	**47.5**	47.0	43.0	56.0	**48.7**	**47.9**
10	SVPWL21-07	210	52.0	43.0	64.0	54.0	63.1	**55.2**	50.0	52.0	61.0	**54.3**	**54.9**
11	WH1318	211	41.0	48.0	49.0	39.0	51.1	**45.6**	45.0	48.0	46.0	**46.3**	**45.9**
12	PBW914	212	37.0	46.0	47.0	42.0	44.6	**43.3**	38.0	60.0	44.0	**47.3**	**44.8**
13	UBW19	213	44.0	45.0	46.0	47.0	58.4	**48.1**	57.0	47.0	53.0	**52.3**	**49.7**
14	HD3448	214	52.0	56.0	59.0	48.0	64.2	**55.8**	56.0	53.0	54.0	**54.3**	**55.3**
15	PBW917	215	39.0	64.0	56.0	47.0	65.0	**54.2**	52.0	60.0	61.0	**57.7**	**55.5**
16	BRW3942	216	40.0	53.0	54.0	38.0	52.3	**47.5**	40.0	46.0	56.0	**47.3**	**47.4**
17	DBW415	217	40.0	56.0	46.0	43.0	51.1	**47.2**	44.0	53.0	51.0	**49.3**	**48.0**
18	HUW855	218	38.0	48.0	58.0	45.0	59.6	**49.7**	47.0	53.0	51.0	**50.3**	**49.9**
19	DBW417	219	40.0	45.0	52.0	37.0	56.5	**46.1**	41.0	48.0	45.0	**44.7**	**45.6**
20	NWS2216	220	50.0	64.0	65.0	49.0	60.8	**57.8**	58.0	56.0	50.0	**54.7**	**56.6**
21	PBW913	221	50.0	50.0	53.0	48.0	67.7	**53.7**	48.0	54.0	51.0	**51.0**	**52.7**
22	HD3449	222	57.0	48.0	53.0	45.0	51.9	**51.0**	54.0	55.0	61.0	**56.7**	**53.1**
23	DBW187 (C)	223	55.0	60.0	63.0	50.0	58.8	**57.4**	56.0	63.0	63.0	**60.7**	**58.6**
24	HP1979	224	32.0	35.0	37.0	34.0	46.1	**36.8**	48.0	40.0	47.0	**45.0**	**39.9**
25	NW8075	225	41.0	54.0	44.0	45.0	55.0	**47.8**	48.0	47.0	52.0	**49.0**	**48.2**
26	UP3132	226	43.0	53.0	54.0	55.0	56.9	**52.4**	47.0	48.0	62.0	**52.3**	**52.4**
27	HP1978	227	41.0	47.0	64.0	38.0	53.1	**48.6**	44.0	43.0	62.0	**49.7**	**49.0**
28	K2203	228	46.0	58.0	59.0	49.0	63.4	**55.1**	51.0	44.0	63.0	**52.7**	**54.2**
29	UP3125	229	39.0	38.0	43.0	26.0	50.4	**39.3**	43.0	41.0	63.0	**49.0**	**42.9**
30	DBW413	230	41.0	60.0	50.0	38.0	56.9	**49.2**	47.0	20.0	48.0	**38.3**	**45.1**
31	WH1317	231	49.0	57.0	69.0	48.0	60.0	**56.6**	57.0	59.0	58.0	**58.0**	**57.1**
32	UP3124	232	54.0	59.0	49.0	52.0	54.2	**53.6**	51.0	40.0	55.0	**48.7**	**51.8**
33	DBW416	233	46.0	44.0	48.0	36.0	50.4	**44.9**	40.0	42.0	46.0	**42.7**	**44.0**
34	RAJ4579	234	42.0	58.0	47.0	52.0	47.3	**49.3**	48.0	50.0	48.0	**48.7**	**49.0**
35	DBW222 (C)	235	47.0	57.0	54.0	50.0	58.4	**53.3**	49.0	51.0	57.0	**52.3**	**52.9**
36	HD3086 (C)	236	53.0	61.0	51.0	42.0	58.1	**53.0**	35.0	54.0	57.0	**48.7**	**51.4**
Mean			**45.0**	**52.4**	**52.4**	**44.3**	**55.9**	**50.0**	**47.6**	**49.1**	**53.5**	**50.1**	**50.0**

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

S. No.	Entry	Trial Code	NWPZ						NEPZ				Overall Mean
			Ludhiana	Delhi	Durgapura	Hisar	Karnal	Mean	Kanpur	Sabour	Varanasi	Mean	
1	K2204	201	6.0	6.0	5.0	6.0	7.0	**6.0**	6.0	6.0	6.0	**6.0**	**6.0**
2	BCW29	202	7.0	7.0	7.0	6.0	7.0	**6.8**	6.0	6.0	6.0	**6.0**	**6.5**
3	PBW916	203	5.0	6.0	6.0	6.0	5.0	**5.6**	7.0	6.0	6.0	**6.3**	**5.9**
4	JKW305	204	6.0	7.0	5.0	7.0	5.5	**6.1**	6.0	5.0	7.0	**6.0**	**6.1**
5	HD3467	205	6.0	6.0	6.0	6.0	4.0	**5.6**	7.0	6.0	6.0	**6.3**	**5.9**
6	DBW414	206	7.0	7.0	7.0	6.0	3.5	**6.1**	8.0	7.0	7.0	**7.3**	**6.6**
7	NW8073	207	5.0	5.0	6.0	7.0	7.5	**6.1**	5.0	6.0	7.0	**6.0**	**6.1**
8	BRW3946	208	6.0	6.0	6.0	7.0	7.0	**6.4**	7.0	7.0	6.0	**6.7**	**6.5**
9	PBW915	209	7.0	5.0	7.0	7.0	7.5	**6.7**	6.0	6.0	7.0	**6.3**	**6.6**
10	SVPWL21-07	210	6.0	7.0	6.0	6.0	7.0	**6.4**	5.0	5.0	6.0	**5.3**	**6.0**
11	WH1318	211	7.0	6.0	7.0	6.0	4.0	**6.0**	8.0	7.0	6.0	**7.0**	**6.4**
12	PBW914	212	6.0	7.0	6.0	6.0	4.5	**5.9**	7.0	6.0	7.0	**6.7**	**6.2**
13	UBW19	213	5.0	6.0	7.0	7.0	7.0	**6.4**	6.0	5.0	7.0	**6.0**	**6.3**
14	HD3448	214	7.0	7.0	6.0	8.0	8.5	**7.3**	6.0	7.0	6.0	**6.3**	**6.9**
15	PBW917	215	6.0	6.0	6.0	5.0	9.0	**6.4**	5.0	6.0	7.0	**6.0**	**6.3**
16	BRW3942	216	6.0	5.0	7.0	6.0	5.5	**5.9**	7.0	5.0	7.0	**6.3**	**6.1**
17	DBW415	217	6.0	6.0	5.0	6.0	6.0	**5.8**	6.0	6.0	7.0	**6.3**	**6.0**
18	HUW855	218	7.0	5.0	6.0	7.0	7.5	**6.5**	6.0	5.0	6.0	**5.7**	**6.2**
19	DBW417	219	7.0	7.0	7.0	5.0	4.0	**6.0**	8.0	7.0	7.0	**7.3**	**6.5**
20	NWS2216	220	8.0	7.0	7.0	6.0	4.0	**6.4**	8.0	7.0	7.0	**7.3**	**6.8**
21	PBW913	221	8.0	6.0	6.0	6.0	8.5	**6.9**	7.0	5.0	6.0	**6.0**	**6.6**
22	HD3449	222	6.0	5.0	5.0	7.0	5.5	**5.7**	6.0	6.0	6.0	**6.0**	**5.8**
23	DBW187 (C)	223	6.0	6.0	6.0	5.0	7.0	**6.0**	6.0	7.0	6.0	**6.3**	**6.1**
24	HP1979	224	6.0	5.0	6.0	6.0	5.0	**5.6**	7.0	6.0	7.0	**6.7**	**6.0**
25	NW8075	225	7.0	7.0	5.0	7.0	5.5	**6.3**	6.0	5.0	7.0	**6.0**	**6.2**
26	UP3132	226	6.0	6.0	6.0	6.0	8.0	**6.4**	5.0	5.0	7.0	**5.7**	**6.1**
27	HP1978	227	6.0	7.0	6.0	7.0	8.0	**6.8**	6.0	7.0	6.0	**6.3**	**6.6**
28	K2203	228	7.0	6.0	7.0	6.0	6.5	**6.5**	6.0	6.0	6.0	**6.0**	**6.3**
29	UP3125	229	7.0	6.0	7.0	5.0	9.0	**6.8**	6.0	5.0	7.0	**6.0**	**6.5**
30	DBW413	230	7.0	7.0	5.0	7.0	6.5	**6.5**	7.0	6.0	6.0	**6.3**	**6.4**
31	WH1317	231	6.0	5.0	6.0	6.0	7.0	**6.0**	5.0	5.0	7.0	**5.7**	**5.9**
32	UP3124	232	6.0	5.0	7.0	6.0	6.0	**6.0**	6.0	6.0	7.0	**6.3**	**6.1**
33	DBW416	233	6.0	6.0	6.0	6.0	7.0	**6.2**	5.0	8.0	6.0	**6.3**	**6.3**
34	RAJ4579	234	7.0	9.0	7.0	7.0	3.0	**6.6**	8.0	5.0	7.0	**6.7**	**6.6**
35	DBW222 (C)	235	8.0	6.0	6.0	7.0	7.0	**6.8**	7.0	6.0	6.0	**6.3**	**6.6**
36	HD3086 (C)	236	5.0	7.0	6.0	8.0	7.0	**6.6**	7.0	7.0	7.0	**7.0**	**6.8**
Mean			**6.4**	**6.2**	**6.2**	**6.3**	**6.3**	**6.3**	**6.4**	**6.0**	**6.5**	**6.3**	**6.3**

Table 11: Grain appearance score (Max. 10) of *T. aestivum* genotypes in NIVT 2

S. No	Entry	Code	CZ					PZ				Overall Mean
			Indore	Junagadh	P. kheda	Vijapur	Mean	Pune	Niphad	Dharwad	Mean	
1	GW549	301	5.0	6.8	5.5	4.5	**5.5**	4.3	3.5	3.5	**3.8**	**4.7**
2	PWU16	302	5.5	7.5	6.0	6.5	**6.4**	5.5	5.0	4.5	**5.0**	**5.8**
3	MACS6844	303	4.0	4.8	4.8	3.3	**4.2**	5.5	5.3	4.5	**5.1**	**4.6**
4	GW555	304	5.8	6.8	5.8	6.0	**6.1**	5.8	4.8	5.0	**5.2**	**5.7**
5	MACS6842	305	5.5	5.5	4.5	5.0	**5.1**	5.5	4.0	4.8	**4.8**	**5.0**
6	UAS3026	306	4.8	5.3	4.8	5.8	**5.2**	5.0	4.0	4.0	**4.3**	**4.8**
7	BW18R6016	307	4.8	5.3	5.3	6.0	**5.4**	6.8	5.0	5.3	**5.7**	**5.5**
8	NIAW4364	308	4.5	4.0	4.5	4.0	**4.3**	5.5	4.8	4.3	**4.9**	**4.5**
9	PBN16-1766	309	4.8	4.8	4.0	3.8	**4.4**	5.5	4.8	3.8	**4.7**	**4.5**
10	HD3451	310	4.3	6.3	4.5	5.0	**5.0**	4.8	4.8	4.5	**4.7**	**4.9**
11	RAJ4582	311	5.0	7.5	4.5	6.0	**5.8**	5.0	5.0	4.5	**4.8**	**5.4**
12	NIAW4440	312	5.5	7.3	5.5	4.5	**5.7**	5.3	5.3	5.0	**5.2**	**5.5**
13	GW550	313	5.3	7.5	5.8	6.8	**6.4**	5.8	5.3	6.3	**5.8**	**6.1**
14	HI1683	314	5.0	7.5	6.0	6.0	**6.1**	6.3	4.8	5.3	**5.5**	**5.8**
15	MP3570	315	5.0	6.5	5.5	5.8	**5.7**	5.0	5.0	4.3	**4.8**	**5.3**
16	CG1045	316	5.0	6.8	5.3	6.0	**5.8**	5.0	5.0	5.0	**5.0**	**5.4**
17	MACS6222 (C)	317	5.3	7.0	5.3	5.8	**5.9**	5.0	5.0	5.5	**5.2**	**5.6**
18	MP3573	318	5.5	6.0	5.0	6.3	**5.7**	5.0	5.0	5.0	**5.0**	**5.4**
19	LOK80	319	5.0	6.5	4.8	5.0	**5.3**	5.5	4.8	6.0	**5.4**	**5.4**
20	UAS3025	320	5.0	5.8	5.0	5.5	**5.3**	4.8	4.3	4.3	**4.5**	**5.0**
21	GW554	321	5.5	7.0	5.0	6.3	**6.0**	5.3	5.8	6.0	**5.7**	**5.8**
22	GW322 (C)	322	5.0	6.0	4.5	4.8	**5.1**	4.8	4.8	4.3	**4.6**	**4.9**
23	HI1684	323	5.8	6.8	4.8	5.3	**5.7**	5.5	5.5	6.3	**5.8**	**5.7**
24	MP1393	324	4.5	4.5	4.5	4.3	**4.5**	5.0	4.8	5.0	**4.9**	**4.7**
25	DBW419	325	4.5	5.0	5.3	5.3	**5.0**	5.5	5.0	5.0	**5.2**	**5.1**
26	HD3450	326	4.8	6.0	5.5	5.5	**5.5**	5.0	5.3	4.8	**5.0**	**5.3**
27	MP1392	327	5.5	6.5	5.3	7.0	**6.1**	6.0	5.5	7.0	**6.2**	**6.1**
28	NWS2170	328	4.8	7.3	5.8	5.0	**5.7**	6.0	4.5	6.3	**5.6**	**5.7**
29	MACS6826	329	4.8	6.5	4.8	4.3	**5.1**	6.0	5.3	4.8	**5.4**	**5.2**
30	DBW418	330	4.5	4.8	5.0	4.5	**4.7**	5.5	4.8	5.3	**5.2**	**4.9**
31	PBW918	331	5.3	5.0	5.3	4.5	**5.0**	5.0	5.5	4.8	**5.1**	**5.1**
32	MACS6837	332	5.3	6.0	5.3	5.3	**5.5**	5.8	5.5	5.5	**5.6**	**5.5**
33	DBW187 (C)	333	4.3	5.8	5.3	5.3	**5.2**	5.5	5.0	3.5	**4.7**	**5.0**
34	AKAW5347	334	4.3	5.0	4.0	3.5	**4.2**	5.0	4.8	4.3	**4.7**	**4.4**
35	PWU20	335	4.5	4.5	4.5	4.0	**4.4**	5.5	5.5	4.0	**5.0**	**4.6**
36	GW548	336	5.3	6.3	5.5	5.0	**5.5**	5.8	5.3	6.0	**5.7**	**5.6**
		Mean	**5.0**	**6.1**	**5.1**	**5.2**	**5.3**	**5.4**	**5.0**	**5.0**	**5.1**	**5.2**

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

S. No	Entry	Code	CZ					PZ				Overall Mean
			Indore	Junagadh	P. kheda	Vijapur	Mean	Pune	Niphad	Dharwad	Mean	
1	GW549	301	82.3	83.7	82.9	81.3	**82.6**	81.7	81.7	82.8	**82.1**	**82.3**
2	PWU16	302	82.8	83.6	83.3	81.8	**82.9**	81.7	82.3	81.7	**81.9**	**82.5**
3	MACS6844	303	77.5	79.9	75.8	75.3	**77.1**	82.0	81.0	80.7	**81.2**	**78.9**
4	GW555	304	84.9	85.8	84.5	84.7	**85.0**	81.1	82.9	85.6	**83.2**	**84.2**
5	MACS6842	305	78.8	82.8	78.4	80.9	**80.2**	80.4	80.8	80.4	**80.5**	**80.4**
6	UAS3026	306	80.0	82.6	80.7	82.3	**81.4**	81.6	81.9	81.0	**81.5**	**81.4**
7	BW18R6016	307	80.1	82.3	80.8	81.6	**81.2**	82.0	80.4	80.9	**81.1**	**81.2**
8	NIAW4364	308	81.3	78.7	78.6	77.9	**79.1**	82.5	81.7	80.6	**81.6**	**80.2**
9	PBN16-1766	309	78.7	81.6	78.5	79.7	**79.6**	81.5	79.8	80.6	**80.6**	**80.1**
10	HD3451	310	82.2	83.4	82.1	81.7	**82.4**	81.8	81.5	81.8	**81.7**	**82.1**
11	RAJ4582	311	80.1	83.5	79.0	80.1	**80.7**	82.7	81.4	82.7	**82.3**	**81.4**
12	NIAW4440	312	82.5	80.8	80.0	79.7	**80.8**	81.0	82.0	80.7	**81.2**	**81.0**
13	GW550	313	83.4	85.4	83.1	84.5	**84.1**	84.0	83.6	83.8	**83.8**	**84.0**
14	HI1683	314	81.4	84.1	82.5	82.4	**82.6**	80.6	82.4	82.6	**81.9**	**82.3**
15	MP3570	315	80.4	84.0	80.7	80.9	**81.5**	81.7	81.5	80.0	**81.1**	**81.3**
16	CG1045	316	79.4	83.3	80.0	80.9	**80.9**	81.9	81.9	81.6	**81.8**	**81.3**
17	MACS6222 (C)	317	80.7	84.3	81.6	81.1	**81.9**	81.8	81.4	81.6	**81.6**	**81.8**
18	MP3573	318	83.0	83.9	82.3	82.4	**82.9**	80.9	80.4	81.7	**81.0**	**82.1**
19	LOK80	319	79.5	81.7	79.8	79.7	**80.2**	79.2	78.9	79.6	**79.2**	**79.8**
20	UAS3025	320	81.8	84.0	82.0	82.9	**82.7**	80.4	81.7	81.5	**81.2**	**82.0**
21	GW554	321	83.9	85.7	84.6	83.9	**84.5**	83.8	84.1	84.6	**84.2**	**84.4**
22	GW322 (C)	322	80.4	82.4	80.8	80.4	**81.0**	81.1	81.3	79.9	**80.8**	**80.9**
23	HI1684	323	83.8	84.8	82.7	83.4	**83.7**	82.9	83.3	83.4	**83.2**	**83.5**
24	MP1393	324	80.3	82.7	77.4	79.2	**79.9**	80.5	80.3	81.1	**80.6**	**80.2**
25	DBW419	325	81.1	83.3	81.5	82.0	**82.0**	81.9	81.0	80.8	**81.2**	**81.7**
26	HD3450	326	81.8	84.9	82.5	82.3	**82.9**	81.4	82.0	81.7	**81.7**	**82.4**
27	MP1392	327	82.9	83.7	82.3	82.5	**82.9**	81.3	82.3	83.8	**82.5**	**82.7**
28	NWS2170	328	79.5	83.6	81.6	81.0	**81.4**	81.4	80.8	81.4	**81.2**	**81.3**
29	MACS6826	329	80.3	84.0	80.0	80.7	**81.3**	82.1	81.4	81.9	**81.8**	**81.5**
30	DBW418	330	79.8	81.8	78.1	79.4	**79.8**	80.5	81.2	82.3	**81.3**	**80.4**
31	PBW918	331	80.8	82.6	81.3	81.3	**81.5**	81.9	81.4	81.8	**81.7**	**81.6**
32	MACS6837	332	79.1	82.2	77.9	80.2	**79.9**	80.0	81.0	81.0	**80.7**	**80.2**
33	DBW187 (C)	333	78.9	82.5	80.4	81.5	**80.8**	81.5	80.6	77.0	**79.7**	**80.3**
34	AKAW5347	334	78.0	81.3	76.8	77.7	**78.5**	79.6	79.2	80.6	**79.8**	**79.0**
35	PWU20	335	80.2	81.9	80.9	80.2	**80.8**	82.0	83.0	82.2	**82.4**	**81.5**
36	GW548	336	81.0	84.4	82.7	82.7	**82.7**	82.6	82.9	83.9	**83.1**	**82.9**
		Mean	**80.9**	**83.1**	**80.8**	**81.1**	**81.5**	**81.5**	**81.5**	**81.6**	**81.6**	**81.5**

Table 13: Grain protein content (%) of *T. aestivum* genotypes in NIVT 2

S. No	Entry	Code	CZ					PZ				Overall mean
			Indore	Junagadh	P. kheda	Vijapur	Mean	Pune	Niphad	Dharwad	Mean	
1	GW549	301	11.0	12.0	11.1	11.7	**11.5**	11.8	11.2	12.5	**11.8**	**11.6**
2	PWU16	302	10.8	12.6	11.8	11.5	**11.7**	12.4	11.1	13.8	**12.4**	**12.0**
3	MACS6844	303	12.7	12.5	13.2	13.1	**12.9**	12.4	12.0	13.2	**12.5**	**12.7**
4	GW555	304	11.0	11.7	11.0	11.0	**11.2**	12.1	11.2	12.0	**11.8**	**11.4**
5	MACS6842	305	12.2	12.3	12.4	11.7	**12.2**	12.3	11.1	13.7	**12.4**	**12.2**
6	UAS3026	306	11.4	11.7	10.9	10.5	**11.1**	11.0	10.8	12.8	**11.5**	**11.3**
7	BW18R6016	307	11.2	13.0	11.9	12.1	**12.1**	12.5	11.7	13.3	**12.5**	**12.2**
8	NIAW4364	308	12.5	13.2	12.5	12.3	**12.6**	11.7	11.0	13.9	**12.2**	**12.4**
9	PBN16-1766	309	13.4	13.2	13.8	12.9	**13.3**	13.2	10.9	14.5	**12.9**	**13.1**
10	HD3451	310	11.9	12.6	12.2	12.1	**12.2**	13.0	12.6	13.2	**12.9**	**12.5**
11	RAJ4582	311	11.4	11.7	11.9	12.1	**11.8**	11.9	11.0	13.7	**12.2**	**12.0**
12	NIAW4440	312	13.2	12.5	13.4	12.8	**13.0**	12.8	11.7	14.5	**13.0**	**13.0**
13	GW550	313	10.1	11.8	11.9	11.0	**11.2**	11.3	10.7	12.2	**11.4**	**11.3**
14	HI1683	314	11.0	12.3	11.3	11.4	**11.5**	12.1	11.0	12.1	**11.7**	**11.6**
15	MP3570	315	11.3	11.3	11.5	11.0	**11.3**	11.4	10.2	13.1	**11.6**	**11.4**
16	CG1045	316	12.1	12.4	11.5	12.6	**12.2**	11.9	11.7	13.1	**12.2**	**12.2**
17	MACS6222 (C)	317	12.6	12.3	11.3	12.5	**12.2**	11.9	10.8	13.4	**12.0**	**12.1**
18	MP3573	318	13.2	14.6	12.5	13.1	**13.4**	14.0	14.3	14.7	**14.3**	**13.8**
19	LOK80	319	10.1	12.4	12.8	11.7	**11.8**	11.7	11.5	12.3	**11.8**	**11.8**
20	UAS3025	320	12.6	13.4	12.2	12.8	**12.8**	13.0	13.0	13.2	**13.1**	**12.9**
21	GW554	321	10.0	12.0	10.2	10.6	**10.7**	11.1	12.3	11.8	**11.7**	**11.1**
22	GW322 (C)	322	10.3	10.9	10.5	10.4	**10.5**	10.3	10.8	12.1	**11.1**	**10.8**
23	HI1684	323	10.9	11.9	11.4	10.9	**11.3**	11.4	12.7	12.3	**12.1**	**11.6**
24	MP1393	324	11.6	12.2	12.9	12.4	**12.3**	12.5	11.0	13.3	**12.3**	**12.3**
25	DBW419	325	11.3	12.8	12.0	11.7	**12.0**	12.0	10.7	12.8	**11.8**	**11.9**
26	HD3450	326	11.4	12.5	11.8	11.4	**11.8**	12.4	11.6	13.6	**12.5**	**12.1**
27	MP1392	327	10.4	12.1	11.0	11.1	**11.2**	11.8	11.4	12.1	**11.8**	**11.4**
28	NWS2170	328	11.0	11.4	11.0	10.6	**11.0**	10.9	9.7	12.1	**10.9**	**11.0**
29	MACS6826	329	11.7	12.3	11.9	11.8	**11.9**	12.1	12.0	15.2	**13.1**	**12.4**
30	DBW418	330	12.5	12.0	11.7	12.0	**12.1**	12.2	9.8	14.4	**12.1**	**12.1**
31	PBW918	331	12.4	13.5	13.2	12.8	**13.0**	13.6	13.0	14.0	**13.5**	**13.2**
32	MACS6837	332	11.4	12.1	11.3	11.5	**11.6**	11.5	11.7	13.1	**12.1**	**11.8**
33	DBW187 (C)	333	11.4	12.8	11.3	12.4	**12.0**	12.3	10.6	16.4	**13.1**	**12.5**
34	AKAW5347	334	11.5	11.4	11.4	11.6	**11.5**	11.3	12.4	12.8	**12.2**	**11.8**
35	PWU20	335	11.7	11.3	11.5	11.5	**11.5**	10.9	11.6	11.2	**11.2**	**11.4**
36	GW548	336	10.9	11.0	11.5	10.3	**10.9**	10.3	9.3	12.1	**10.6**	**10.8**
		Mean	**11.6**	**12.3**	**11.8**	**11.7**	**11.9**	**12.0**	**11.4**	**13.2**	**12.2**	**12.0**

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

S. No	Entry	Code	CZ					PZ				Overall mean
			Indore	Junagadh	P. kheda	Vijapur	Mean	Pune	Niphad	Dharwad	Mean	
1	GW549	301	42.0	49.0	36.0	46.0	**43.3**	45.0	38.0	53.0	**45.3**	**44.1**
2	PWU16	302	36.0	55.0	39.0	45.0	**43.8**	54.0	37.0	58.0	**49.7**	**46.3**
3	MACS6844	303	53.0	51.0	50.0	52.0	**51.5**	53.0	48.0	55.0	**52.0**	**51.7**
4	GW555	304	38.0	42.0	32.0	39.0	**37.8**	45.0	37.0	48.0	**43.3**	**40.1**
5	MACS6842	305	49.0	50.0	47.0	47.0	**48.3**	47.0	45.0	55.0	**49.0**	**48.6**
6	UAS3026	306	44.0	46.0	37.0	39.0	**41.5**	44.0	42.0	54.0	**46.7**	**43.7**
7	BW18R6016	307	43.0	58.0	44.0	51.0	**49.0**	53.0	47.0	55.0	**51.7**	**50.1**
8	NIAW4364	308	53.0	57.0	46.0	50.0	**51.5**	44.0	40.0	58.0	**47.3**	**49.7**
9	PBN16-1766	309	56.0	57.0	54.0	54.0	**55.3**	55.0	46.0	57.0	**52.7**	**54.1**
10	HD3451	310	47.0	56.0	48.0	50.0	**50.3**	60.0	54.0	58.0	**57.3**	**53.3**
11	RAJ4582	311	41.0	45.0	42.0	50.0	**44.5**	48.0	40.0	59.0	**49.0**	**46.4**
12	NIAW4440	312	59.0	55.0	56.0	55.0	**56.3**	55.0	47.0	59.0	**53.7**	**55.1**
13	GW550	313	24.0	42.0	39.0	36.0	**35.3**	34.0	30.0	51.0	**38.3**	**36.6**
14	HI1683	314	40.0	55.0	35.0	44.0	**43.5**	52.0	37.0	51.0	**46.7**	**44.9**
15	MP3570	315	36.0	35.0	36.0	40.0	**36.8**	38.0	26.0	57.0	**40.3**	**38.3**
16	CG1045	316	50.0	56.0	40.0	56.0	**50.5**	49.0	45.0	55.0	**49.7**	**50.1**
17	MACS6222 (C)	317	55.0	50.0	35.0	57.0	**49.3**	48.0	35.0	58.0	**47.0**	**48.3**
18	MP3573	318	56.0	62.0	43.0	56.0	**54.3**	60.0	63.0	58.0	**60.3**	**56.9**
19	LOK80	319	27.0	50.0	47.0	47.0	**42.8**	45.0	40.0	49.0	**44.7**	**43.6**
20	UAS3025	320	54.0	62.0	44.0	57.0	**54.3**	59.0	56.0	55.0	**56.7**	**55.3**
21	GW554	321	23.0	46.0	22.0	33.0	**31.0**	33.0	49.0	45.0	**42.3**	**35.9**
22	GW322 (C)	322	32.0	33.0	27.0	36.0	**32.0**	26.0	33.0	52.0	**37.0**	**34.1**
23	HI1684	323	36.0	49.0	33.0	40.0	**39.5**	42.0	58.0	53.0	**51.0**	**44.4**
24	MP1393	324	48.0	53.0	50.0	54.0	**51.3**	55.0	44.0	57.0	**52.0**	**51.6**
25	DBW419	325	45.0	55.0	43.0	46.0	**47.3**	47.0	44.0	52.0	**47.7**	**47.4**
26	HD3450	326	45.0	58.0	40.0	46.0	**47.3**	57.0	45.0	58.0	**53.3**	**49.9**
27	MP1392	327	34.0	52.0	35.0	42.0	**40.8**	47.0	41.0	54.0	**47.3**	**43.6**
28	NWS2170	328	44.0	45.0	37.0	42.0	**42.0**	39.0	36.0	53.0	**42.7**	**42.3**
29	MACS6826	329	45.0	56.0	44.0	50.0	**48.8**	52.0	48.0	67.0	**55.7**	**51.7**
30	DBW418	330	52.0	51.0	46.0	50.0	**49.8**	51.0	41.0	59.0	**50.3**	**50.0**
31	PBW918	331	54.0	64.0	58.0	59.0	**58.8**	66.0	61.0	64.0	**63.7**	**60.9**
32	MACS6837	332	45.0	50.0	43.0	47.0	**46.3**	45.0	47.0	57.0	**49.7**	**47.7**
33	DBW187 (C)	333	46.0	59.0	37.0	55.0	**49.3**	53.0	41.0	67.0	**53.7**	**51.1**
34	AKAW5347	334	42.0	43.0	35.0	47.0	**41.8**	37.0	51.0	60.0	**49.3**	**45.0**
35	PWU20	335	49.0	45.0	41.0	49.0	**46.0**	39.0	47.0	44.0	**43.3**	**44.9**
36	GW548	336	37.0	34.0	34.0	34.0	**34.8**	26.0	22.0	56.0	**34.7**	**34.7**
		Mean	**43.9**	**50.7**	**41.0**	**47.3**	**45.7**	**47.3**	**43.4**	**55.6**	**48.8**	**47.0**

Table 15: Phenol colour test (0-10 scale) of *T. aestivum* genotypes in NIVT 2

S. No	Entry	Code	CZ					PZ				Overall mean
			Indore	Junagadh	P. kheda	Vijapur	Mean	Pune	Niphad	Dharwad	Mean	
1	GW549	301	6.5	7.0	6.0	6.5	**6.5**	7.0	6.0	7.5	**6.8**	**6.6**
2	PWU16	302	6.0	6.5	6.0	6.5	**6.3**	7.0	6.0	7.0	**6.7**	**6.4**
3	MACS6844	303	3.0	3.0	2.0	1.5	**2.4**	3.0	3.5	2.0	**2.8**	**2.6**
4	GW555	304	2.0	2.0	2.0	1.0	**1.8**	2.0	2.0	1.5	**1.8**	**1.8**
5	MACS6842	305	7.0	7.0	6.5	8.0	**7.1**	7.0	7.0	7.0	**7.0**	**7.1**
6	UAS3026	306	7.0	6.5	6.5	7.5	**6.9**	7.0	7.0	7.0	**7.0**	**6.9**
7	BW18R6016	307	7.0	7.0	6.0	7.5	**6.9**	7.0	7.0	7.0	**7.0**	**6.9**
8	NIAW4364	308	6.5	6.5	6.5	8.0	**6.9**	6.5	6.5	6.5	**6.5**	**6.7**
9	PBN16-1766	309	7.0	6.5	6.0	8.0	**6.9**	6.5	7.0	6.5	**6.7**	**6.8**
10	HD3451	310	7.0	7.0	7.0	7.0	**7.0**	7.0	7.0	7.0	**7.0**	**7.0**
11	RAJ4582	311	6.5	7.0	7.0	7.0	**6.9**	7.0	7.0	7.0	**7.0**	**6.9**
12	NIAW4440	312	6.5	7.0	7.0	7.0	**6.9**	7.0	6.5	6.5	**6.7**	**6.8**
13	GW550	313	5.0	6.5	6.0	5.0	**5.6**	6.5	6.5	6.5	**6.5**	**6.0**
14	HI1683	314	5.5	6.5	6.5	5.0	**5.9**	6.5	6.5	6.5	**6.5**	**6.1**
15	MP3570	315	5.5	5.5	5.5	1.5	**4.5**	5.5	6.5	6.0	**6.0**	**5.1**
16	CG1045	316	2.0	2.0	2.0	5.0	**2.8**	2.0	3.0	1.5	**2.2**	**2.5**
17	MACS6222 (C)	317	7.0	7.0	7.0	2.5	**5.9**	7.0	7.0	7.0	**7.0**	**6.4**
18	MP3573	318	3.0	2.5	2.0	6.0	**3.4**	2.5	4.0	2.0	**2.8**	**3.1**
19	LOK80	319	6.5	6.5	6.5	7.5	**6.8**	6.5	6.5	5.5	**6.2**	**6.5**
20	UAS3025	320	7.0	6.5	7.0	5.0	**6.4**	6.5	7.0	6.5	**6.7**	**6.5**
21	GW554	321	5.0	5.0	5.5	6.0	**5.4**	5.5	5.0	6.0	**5.5**	**5.4**
22	GW322 (C)	322	6.5	6.5	6.5	4.0	**5.9**	6.5	6.0	6.5	**6.3**	**6.1**
23	HI1684	323	2.5	3.0	3.0	7.0	**3.9**	3.0	5.0	2.0	**3.3**	**3.6**
24	MP1393	324	6.5	6.5	7.0	7.0	**6.8**	7.0	7.0	7.0	**7.0**	**6.9**
25	DBW419	325	6.5	7.0	7.0	7.0	**6.9**	7.0	7.0	7.5	**7.2**	**7.0**
26	HD3450	326	6.5	7.0	6.5	7.0	**6.8**	6.5	7.0	7.0	**6.8**	**6.8**
27	MP1392	327	7.0	7.0	7.0	8.0	**7.3**	7.0	7.0	7.5	**7.2**	**7.2**
28	NWS2170	328	7.5	6.5	7.5	8.0	**7.4**	7.0	6.5	7.0	**6.8**	**7.1**
29	MACS6826	329	6.5	7.0	7.0	1.0	**5.4**	7.0	6.5	6.5	**6.7**	**5.9**
30	DBW418	330	3.0	2.5	2.0	7.0	**3.6**	2.5	3.0	1.5	**2.3**	**3.1**
31	PBW918	331	7.0	7.0	7.0	7.0	**7.0**	6.5	6.5	7.0	**6.7**	**6.9**
32	MACS6837	332	7.0	7.0	7.0	8.0	**7.3**	7.0	7.0	7.5	**7.2**	**7.2**
33	DBW187 (C)	333	6.5	6.5	7.0	6.0	**6.5**	7.0	7.0	7.0	**7.0**	**6.7**
34	AKAW5347	334	5.0	6.5	6.0	5.0	**5.6**	7.0	7.0	5.5	**6.5**	**6.0**
35	PWU20	335	5.0	6.0	5.0	1.5	**4.4**	6.5	7.0	4.0	**5.8**	**5.0**
36	GW548	336	2.5	2.5	2.5	1.0	**2.1**	2.5	2.5	1.0	**2.0**	**2.1**
		Mean	**5.7**	**5.8**	**5.7**	**5.7**	**5.7**	**5.9**	**6.0**	**5.7**	**5.9**	**5.8**

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

S. No.	Entry	Trial Code	NWPZ							NEPZ					Overall Mean
			Pantnagar	Ludhiana	Hisar	Delhi	Durgapura	Karnal	Mean	Kanpur	Varanasi	Samastipur	Sabour	Mean	
1	PBW923	401	5.5	5.5	5.5	5.0	5.5	5.4	**5.4**	6.0	5.0	4.5	5.0	**5.1**	**5.3**
2	SVPWL21-14	402	5.0	5.0	6.0	5.0	5.5	5.6	**5.4**	5.0	5.0	4.5	5.0	**4.9**	**5.2**
3	PBW920	403	5.5	5.5	5.5	5.5	4.5	5.4	**5.3**	5.5	5.0	5.0	5.5	**5.3**	**5.3**
4	NW8071	404	5.5	5.5	5.5	5.5	6.0	6.2	**5.7**	5.5	4.5	5.5	5.5	**5.3**	**5.5**
5	PBW919	405	5.5	5.0	5.0	5.5	5.0	6.2	**5.4**	5.5	4.0	4.5	4.5	**4.6**	**5.1**
6	HD3452	406	5.5	6.0	5.0	6.0	5.5	5.4	**5.6**	5.0	4.5	5.0	5.0	**4.9**	**5.3**
7	NW8055	407	5.0	6.0	5.5	4.5	5.5	5.6	**5.4**	5.5	5.0	5.0	6.0	**5.4**	**5.4**
8	RAJ4581	408	5.5	6.0	6.5	6.0	5.0	5.8	**5.8**	6.0	5.5	5.5	5.5	**5.6**	**5.7**
9	DBW420	409	6.0	5.0	6.0	5.0	5.0	5.4	**5.4**	4.5	5.5	5.5	5.0	**5.1**	**5.3**
10	WH1323	410	6.0	5.5	6.0	5.5	5.5	6.4	**5.8**	5.0	5.5	5.5	5.0	**5.3**	**5.6**
11	HP1980	411	5.5	5.5	6.5	6.5	5.5	6.0	**5.9**	6.0	5.5	5.5	4.5	**5.4**	**5.7**
12	UBW20	412	5.5	5.5	6.0	5.5	5.5	6.2	**5.7**	6.0	4.0	4.5	4.5	**4.8**	**5.3**
13	DBW424	413	6.5	6.0	7.0	6.0	5.5	6.0	**6.2**	6.0	5.5	6.0	5.5	**5.8**	**6.0**
14	BCW30	414	6.0	6.0	7.0	5.5	6.0	5.2	**6.0**	5.5	5.5	6.0	5.0	**5.5**	**5.8**
15	UP3126	415	5.5	5.0	6.5	6.0	5.0	5.6	**5.6**	6.0	5.5	6.0	5.5	**5.8**	**5.7**
16	WH1322	416	5.0	5.5	7.0	6.0	6.0	6.0	**5.9**	6.0	5.5	5.5	5.5	**5.6**	**5.8**
17	DBW423	417	4.5	5.5	6.5	6.0	5.5	6.4	**5.7**	6.0	5.5	6.0	5.0	**5.6**	**5.7**
18	DBW422	418	6.0	6.0	6.5	5.5	6.0	6.4	**6.1**	6.0	5.5	6.0	6.0	**5.9**	**6.0**
19	K2207	419	5.5	5.5	7.0	5.5	5.0	6.2	**5.8**	6.5	5.0	5.5	5.5	**5.6**	**5.7**
20	BRW3941	420	5.0	5.0	6.0	5.5	6.5	5.6	**5.6**	6.0	6.0	5.5	5.5	**5.8**	**5.7**
21	DBW421	421	5.0	5.0	6.0	5.5	6.0	6.0	**5.6**	5.5	5.0	5.5	5.5	**5.4**	**5.5**
22	HD3453	422	6.0	6.0	6.0	6.5	5.5	6.0	**6.0**	6.0	6.0	5.5	5.5	**5.8**	**5.9**
23	JKW303	423	4.5	4.5	5.0	5.5	5.5	5.4	**5.1**	5.5	4.0	5.0	4.5	**4.8**	**4.9**
24	DBW107 (C)	424	5.5	5.5	5.5	5.5	6.5	6.2	**5.8**	5.5	5.0	6.0	5.0	**5.4**	**5.6**
25	HD3454	425	5.5	5.5	5.5	5.5	6.0	5.6	**5.6**	5.5	5.5	5.5	4.5	**5.3**	**5.5**
26	PBW922	426	4.5	5.0	5.5	5.5	5.5	6.0	**5.3**	6.0	5.5	5.5	5.5	**5.6**	**5.5**
27	HD3059 (C)	427	5.5	5.5	6.5	6.0	6.0	5.8	**5.9**	6.5	4.5	5.5	5.0	**5.4**	**5.7**
28	PBW921	428	5.5	5.5	6.0	5.5	5.5	5.8	**5.6**	6.0	5.5	5.5	5.0	**5.5**	**5.6**
29	K2208	429	6.0	6.0	6.0	6.0	6.0	6.0	**6.0**	6.5	6.5	6.0	5.0	**6.0**	**6.0**
30	DBW173 (C)	430	6.0	5.5	6.0	6.0	5.5	6.2	**5.9**	6.0	5.5	5.0	6.0	**5.6**	**5.8**
31	RAJ4580	431	5.5	5.5	5.0	5.5	6.5	5.4	**5.6**	6.5	5.5	4.5	5.5	**5.5**	**5.5**
32	HI1563 (C)	432	4.0	5.0	6.5	6.0	5.5	6.0	**5.5**	6.5	6.0	5.0	5.5	**5.8**	**5.6**
33	WH1324	433	5.0	5.0	6.0	6.0	5.0	6.8	**5.6**	5.5	6.0	5.0	5.0	**5.4**	**5.5**
34	K2206	434	4.5	4.5	6.0	5.5	6.5	5.2	**5.4**	6.0	5.0	5.0	5.0	**5.3**	**5.3**
35	HD3455	435	5.5	4.5	6.0	6.0	6.0	5.6	**5.6**	6.5	5.5	5.0	5.0	**5.5**	**5.6**
36	UP3127	436	5.0	6.0	6.5	5.5	6.5	6.8	**6.1**	6.0	4.5	5.0	5.0	**5.1**	**5.7**
Mean			**5.4**	**5.4**	**6.0**	**5.7**	**5.7**	**5.9**	**5.7**	**5.8**	**5.2**	**5.3**	**5.2**	**5.4**	**5.6**

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	Varanasi	Samastipur	Sabour	Mean	
1	PBW923	401	68.6	74.4	80.7	71.4	80.4	76.9	**75.4**	71.4	73.8	74.6	78.2	**74.5**	**75.0**
2	SVPWL21-14	402	68.1	76.3	78.8	73.4	81.1	78.2	**76.0**	69.6	76.2	74.3	78.5	**74.7**	**75.5**
3	PBW920	403	71.7	78.8	82.6	76.8	77.0	79.9	**77.8**	74.8	76.8	79.9	80.9	**78.1**	**77.9**
4	NW8071	404	66.6	74.4	81.5	73.7	79.6	79.9	**76.0**	71.3	76.3	75.7	79.6	**75.7**	**75.9**
5	PBW919	405	67.9	70.1	79.3	74.3	70.2	79.2	**73.5**	68.4	73.4	72.7	76.8	**72.8**	**73.2**
6	HD3452	406	66.9	74.5	78.8	68.7	74.5	75.3	**73.1**	67.1	73.8	72.6	75.3	**72.2**	**72.8**
7	NW8055	407	65.4	74.0	71.9	69.1	75.0	76.2	**71.9**	70.2	71.0	72.3	76.3	**72.5**	**72.1**
8	RAJ4581	408	64.5	76.3	81.2	73.6	72.0	78.7	**74.4**	70.7	73.9	74.6	79.3	**74.6**	**74.5**
9	DBW420	409	66.6	69.7	79.3	64.1	72.6	73.3	**70.9**	71.2	75.7	72.2	75.1	**73.6**	**72.0**
10	WH1323	410	69.4	75.1	82.0	72.3	74.8	77.2	**75.1**	71.9	76.3	73.9	76.8	**74.7**	**75.0**
11	HP1980	411	69.1	73.1	79.0	72.3	74.9	75.8	**74.0**	70.7	73.3	72.3	77.0	**73.3**	**73.8**
12	UBW20	412	69.5	70.6	80.2	68.9	76.0	77.2	**73.7**	69.9	69.7	77.2	73.7	**72.6**	**73.3**
13	DBW424	413	71.6	77.7	82.7	75.2	78.1	75.7	**76.8**	73.2	77.1	67.2	80.5	**74.5**	**75.9**
14	BCW30	414	68.9	69.9	80.0	72.1	78.6	72.5	**73.7**	69.0	74.6	74.3	77.1	**73.8**	**73.7**
15	UP3126	415	64.7	69.0	79.1	68.4	71.7	72.1	**70.8**	69.7	71.9	70.8	72.9	**71.3**	**71.0**
16	WH1322	416	69.6	72.6	81.4	72.8	78.5	81.0	**76.0**	71.2	74.4	75.9	78.1	**74.9**	**75.6**
17	DBW423	417	61.6	68.0	80.2	73.4	71.7	77.8	**72.1**	69.5	73.7	72.2	75.1	**72.6**	**72.3**
18	DBW422	418	73.9	78.9	82.4	77.9	77.3	83.1	**78.9**	75.2	78.7	79.5	81.2	**78.7**	**78.8**
19	K2207	419	64.7	73.5	77.0	69.1	66.8	73.1	**70.7**	68.7	72.7	70.4	72.0	**71.0**	**70.8**
20	BRW3941	420	70.0	72.9	81.2	71.7	79.7	75.4	**75.2**	75.0	76.7	74.0	78.8	**76.1**	**75.5**
21	DBW421	421	67.2	75.6	81.3	72.8	74.1	76.9	**74.7**	70.2	77.1	75.1	76.4	**74.7**	**74.7**
22	HD3453	422	71.0	73.7	80.6	72.7	73.5	75.8	**74.6**	73.4	74.9	73.2	74.5	**74.0**	**74.3**
23	JKW303	423	61.3	69.2	75.7	71.3	72.3	71.8	**70.3**	68.7	69.9	71.3	69.4	**69.8**	**70.1**
24	DBW107 (C)	424	70.7	74.9	82.7	73.9	77.6	77.1	**76.2**	71.5	76.5	76.2	77.7	**75.5**	**75.9**
25	HD3454	425	69.9	76.2	79.0	72.2	75.0	75.1	**74.6**	70.9	74.2	76.0	74.9	**74.0**	**74.3**
26	PBW922	426	64.2	75.6	81.0	74.9	71.1	79.4	**74.4**	71.9	74.9	77.1	76.6	**75.1**	**74.7**
27	HD3059 (C)	427	67.8	76.0	82.7	74.4	75.4	78.2	**75.8**	72.0	75.9	75.1	75.9	**74.7**	**75.3**
28	PBW921	428	69.5	77.8	81.0	76.3	74.3	77.1	**76.0**	72.8	75.8	75.7	77.2	**75.4**	**75.8**
29	K2208	429	64.1	74.1	80.9	73.6	74.1	75.0	**73.6**	70.8	74.6	73.8	73.8	**73.3**	**73.5**
30	DBW173 (C)	430	70.9	74.5	80.5	72.0	75.3	77.9	**75.2**	72.1	74.8	74.5	74.7	**74.0**	**74.7**
31	RAJ4580	431	65.9	69.2	77.2	66.6	74.3	68.5	**70.3**	67.1	69.1	64.2	72.6	**68.3**	**69.5**
32	HI1563 (C)	432	64.6	73.7	83.0	77.8	76.4	79.5	**75.8**	76.1	77.7	76.9	79.0	**77.4**	**76.5**
33	WH1324	433	67.5	75.2	79.7	73.8	78.2	79.9	**75.7**	68.7	76.2	73.9	74.6	**73.4**	**74.8**
34	K2206	434	70.6	72.1	79.4	72.3	70.8	73.2	**73.1**	69.9	72.8	74.2	73.5	**72.6**	**72.9**
35	HD3455	435	65.0	70.5	79.5	73.2	74.0	77.9	**73.4**	72.0	74.9	75.2	75.7	**74.5**	**73.8**
36	UP3127	436	65.5	74.6	71.4	71.6	74.3	78.7	**72.7**	69.0	71.5	68.9	73.8	**70.8**	**71.9**
Mean			**67.6**	**73.7**	**79.9**	**72.5**	**75.0**	**76.7**	**74.2**	**71.0**	**74.5**	**73.8**	**76.2**	**73.9**	**74.1**

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	Varanasi	Samastipur	Sabour	Mean	
1	PBW923	401	12.7	12.1	11.0	13.8	12.2	12.5	**12.4**	11.4	10.3	11.9	12.3	**11.5**	**12.0**
2	SVPWL21-14	402	10.9	10.3	11.6	13.7	13.0	11.1	**11.8**	11.1	9.5	11.1	10.9	**10.7**	**11.3**
3	PBW920	403	12.6	10.5	12.4	14.5	15.4	12.6	**13.0**	10.9	10.0	14.7	12.2	**12.0**	**12.6**
4	NW8071	404	12.3	11.9	11.5	14.4	16.0	12.0	**13.0**	12.0	10.4	11.6	12.9	**11.7**	**12.5**
5	PBW919	405	12.2	12.0	11.1	13.5	15.1	11.2	**12.5**	11.6	10.0	11.5	12.1	**11.3**	**12.0**
6	HD3452	406	11.1	10.9	11.6	14.3	13.3	12.1	**12.2**	11.5	9.6	11.2	12.3	**11.2**	**11.8**
7	NW8055	407	11.6	10.9	10.1	14.1	15.0	12.7	**12.4**	10.9	10.6	11.0	12.0	**11.1**	**11.9**
8	RAJ4581	408	10.4	11.1	10.4	13.0	14.3	11.7	**11.8**	11.3	9.6	11.3	12.0	**11.1**	**11.5**
9	DBW420	409	12.2	11.6	10.5	13.4	14.1	11.9	**12.3**	10.5	9.1	11.0	12.2	**10.7**	**11.7**
10	WH1323	410	11.7	11.3	11.2	14.1	13.6	12.0	**12.3**	10.2	9.7	10.9	12.5	**10.8**	**11.7**
11	HP1980	411	10.8	10.3	10.3	13.0	13.4	11.2	**11.5**	10.1	9.0	10.7	11.4	**10.3**	**11.0**
12	UBW20	412	10.9	11.4	11.5	13.6	14.1	11.0	**12.1**	11.0	11.0	11.4	12.4	**11.5**	**11.8**
13	DBW424	413	9.8	11.1	11.1	13.0	13.2	12.3	**11.8**	11.1	10.0	12.1	11.3	**11.1**	**11.5**
14	BCW30	414	11.4	11.1	10.8	13.9	14.2	12.9	**12.4**	12.1	9.6	11.7	11.7	**11.3**	**11.9**
15	UP3126	415	10.8	11.7	10.9	12.7	15.4	11.7	**12.2**	10.3	9.6	11.5	12.1	**10.9**	**11.7**
16	WH1322	416	11.0	11.9	11.7	14.8	14.9	11.5	**12.6**	11.3	10.0	11.1	12.6	**11.3**	**12.1**
17	DBW423	417	11.0	12.0	11.5	14.4	14.2	11.8	**12.5**	10.5	9.6	11.7	12.5	**11.1**	**11.9**
18	DBW422	418	12.8	11.0	11.1	13.2	15.3	10.4	**12.3**	10.5	10.1	10.7	11.6	**10.7**	**11.7**
19	K2207	419	11.4	9.7	10.9	13.4	14.0	11.6	**11.8**	11.3	9.6	11.2	12.0	**11.0**	**11.5**
20	BRW3941	420	10.3	11.2	10.9	13.6	14.5	12.0	**12.1**	12.2	9.9	11.4	11.7	**11.3**	**11.8**
21	DBW421	421	12.2	11.1	11.4	14.5	14.6	11.2	**12.5**	12.1	9.9	11.9	12.9	**11.7**	**12.2**
22	HD3453	422	11.6	11.8	10.9	13.6	15.8	12.1	**12.6**	11.7	10.1	11.6	12.0	**11.4**	**12.1**
23	JKW303	423	11.6	11.3	11.7	13.1	15.1	12.0	**12.5**	10.4	10.5	12.2	11.7	**11.2**	**12.0**
24	DBW107 (C)	424	10.8	11.8	10.6	13.5	14.8	12.1	**12.3**	11.3	9.7	10.6	12.2	**11.0**	**11.7**
25	HD3454	425	10.4	10.1	11.9	13.7	14.1	13.0	**12.2**	11.0	10.2	11.1	12.4	**11.2**	**11.8**
26	PBW922	426	11.9	11.6	11.7	13.7	15.6	11.4	**12.6**	12.7	10.8	11.8	13.0	**12.1**	**12.4**
27	HD3059 (C)	427	11.8	11.2	11.1	13.2	14.4	11.5	**12.2**	10.6	10.5	11.4	12.5	**11.3**	**11.8**
28	PBW921	428	10.7	10.9	11.7	13.7	14.9	12.2	**12.4**	11.5	9.6	11.4	11.7	**11.1**	**11.8**
29	K2208	429	11.0	11.2	10.9	13.5	14.4	11.9	**12.1**	11.3	9.6	11.1	11.7	**10.9**	**11.7**
30	DBW173 (C)	430	11.5	11.5	10.9	14.0	16.6	12.0	**12.8**	11.5	10.0	11.9	12.6	**11.5**	**12.3**
31	RAJ4580	431	10.4	10.5	10.6	9.6	12.6	12.1	**11.0**	11.0	10.4	12.3	11.1	**11.2**	**11.1**
32	HI1563 (C)	432	11.9	11.4	11.8	13.2	14.7	11.0	**12.3**	11.1	10.4	11.2	11.2	**11.0**	**11.8**
33	WH1324	433	12.1	11.9	10.8	13.9	15.5	10.6	**12.5**	13.0	9.4	11.1	12.4	**11.5**	**12.1**
34	K2206	434	11.5	12.5	11.4	14.6	14.4	14.1	**13.1**	11.7	11.0	11.6	12.4	**11.7**	**12.5**
35	HD3455	435	11.7	11.1	11.2	14.0	15.0	12.2	**12.5**	11.6	9.6	10.5	12.0	**10.9**	**11.9**
36	UP3127	436	10.7	10.9	12.9	13.1	14.8	11.4	**12.3**	10.9	10.9	12.6	11.7	**11.5**	**12.0**
Mean			**11.4**	**11.2**	**11.2**	**13.6**	**14.5**	**11.9**	**12.3**	**11.3**	**10.0**	**11.5**	**12.1**	**11.2**	**11.9**

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	Varanasi	Samastipur	Sabour	Mean	
1	PBW923	401	62.0	61.0	59.0	65.0	55.0	63.4	**60.9**	60.0	67.0	67.0	50.0	**61.0**	**60.9**
2	SVPWL21-14	402	54.0	47.0	50.0	65.0	57.0	56.9	**55.0**	50.0	63.0	53.0	58.0	**56.0**	**55.4**
3	PBW920	403	36.0	43.0	42.0	49.0	40.0	52.7	**43.8**	40.0	44.0	47.0	44.0	**43.8**	**43.8**
4	NW8071	404	53.0	57.0	60.0	63.0	45.0	59.6	**56.3**	64.0	65.0	60.0	60.0	**62.3**	**58.7**
5	PBW919	405	51.0	46.0	42.0	60.0	44.0	51.9	**49.1**	50.0	44.0	45.0	49.0	**47.0**	**48.3**
6	HD3452	406	63.0	60.0	56.0	70.0	59.0	61.5	**61.6**	62.0	61.0	63.0	61.0	**61.8**	**61.7**
7	NW8055	407	67.0	45.0	45.0	69.0	50.0	60.4	**56.1**	55.0	56.0	59.0	52.0	**55.5**	**55.8**
8	RAJ4581	408	47.0	47.0	45.0	60.0	47.0	53.8	**50.0**	55.0	45.0	57.0	50.0	**51.8**	**50.7**
9	DBW420	409	65.0	53.0	59.0	72.0	65.0	66.5	**63.4**	60.0	62.0	64.0	57.0	**60.8**	**62.4**
10	WH1323	410	51.0	58.0	57.0	72.0	58.0	68.4	**60.7**	65.0	56.0	68.0	64.0	**63.3**	**61.7**
11	HP1980	411	63.0	45.0	46.0	63.0	50.0	48.8	**52.6**	55.0	56.0	63.0	53.0	**56.8**	**54.3**
12	UBW20	412	57.0	52.0	54.0	71.0	60.0	63.1	**59.5**	58.0	58.0	65.0	58.0	**59.8**	**59.6**
13	DBW424	413	59.0	62.0	54.0	69.0	59.0	68.1	**61.8**	65.0	53.0	68.0	65.0	**62.8**	**62.2**
14	BCW30	414	54.0	47.0	54.0	63.0	52.0	65.0	**55.8**	60.0	49.0	62.0	55.0	**56.5**	**56.1**
15	UP3126	415	51.0	54.0	56.0	61.0	65.0	61.1	**58.0**	59.0	50.0	67.0	55.0	**57.8**	**57.9**
16	WH1322	416	58.0	55.0	56.0	66.0	58.0	65.0	**59.7**	61.0	59.0	63.0	60.0	**60.8**	**60.1**
17	DBW423	417	45.0	52.0	58.0	58.0	55.0	59.6	**54.6**	60.0	62.0	64.0	53.0	**59.8**	**56.7**
18	DBW422	418	55.0	50.0	52.0	63.0	58.0	57.3	**55.9**	61.0	60.0	60.0	50.0	**57.8**	**56.6**
19	K2207	419	50.0	41.0	54.0	54.0	55.0	56.9	**51.8**	56.0	55.0	50.0	48.0	**52.3**	**52.0**
20	BRW3941	420	59.0	47.0	48.0	55.0	50.0	60.4	**53.2**	60.0	60.0	58.0	57.0	**58.8**	**55.4**
21	DBW421	421	53.0	47.0	48.0	60.0	50.0	53.1	**51.8**	54.0	52.0	60.0	63.0	**57.3**	**54.0**
22	HD3453	422	60.0	53.0	60.0	61.0	51.0	63.4	**58.1**	60.0	66.0	63.0	55.0	**61.0**	**59.2**
23	JKW303	423	52.0	45.0	42.0	58.0	54.0	52.3	**50.5**	55.0	62.0	59.0	60.0	**59.0**	**53.9**
24	DBW107 (C)	424	48.0	39.0	42.0	55.0	50.0	46.9	**46.8**	49.0	51.0	50.0	45.0	**48.8**	**47.6**
25	HD3454	425	55.0	51.0	50.0	56.0	63.0	61.1	**56.0**	57.0	63.0	65.0	77.0	**65.5**	**59.8**
26	PBW922	426	48.0	49.0	43.0	45.0	52.0	49.2	**47.7**	50.0	49.0	55.0	50.0	**51.0**	**49.0**
27	HD3059 (C)	427	61.0	50.0	56.0	58.0	56.0	66.9	**58.0**	58.0	55.0	54.0	58.0	**56.3**	**57.3**
28	PBW921	428	59.0	56.0	56.0	67.0	55.0	63.4	**59.4**	60.0	56.0	68.0	60.0	**61.0**	**60.0**
29	K2208	429	53.0	56.0	53.0	60.0	55.0	50.0	**54.5**	59.0	52.0	58.0	46.0	**53.8**	**54.2**
30	DBW173 (C)	430	58.0	50.0	50.0	62.0	55.0	63.8	**56.5**	54.0	50.0	60.0	51.0	**53.8**	**55.4**
31	RAJ4580	431	55.0	44.0	54.0	62.0	55.0	54.2	**54.0**	58.0	60.0	63.0	50.0	**57.8**	**55.5**
32	HI1563 (C)	432	40.0	34.0	46.0	49.0	50.0	45.7	**44.1**	44.0	50.0	53.0	41.0	**47.0**	**45.3**
33	WH1324	433	69.0	50.0	56.0	70.0	63.0	60.8	**61.5**	67.0	60.0	70.0	52.0	**62.3**	**61.8**
34	K2206	434	52.0	39.0	43.0	50.0	49.0	51.5	**47.4**	49.0	46.0	50.0	41.0	**46.5**	**47.1**
35	HD3455	435	50.0	47.0	47.0	51.0	50.0	53.8	**49.8**	52.0	49.0	55.0	49.0	**51.3**	**50.4**
36	UP3127	436	60.0	45.0	52.0	56.0	52.0	69.2	**55.7**	53.0	57.0	63.0	50.0	**55.8**	**55.7**
Mean			**54.8**	**49.4**	**51.3**	**60.8**	**53.9**	**58.5**	**54.8**	**56.5**	**55.6**	**59.7**	**54.1**	**56.5**	**55.5**

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

S. No.	Entry	Trial Code	NWPZ							NEPZ					Overall Mean
			Pantnagar	Ludhiana	Hisar	Delhi	Durgapura	Karnal	Mean	Kanpur	Varanasi	Samastipur	Sabour	Mean	
1	PBW923	401	7.0	7.0	6.0	7.0	6.0	5.0	**6.3**	7.0	7.0	7.0	6.0	**6.8**	**6.5**
2	SVPWL21-14	402	8.0	7.0	7.0	7.0	8.0	4.5	**6.9**	7.0	7.0	7.0	7.0	**7.0**	**7.0**
3	PBW920	403	7.0	7.0	7.0	7.0	8.0	5.0	**6.8**	8.0	7.0	7.0	7.0	**7.3**	**7.0**
4	NW8071	404	7.0	8.0	7.0	7.0	8.0	5.5	**7.1**	8.0	7.0	7.0	7.0	**7.3**	**7.2**
5	PBW919	405	7.0	7.0	6.0	6.0	7.0	5.5	**6.4**	7.0	6.0	7.0	7.0	**6.8**	**6.6**
6	HD3452	406	8.0	7.0	7.0	8.0	7.0	5.5	**7.1**	8.0	8.0	7.0	8.0	**7.8**	**7.4**
7	NW8055	407	6.0	6.0	6.0	6.0	6.0	5.0	**5.8**	6.0	6.0	7.0	7.0	**6.5**	**6.1**
8	RAJ4581	408	8.0	7.0	7.0	7.0	8.0	5.0	**7.0**	7.0	7.0	8.0	7.0	**7.3**	**7.1**
9	DBW420	409	7.0	7.0	7.0	7.0	7.0	5.5	**6.8**	7.0	7.0	8.0	8.0	**7.5**	**7.1**
10	WH1323	410	7.0	8.0	7.0	8.0	7.0	6.0	**7.2**	7.0	7.0	7.0	8.0	**7.3**	**7.2**
11	HP1980	411	7.0	7.0	7.0	8.0	7.0	4.5	**6.8**	8.0	7.0	8.0	7.0	**7.5**	**7.1**
12	UBW20	412	7.0	7.0	7.0	7.0	7.0	6.0	**6.8**	7.0	7.0	8.0	7.0	**7.3**	**7.0**
13	DBW424	413	7.0	6.0	7.0	6.0	6.0	5.0	**6.2**	7.0	6.0	7.0	7.0	**6.8**	**6.4**
14	BCW30	414	4.0	3.0	4.0	3.0	4.0	3.0	**3.5**	4.0	3.0	4.0	4.0	**3.8**	**3.6**
15	UP3126	415	7.0	8.0	7.0	7.0	7.0	5.5	**6.9**	7.0	7.0	8.0	7.0	**7.3**	**7.1**
16	WH1322	416	8.0	7.0	8.0	8.0	7.0	5.0	**7.2**	7.0	7.0	7.0	7.0	**7.0**	**7.1**
17	DBW423	417	8.0	8.0	7.0	7.0	7.0	5.0	**7.0**	7.0	7.0	8.0	7.0	**7.3**	**7.1**
18	DBW422	418	8.0	7.0	7.0	7.0	8.0	6.0	**7.2**	8.0	7.0	7.0	8.0	**7.5**	**7.3**
19	K2207	419	8.0	7.0	7.0	8.0	7.0	6.5	**7.3**	8.0	8.0	8.0	8.0	**8.0**	**7.6**
20	BRW3941	420	7.0	7.0	7.0	8.0	7.0	6.0	**7.0**	8.0	7.0	8.0	8.0	**7.8**	**7.3**
21	DBW421	421	8.0	8.0	7.0	8.0	7.0	5.5	**7.3**	8.0	7.0	8.0	8.0	**7.8**	**7.5**
22	HD3453	422	7.0	6.0	6.0	6.0	7.0	4.5	**6.1**	7.0	6.0	7.0	7.0	**6.8**	**6.4**
23	JKW303	423	8.0	7.0	7.0	7.0	8.0	5.0	**7.0**	7.0	7.0	8.0	8.0	**7.5**	**7.2**
24	DBW107 (C)	424	8.0	7.0	7.0	7.0	8.0	5.0	**7.0**	8.0	7.0	8.0	7.0	**7.5**	**7.2**
25	HD3454	425	8.0	7.0	7.0	7.0	8.0	5.0	**7.0**	7.0	7.0	7.0	7.0	**7.0**	**7.0**
26	PBW922	426	8.0	8.0	7.0	8.0	8.0	5.5	**7.4**	8.0	8.0	7.0	7.0	**7.5**	**7.5**
27	HD3059 (C)	427	8.0	7.0	8.0	8.0	7.0	5.5	**7.3**	7.0	7.0	8.0	7.0	**7.3**	**7.3**
28	PBW921	428	8.0	7.0	7.0	8.0	7.0	5.5	**7.1**	8.0	8.0	7.0	7.0	**7.5**	**7.3**
29	K2208	429	5.0	4.0	4.0	4.0	4.0	4.0	**4.2**	5.0	4.0	4.0	5.0	**4.5**	**4.3**
30	DBW173 (C)	430	8.0	8.0	7.0	8.0	7.0	6.0	**7.3**	7.0	7.0	8.0	7.0	**7.3**	**7.3**
31	RAJ4580	431	5.0	5.0	4.0	4.0	4.0	3.5	**4.3**	5.0	5.0	4.0	5.0	**4.8**	**4.5**
32	HI1563 (C)	432	5.0	5.0	4.0	4.0	5.0	4.0	**4.5**	5.0	4.0	5.0	5.0	**4.8**	**4.6**
33	WH1324	433	8.0	8.0	8.0	8.0	7.0	6.0	**7.5**	7.0	7.0	8.0	8.0	**7.5**	**7.5**
34	K2206	434	8.0	8.0	7.0	8.0	7.0	5.0	**7.2**	8.0	7.0	8.0	8.0	**7.8**	**7.4**
35	HD3455	435	5.0	5.0	5.0	5.0	6.0	4.0	**5.0**	6.0	5.0	6.0	6.0	**5.8**	**5.3**
36	UP3127	436	5.0	4.0	4.0	4.0	5.0	4.0	**4.3**	6.0	5.0	6.0	6.0	**5.8**	**4.9**
Mean			**7.1**	**6.7**	**6.5**	**6.8**	**6.8**	**5.1**	**6.5**	**7.0**	**6.6**	**7.1**	**6.9**	**6.9**	**6.6**

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

S. No	Entries	Code	CZ					PZ				Overall Mean
			Indore	Vijapur	P'kheda	Junagarh	Mean	Dharwad	Niphad	Pune	Mean	
1.	HD2864 (C)	501	6.0	6.5	6.0	5.0	**5.9**	6.5	6.5	5.5	**6.2**	**6.0**
2.	NIAW4432	502	5.5	6.0	5.5	6.0	**5.8**	5.5	5.5	7.0	**6.0**	**5.9**
3.	HD3456	503	5.0	7.0	5.5	7.0	**6.1**	7.0	5.5	6.5	**6.3**	**6.2**
4.	MACS6829	504	7.5	6.0	5.5	7.0	**6.5**	7.5	7.0	7.0	**7.2**	**6.8**
5.	HI1686	505	5.5	7.5	7.0	5.0	**6.3**	6.5	6.0	7.0	**6.5**	**6.4**
6.	MP3568	506	6.5	5.5	5.5	6.5	**6.0**	6.0	6.0	6.0	**6.0**	**6.0**
7.	LOK81	507	7.0	6.5	6.5	6.0	**6.5**	6.5	5.5	6.5	**6.2**	**6.4**
8.	MACS6830	508	6.5	7.5	8.0	6.0	**7.0**	6.5	7.5	7.0	**7.0**	**7.0**
9.	HD2932 (C)	509	6.0	6.5	6.5	6.0	**6.3**	7.5	5.0	7.5	**6.7**	**6.4**
10.	HI1685	510	6.0	7.0	5.5	7.0	**6.4**	6.0	5.5	6.0	**5.8**	**6.1**
11.	UAS3027	511	5.5	6.0	5.5	5.0	**5.5**	5.3	5.0	6.0	**5.4**	**5.5**
12.	GW551	512	7.0	7.5	6.0	8.0	**7.1**	6.0	6.0	6.0	**6.0**	**6.6**
13.	PBW924	513	7.0	7.5	7.0	8.0	**7.4**	7.5	6.5	7.0	**7.0**	**7.2**
14.	GW558	514	6.0	7.0	6.5	6.0	**6.4**	7.3	6.5	6.0	**6.6**	**6.5**
15.	DBW426	515	5.5	6.0	6.0	6.0	**5.9**	7.5	6.0	6.0	**6.5**	**6.1**
16.	NIAW4300	516	4.0	5.0	4.5	4.5	**4.5**	4.0	4.0	4.5	**4.2**	**4.4**
17.	WH1325	517	5.5	5.0	4.0	5.0	**4.9**	6.0	6.5	5.5	**6.0**	**5.4**
18.	MP3575	518	7.0	6.0	7.0	6.0	**6.5**	6.5	5.0	5.5	**5.7**	**6.1**
19.	GW556	519	5.0	5.5	8.0	5.5	**6.0**	6.0	6.0	5.0	**5.7**	**5.9**
20.	UAS3028	520	7.0	6.0	6.5	5.5	**6.3**	6.0	7.0	6.0	**6.3**	**6.3**
21.	WSM138	521	7.0	7.0	6.5	8.0	**7.1**	6.5	6.5	7.5	**6.8**	**7.0**
22.	HI1687	522	7.5	6.0	7.0	7.5	**7.0**	5.5	6.5	6.5	**6.2**	**6.6**
23.	CG1046	523	6.0	8.0	6.5	6.5	**6.8**	7.0	7.0	8.0	**7.3**	**7.0**
24.	DBW425	524	6.5	6.0	6.0	6.5	**6.3**	6.0	6.0	6.0	**6.0**	**6.1**
25.	MP1394	525	7.0	5.5	6.0	6.0	**6.1**	6.0	6.0	6.5	**6.2**	**6.1**
		Mean	**6.2**	**6.4**	**6.2**	**6.2**	**6.3**	**6.3**	**6.0**	**6.3**	**6.2**	**6.2**

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

S. No	Entries	Code	CZ					PZ				Overall Mean
			Indore	Vijapur	P'kheda	Junagarh	Mean	Dharwad	Niphad	Pune	Mean	
1.	HD2864 (C)	501	80.7	81.3	77.4	78.7	**79.5**	81.0	77.4	81.2	**79.9**	**79.7**
2.	NIAW4432	502	77.6	73.0	71.9	74.4	**74.2**	76.1	72.5	78.1	**75.6**	**74.8**
3.	HD3456	503	80.4	79.0	75.1	77.4	**78.0**	80.2	74.5	80.5	**78.4**	**78.2**
4.	MACS6829	504	79.3	74.5	72.9	76.3	**75.7**	79.1	73.4	78.6	**77.0**	**76.3**
5.	HI1686	505	80.9	79.8	78.4	78.9	**79.5**	81.2	77.6	79.9	**79.6**	**79.5**
6.	MP3568	506	79.2	78.3	74.1	76.2	**76.9**	78.1	75.0	79.1	**77.4**	**77.1**
7.	LOK81	507	79.9	77.1	77.9	77.7	**78.1**	80.3	74.0	79.6	**78.0**	**78.1**
8.	MACS6830	508	79.0	77.0	74.1	75.5	**76.4**	79.2	74.3	79.7	**77.7**	**76.9**
9.	HD2932 (C)	509	77.9	77.3	75.3	76.9	**76.8**	79.2	71.4	79.2	**76.6**	**76.7**
10.	HI1685	510	80.3	78.4	76.9	76.9	**78.1**	78.1	76.3	79.1	**77.9**	**78.0**
11.	UAS3027	511	77.1	74.4	72.6	73.4	**74.4**	77.4	73.0	77.1	**75.8**	**75.0**
12.	GW551	512	81.7	78.6	78.4	79.1	**79.4**	79.2	77.8	80.1	**79.0**	**79.3**
13.	PBW924	513	76.9	75.1	73.9	74.8	**75.2**	77.0	71.7	74.9	**74.6**	**74.9**
14.	GW558	514	79.1	78.7	76.2	77.9	**78.0**	80.4	76.0	79.8	**78.8**	**78.3**
15.	DBW426	515	78.6	76.1	73.2	75.2	**75.8**	78.8	74.4	78.8	**77.4**	**76.4**
16.	NIAW4300	516	75.4	74.7	71.0	73.5	**73.7**	75.8	71.3	73.1	**73.4**	**73.5**
17.	WH1325	517	74.7	75.4	69.0	73.8	**73.2**	77.8	73.1	78.5	**76.5**	**74.6**
18.	MP3575	518	78.4	77.9	72.0	76.0	**76.1**	79.9	72.6	77.6	**76.7**	**76.4**
19.	GW556	519	80.9	79.1	76.8	77.6	**78.6**	79.7	76.6	78.9	**78.4**	**78.5**
20.	UAS3028	520	79.0	75.6	75.4	75.8	**76.4**	79.8	74.1	78.3	**77.4**	**76.8**
21.	WSM138	521	79.8	79.3	78.6	77.9	**78.9**	79.9	76.9	80.2	**79.0**	**78.9**
22.	HI1687	522	79.2	76.3	76.4	77.8	**77.4**	78.7	76.1	78.7	**77.9**	**77.6**
23.	CG1046	523	79.7	77.8	76.8	77.6	**78.0**	80.3	75.6	77.5	**77.8**	**77.9**
24.	DBW425	524	78.5	76.7	74.9	76.8	**76.7**	79.8	73.4	79.5	**77.5**	**77.1**
25.	MP1394	525	77.3	73.7	74.1	75.5	**75.1**	76.9	74.9	74.0	**75.3**	**75.2**
		Mean	**78.8**	**77.0**	**74.9**	**76.5**	**76.8**	**78.9**	**74.6**	**78.5**	**77.3**	**77.0**

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

S. No	Entries	Code	CZ					PZ				Overall Mean
			Indore	Vijapur	P'kheda	Junagarh	Mean	Dharwad	Niphad	Pune	Mean	
1.	HD2864 (C)	501	9.8	12.0	10.5	12.4	**11.2**	11.3	10.0	10.2	**10.5**	**10.9**
2.	NIAW4432	502	10.8	11.7	12.6	12.5	**11.9**	10.8	11.1	11.2	**11.0**	**11.5**
3.	HD3456	503	11.2	12.0	12.9	11.8	**12.0**	10.8	10.8	12.1	**11.2**	**11.7**
4.	MACS6829	504	11.5	11.5	12.4	12.3	**11.9**	10.1	11.0	12.2	**11.1**	**11.6**
5.	HI1686	505	10.2	11.0	11.0	12.1	**11.1**	12.5	10.2	10.6	**11.1**	**11.1**
6.	MP3568	506	10.0	12.1	12.4	12.3	**11.7**	11.0	10.7	12.0	**11.2**	**11.5**
7.	LOK81	507	11.3	12.3	11.9	12.2	**11.9**	11.2	12.4	12.4	**12.0**	**12.0**
8.	MACS6830	508	11.2	11.9	12.1	13.0	**12.0**	12.2	12.5	11.7	**12.1**	**12.1**
9.	HD2932 (C)	509	11.3	12.1	11.2	12.4	**11.7**	12.5	12.5	11.1	**12.0**	**11.9**
10.	HI1685	510	11.2	11.9	11.2	12.1	**11.6**	12.1	11.2	12.0	**11.8**	**11.7**
11.	UAS3027	511	10.6	12.2	12.8	11.2	**11.7**	12.8	11.3	10.4	**11.5**	**11.6**
12.	GW551	512	12.0	12.7	12.1	12.4	**12.3**	10.9	12.5	11.8	**11.7**	**12.1**
13.	PBW924	513	11.2	12.5	11.5	11.7	**11.7**	11.8	12.5	12.8	**12.4**	**12.0**
14.	GW558	514	11.0	11.9	12.3	12.4	**11.9**	11.4	11.1	9.9	**10.8**	**11.4**
15.	DBW426	515	11.3	11.9	11.1	12.1	**11.6**	11.6	11.4	12.0	**11.6**	**11.6**
16.	NIAW4300	516	9.8	10.1	8.8	10.6	**9.8**	8.8	9.0	8.3	**8.7**	**9.3**
17.	WH1325	517	10.6	11.6	11.6	12.3	**11.5**	11.0	11.0	11.0	**11.0**	**11.3**
18.	MP3575	518	11.3	12.8	11.6	12.2	**12.0**	12.9	11.0	10.8	**11.6**	**11.8**
19.	GW556	519	11.9	11.1	11.6	12.2	**11.7**	10.7	11.6	12.0	**11.4**	**11.6**
20.	UAS3028	520	11.9	12.6	9.8	11.9	**11.6**	12.3	10.3	12.1	**11.6**	**11.6**
21.	WSM138	521	11.9	12.5	9.8	12.9	**11.8**	12.1	11.2	10.0	**11.1**	**11.5**
22.	HI1687	522	11.8	12.2	12.0	11.0	**11.8**	12.1	11.8	11.9	**11.9**	**11.8**
23.	CG1046	523	10.8	11.9	10.6	10.3	**10.9**	12.1	12.0	12.1	**12.1**	**11.4**
24.	DBW425	524	12.8	12.7	12.0	12.3	**12.5**	12.4	11.8	11.8	**12.0**	**12.2**
25.	MP1394	525	11.8	12.8	11.9	12.3	**12.2**	10.9	11.1	12.2	**11.4**	**11.8**
		Mean	**11.2**	**12.0**	**11.5**	**12.0**	**11.7**	**11.5**	**11.3**	**11.4**	**11.4**	**11.5**

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

S. No	Entries	Code	CZ					PZ				Overall Mean
			Indore	Vijapur	P'kheda	Junagarh	Mean	Dharwad	Niphad	Pune	Mean	
1.	HD2864 (C)	501	51.0	51.0	49.0	48.0	**49.8**	39.0	43.0	46.0	**42.7**	**46.7**
2.	NIAW4432	502	50.0	54.5	45.0	42.0	**47.9**	39.0	51.0	55.5	**48.5**	**48.1**
3.	HD3456	503	52.0	54.0	42.5	46.0	**48.6**	36.0	47.5	45.5	**43.0**	**46.2**
4.	MACS6829	504	51.5	55.0	47.5	40.0	**48.5**	35.5	43.5	43.5	**40.8**	**45.2**
5.	HI1686	505	58.5	50.0	48.5	42.0	**49.8**	42.5	45.0	40.0	**42.5**	**46.6**
6.	MP3568	506	50.0	56.0	50.0	47.0	**50.8**	53.0	56.0	47.0	**52.0**	**51.3**
7.	LOK81	507	44.5	48.5	43.5	44.5	**45.3**	45.5	45.0	44.5	**45.0**	**45.1**
8.	MACS6830	508	45.0	56.0	48.0	47.5	**49.1**	44.0	51.0	49.5	**48.2**	**48.7**
9.	HD2932 (C)	509	46.5	59.0	44.5	49.0	**49.8**	47.0	52.0	45.0	**48.0**	**49.0**
10.	HI1685	510	46.0	54.5	47.5	51.5	**49.9**	47.0	51.0	47.5	**48.5**	**49.3**
11.	UAS3027	511	44.5	55.0	53.5	47.5	**50.1**	52.5	53.5	44.5	**50.2**	**50.1**
12.	GW551	512	41.0	47.5	48.5	53.5	**47.6**	43.5	50.0	41.5	**45.0**	**46.5**
13.	PBW924	513	53.0	65.5	52.0	54.5	**56.3**	46.5	51.0	43.0	**46.8**	**52.2**
14.	GW558	514	46.0	53.0	54.5	48.0	**50.4**	42.5	55.0	57.5	**51.7**	**50.9**
15.	DBW426	515	47.5	53.5	52.0	45.5	**49.6**	49.5	54.5	58.5	**54.2**	**51.6**
16.	NIAW4300	516	45.5	51.5	44.0	42.5	**45.9**	48.0	57.0	42.0	**49.0**	**47.2**
17.	WH1325	517	49.0	55.0	61.0	55.0	**55.0**	52.0	51.5	49.0	**50.8**	**53.2**
18.	MP3575	518	42.5	48.5	49.0	41.0	**45.3**	39.5	47.0	48.5	**45.0**	**45.1**
19.	GW556	519	47.5	49.0	59.0	46.0	**50.4**	51.5	52.5	47.5	**50.5**	**50.4**
20.	UAS3028	520	49.0	50.0	53.0	48.0	**50.0**	48.5	54.5	55.0	**52.7**	**51.1**
21.	WSM138	521	46.0	45.5	50.0	46.0	**46.9**	47.0	53.5	53.5	**51.3**	**48.8**
22.	HI1687	522	46.5	59.0	52.0	54.5	**53.0**	43.5	50.0	54.0	**49.2**	**51.4**
23.	CG1046	523	50.0	51.0	54.5	51.0	**51.6**	32.0	51.0	46.0	**43.0**	**47.9**
24.	DBW425	524	45.5	55.0	55.5	45.0	**50.3**	56.0	57.0	46.5	**53.2**	**51.5**
25.	MP1394	525	47.5	48.0	58.5	50.5	**51.1**	48.0	52.0	45.0	**48.3**	**49.9**
		Mean	**47.8**	**53.0**	**50.5**	**47.4**	**49.7**	**45.2**	**51.0**	**47.8**	**48.0**	**49.0**

Table 25: Phenol test of *T. aestivum* genotypes in NIVT -3B

S. No	Entries	Code	CZ					PZ				Overall Mean
			Indore	Vijapur	P'kheda	Junagarh	Mean	Dharwad	Niphad	Pune	Mean	
1.	HD2864 (C)	501	6.5	8.0	9.0	8.0	**7.9**	9.0	6.5	7.0	**7.5**	**7.7**
2.	NIAW4432	502	4.0	5.0	5.0	5.5	**4.9**	4.5	5.0	3.5	**4.3**	**4.6**
3.	HD3456	503	3.5	5.5	5.5	6.5	**5.3**	4.5	5.5	4.0	**4.7**	**5.0**
4.	MACS6829	504	6.0	7.5	6.5	8.0	**7.0**	6.0	6.0	7.0	**6.3**	**6.7**
5.	HI1686	505	4.0	6.5	5.0	7.0	**5.6**	5.5	6.5	5.0	**5.7**	**5.6**
6.	MP3568	506	3.5	5.0	4.5	5.5	**4.6**	6.0	5.5	4.0	**5.2**	**4.9**
7.	LOK81	507	5.5	6.0	6.0	7.5	**6.3**	6.5	7.0	5.0	**6.2**	**6.2**
8.	MACS6830	508	6.5	9.0	8.0	7.5	**7.8**	6.5	6.5	8.0	**7.0**	**7.4**
9.	HD2932 (C)	509	6.5	7.0	8.0	7.5	**7.3**	7.0	6.5	6.5	**6.7**	**7.0**
10.	HI1685	510	4.5	5.0	4.5	6.0	**5.0**	4.5	5.0	3.0	**4.2**	**4.6**
11.	UAS3027	511	6.0	8.5	7.5	8.5	**7.6**	8.0	6.0	6.5	**6.8**	**7.3**
12.	GW551	512	6.0	8.5	5.5	8.0	**7.0**	6.0	8.0	6.0	**6.7**	**6.9**
13.	PBW924	513	3.5	7.0	6.0	6.5	**5.8**	6.0	5.5	4.0	**5.2**	**5.5**
14.	GW558	514	5.0	7.0	4.5	7.0	**5.9**	5.5	6.0	5.0	**5.5**	**5.7**
15.	DBW426	515	5.5	6.5	8.0	9.0	**7.3**	6.0	5.0	5.5	**5.5**	**6.5**
16.	NIAW4300	516	4.0	6.5	5.0	7.0	**5.6**	3.5	5.0	4.5	**4.3**	**5.1**
17.	WH1325	517	4.0	4.5	3.5	5.0	**4.3**	4.5	4.5	3.0	**4.0**	**4.1**
18.	MP3575	518	4.5	7.5	4.5	6.0	**5.6**	5.0	4.5	5.0	**4.8**	**5.3**
19.	GW556	519	4.5	7.5	5.5	6.5	**6.0**	5.5	4.5	6.0	**5.3**	**5.7**
20.	UAS3028	520	4.5	6.0	5.0	5.5	**5.3**	6.0	5.0	3.5	**4.8**	**5.1**
21.	WSM138	521	4.5	6.0	5.0	5.5	**5.3**	4.5	5.5	3.5	**4.5**	**4.9**
22.	HI1687	522	5.5	6.5	6.0	8.0	**6.5**	7.0	5.5	5.5	**6.0**	**6.3**
23.	CG1046	523	5.5	7.5	5.5	8.0	**6.6**	6.0	8.0	6.0	**6.7**	**6.6**
24.	DBW425	524	6.0	7.0	5.5	8.0	**6.6**	6.5	7.0	5.0	**6.2**	**6.4**
25.	MP1394	525	4.0	4.5	5.0	4.5	**4.5**	4.0	5.5	3.0	**4.2**	**4.4**
		Mean	**4.9**	**6.6**	**5.8**	**6.9**	**6.1**	**5.8**	**5.8**	**5.0**	**5.5**	**5.8**

Table 26: Grain appearance score (out of 10) of *T. durum* genotypes in NIVT -4

S. No.	Entries	Code	CZ					PZ				Overall Mean
			P'kheda	Indore	Junagarh	Vijapur	Mean	Pune	Dharwad	Niphad	Mean	
1.	HI8850	601	6.0	6.0	5.0	5.0	**5.5**	6.0	5.0	6.0	**5.7**	**5.6**
2.	MPO1396	602	5.0	6.0	5.0	5.0	**5.3**	5.0	5.0	5.0	**5.0**	**5.1**
3.	PWU24	603	6.0	7.0	5.0	6.0	**6.0**	6.0	4.0	6.0	**5.3**	**5.7**
4.	GW1367	604	8.0	8.0	8.0	8.0	**8.0**	7.0	8.0	8.0	**7.7**	**7.9**
5.	DDW63	605	7.0	5.0	6.0	5.0	**5.8**	7.0	7.0	6.0	**6.7**	**6.1**
6.	MACS4135	606	5.0	6.0	6.0	5.0	**5.5**	6.0	5.0	6.0	**5.7**	**5.6**
7.	HI8849	607	5.0	5.0	5.0	5.0	**5.0**	5.0	4.0	5.0	**4.7**	**4.9**
8.	DDW62	608	5.0	6.0	6.0	6.0	**5.8**	6.0	5.0	5.0	**5.3**	**5.6**
9.	MACS4125	609	6.0	7.0	7.0	7.0	**6.8**	7.0	5.0	6.0	**6.0**	**6.4**
10.	PDW364	610	4.0	5.0	4.0	4.0	**4.3**	5.0	5.0	6.0	**5.3**	**4.7**
11.	HI8737 (C)	611	7.0	7.0	6.0	6.0	**6.5**	6.0	6.0	7.0	**6.3**	**6.4**
12.	NIDW1499	612	5.0	6.0	6.0	4.0	**5.3**	5.0	6.0	6.0	**5.7**	**5.4**
13.	MACS3949 (C)	613	6.0	6.0	7.0	5.0	**6.0**	7.0	5.0	7.0	**6.3**	**6.1**
14.	UAS483	614	6.0	6.0	6.0	5.0	**5.8**	5.0	5.0	6.0	**5.3**	**5.6**
15.	NIDW1520	615	5.0	5.0	4.0	4.0	**4.5**	7.0	6.0	7.0	**6.7**	**5.4**
16.	UAS482	616	5.0	4.0	4.0	5.0	**4.5**	5.0	6.0	5.0	**5.3**	**4.9**
17.	GW1365	617	6.0	6.0	6.0	7.0	**6.3**	5.0	5.0	5.0	**5.0**	**5.7**
18.	GW1366	618	4.0	5.0	4.0	5.0	**4.5**	5.0	4.0	7.0	**5.3**	**4.9**
19.	PDW365	619	5.0	6.0	5.0	4.0	**5.0**	4.0	6.0	7.0	**5.7**	**5.3**
20.	MPO1395	620	7.0	7.0	6.0	6.0	**6.5**	7.0	7.0	7.0	**7.0**	**6.7**
21.	WHD968	621	5.0	5.0	5.0	5.0	**5.0**	6.0	5.0	5.0	**5.3**	**5.1**
22.	HI8848	622	6.0	6.0	6.0	5.0	**5.8**	6.0	6.0	5.0	**5.7**	**5.7**
23.	AKDW5516	623	6.0	7.0	7.0	5.0	**6.3**	5.0	5.0	6.0	**5.3**	**5.9**
24.	NIDW1534	624	4.0	5.0	5.0	5.0	**4.8**	5.0	5.0	5.0	**5.0**	**4.9**
25.	HI8713 (C)	625	4.0	6.0	5.0	5.0	**5.0**	5.0	5.0	5.0	**5.0**	**5.0**
		Mean	**5.5**	**5.9**	**5.6**	**5.3**	**5.6**	**5.7**	**5.4**	**6.0**	**5.7**	**5.6**

Table 27: Hectoliter weight (kg/hl.) of *T. durum* genotypes in NIVT -4

S. No.	Entries	Code	CZ					PZ				Overall Mean
			P'kheda	Indore	Junagarh	Vijapur	Mean	Pune	Dharwad	Niphad	Mean	
1.	HI8850	601	81.0	81.2	79.5	79.4	**80.3**	80.7	80.8	76.2	**79.2**	**79.8**
2.	MPO1396	602	79.3	79.0	78.1	77.4	**78.4**	79.3	81.0	79.3	**79.8**	**79.0**
3.	PWU24	603	77.4	80.2	78.0	77.3	**78.2**	75.2	80.7	78.9	**78.2**	**78.2**
4.	GW1367	604	79.5	80.3	79.6	79.6	**79.7**	79.5	81.2	81.8	**80.8**	**80.2**
5.	DDW63	605	78.7	78.6	78.7	78.5	**78.6**	80.2	80.2	80.8	**80.4**	**79.4**
6.	MACS4135	606	78.8	79.9	80.3	80.0	**79.7**	75.0	80.4	75.6	**77.0**	**78.5**
7.	HI8849	607	78.9	78.7	78.5	78.2	**78.6**	76.0	81.8	71.1	**76.3**	**77.6**
8.	DDW62	608	78.4	79.3	76.8	79.6	**78.5**	76.0	82.0	76.6	**78.2**	**78.4**
9.	MACS4125	609	78.5	77.9	76.8	77.8	**77.7**	77.3	81.1	76.5	**78.3**	**78.0**
10.	PDW364	610	75.8	78.9	78.6	70.7	**76.0**	81.0	80.6	77.7	**79.8**	**77.6**
11.	HI8737 (C)	611	80.0	80.4	78.4	79.7	**79.6**	79.4	81.2	78.7	**79.7**	**79.7**
12.	NIDW1499	612	74.9	77.6	77.2	76.9	**76.6**	77.1	79.7	71.9	**76.2**	**76.5**
13.	MACS3949 (C)	613	78.7	80.3	79.4	79.2	**79.4**	81.6	81.9	78.2	**80.5**	**79.9**
14.	UAS483	614	77.5	78.2	76.7	76.6	**77.2**	76.6	80.0	74.7	**77.1**	**77.2**
15.	NIDW1520	615	77.0	78.2	76.7	74.0	**76.5**	77.7	81.5	79.7	**79.6**	**77.8**
16.	UAS482	616	77.3	77.9	77.9	75.6	**77.1**	80.8	81.7	81.7	**81.4**	**79.0**
17.	GW1365	617	76.8	79.5	79.4	79.2	**78.7**	81.4	81.1	78.5	**80.3**	**79.4**
18.	GW1366	618	75.4	75.8	77.2	76.4	**76.2**	80.1	76.8	75.8	**77.5**	**76.8**
19.	PDW365	619	77.5	80.9	78.0	72.7	**77.3**	78.0	82.6	77.2	**79.2**	**78.1**
20.	MPO1395	620	77.1	78.1	78.4	78.1	**77.9**	79.6	79.8	76.1	**78.5**	**78.1**
21.	WHD968	621	76.9	76.4	77.0	76.1	**76.6**	79.7	80.3	76.4	**78.8**	**77.5**
22.	HI8848	622	78.7	81.2	78.0	79.6	**79.4**	80.8	82.7	78.9	**80.8**	**80.0**
23.	AKDW5516	623	77.5	78.5	80.1	75.9	**78.0**	80.2	79.3	78.0	**79.1**	**78.5**
24.	NIDW1534	624	77.6	76.2	79.0	77.2	**77.5**	80.7	81.1	76.3	**79.4**	**78.3**
25.	HI8713 (C)	625	78.4	79.1	78.8	75.2	**77.9**	80.2	82.0	78.6	**80.2**	**78.9**
		Mean	**77.9**	**78.9**	**78.3**	**77.2**	**78.1**	**78.9**	**80.9**	**77.4**	**79.1**	**78.5**

Table 18: Protein content (%) at 12% moisture basis of *T. durum* genotypes in NIVT -4

S. No.	Entries	Code	CZ					PZ				Overall Mean
			P'kheda	Indore	Junagarh	Vijapur	Mean	Pune	Dharwad	Niphad	Mean	
1.	HI8850	601	10.3	12.2	12.5	12.4	**11.9**	11.3	10.7	11.4	**11.1**	**11.5**
2.	MPO1396	602	12.5	12.8	12.3	12.2	**12.4**	11.4	10.1	11.8	**11.1**	**11.9**
3.	PWU24	603	12.1	13.2	12.5	12.3	**12.5**	11.6	9.4	11.6	**10.9**	**11.8**
4.	GW1367	604	13.0	13.9	13.1	13.2	**13.3**	12.9	11.3	13.0	**12.4**	**12.9**
5.	DDW63	605	11.8	12.8	12.5	12.2	**12.3**	12.3	10.3	12.0	**11.5**	**12.0**
6.	MACS4135	606	10.0	11.4	12.7	11.2	**11.4**	11.3	9.5	12.6	**11.1**	**11.3**
7.	HI8849	607	10.4	12.3	12.2	12.3	**11.8**	10.8	9.7	11.4	**10.7**	**11.3**
8.	DDW62	608	11.7	12.8	12.3	12.2	**12.2**	11.7	10.4	12.1	**11.4**	**11.9**
9.	MACS4125	609	12.0	13.1	12.0	11.8	**12.2**	11.5	9.8	11.6	**11.0**	**11.7**
10.	PDW364	610	12.6	13.7	14.6	15.3	**14.0**	11.4	11.7	10.3	**11.1**	**12.8**
11.	HI8737 (C)	611	10.3	12.5	12.1	11.8	**11.6**	11.6	10.2	12.2	**11.3**	**11.5**
12.	NIDW1499	612	13.1	12.9	13.1	11.8	**12.7**	11.7	10.6	12.6	**11.7**	**12.3**
13.	MACS3949 (C)	613	12.1	12.3	12.0	11.5	**12.0**	11.6	10.1	12.6	**11.4**	**11.8**
14.	UAS483	614	12.4	12.4	13.1	12.2	**12.5**	12.6	9.9	13.1	**11.9**	**12.2**
15.	NIDW1520	615	13.2	13.0	12.9	13.3	**13.1**	11.4	10.3	11.4	**11.0**	**12.2**
16.	UAS482	616	11.7	14.0	13.2	12.6	**12.9**	12.2	10.5	12.7	**11.8**	**12.4**
17.	GW1365	617	13.1	11.9	12.4	12.0	**12.4**	11.9	9.9	12.7	**11.5**	**12.0**
18.	GW1366	618	11.5	13.3	12.0	11.1	**11.9**	11.4	10.0	12.2	**11.2**	**11.6**
19.	PDW365	619	13.4	13.6	14.0	14.5	**13.9**	11.6	10.9	11.2	**11.3**	**12.7**
20.	MPO1395	620	10.8	12.2	12.7	12.3	**12.0**	11.8	10.6	12.7	**11.7**	**11.9**
21.	WHD968	621	11.9	13.7	13.8	12.0	**12.9**	11.1	10.3	10.0	**10.4**	**11.8**
22.	HI8848	622	11.8	12.5	13.1	11.8	**12.3**	11.6	9.9	12.3	**11.3**	**11.9**
23.	AKDW5516	623	11.6	13.1	13.1	11.7	**12.4**	11.6	10.8	12.7	**11.7**	**12.1**
24.	NIDW1534	624	10.7	12.5	11.6	12.1	**11.7**	11.1	9.7	11.3	**10.7**	**11.3**
25.	HI8713 (C)	625	10.1	12.2	12.6	12.0	**11.7**	10.7	9.7	10.3	**10.2**	**11.1**
		Mean	**11.8**	**12.8**	**12.7**	**12.3**	**12.4**	**11.6**	**10.3**	**11.9**	**11.3**	**11.9**

Table 29: Sedimentation value (ml) of *T. durum* genotypes in NIVT -4

S. No.	Entries	Code	CZ					PZ				Overall Mean
			P'kheda	Indore	Junagarh	Vijapur	Mean	Pune	Dharwad	Niphad	Mean	
1.	HI8850	601	37.0	52.0	45.5	41.0	**43.9**	38.0	43.0	44.0	**41.7**	**42.9**
2.	MPO1396	602	34.0	39.0	31.0	36.0	**35.0**	34.0	33.0	36.0	**34.3**	**34.7**
3.	PWU24	603	41.0	50.0	35.5	36.5	**40.8**	33.0	38.0	41.0	**37.3**	**39.3**
4.	GW1367	604	38.0	40.0	33.0	35.0	**36.5**	31.0	33.0	37.0	**33.7**	**35.3**
5.	DDW63	605	38.0	46.0	36.0	37.0	**39.3**	34.0	37.0	36.0	**35.7**	**37.7**
6.	MACS4135	606	37.0	47.5	36.0	32.0	**38.1**	35.5	38.0	45.5	**39.7**	**38.8**
7.	HI8849	607	33.0	42.0	34.0	35.5	**36.1**	29.0	33.0	38.0	**33.3**	**34.9**
8.	DDW62	608	42.0	47.5	43.0	37.0	**42.4**	36.0	44.0	45.0	**41.7**	**42.1**
9.	MACS4125	609	38.0	42.0	36.0	33.0	**37.3**	35.0	33.0	36.0	**34.7**	**36.1**
10.	PDW364	610	36.0	42.5	35.0	41.0	**38.6**	29.0	36.0	31.0	**32.0**	**35.8**
11.	HI8737 (C)	611	40.0	40.0	35.0	35.0	**37.5**	32.0	38.0	37.0	**35.7**	**36.7**
12.	NIDW1499	612	40.5	42.5	36.0	41.0	**40.0**	33.0	36.0	41.0	**36.7**	**38.6**
13.	MACS3949 (C)	613	42.0	50.5	42.5	48.0	**45.8**	41.0	42.0	48.0	**43.7**	**44.9**
14.	UAS483	614	36.0	45.0	40.0	41.0	**40.5**	33.0	43.0	37.0	**37.7**	**39.3**
15.	NIDW1520	615	43.0	52.5	45.0	45.0	**46.4**	36.0	41.5	52.0	**43.2**	**45.0**
16.	UAS482	616	43.0	55.0	46.0	45.5	**47.4**	36.5	44.0	36.0	**38.8**	**43.7**
17.	GW1365	617	34.0	35.0	34.0	33.0	**34.0**	29.0	33.0	30.0	**30.7**	**32.6**
18.	GW1366	618	20.0	21.0	20.0	19.0	**20.0**	19.0	20.0	20.0	**19.7**	**19.9**
19.	PDW365	619	45.0	55.0	47.0	48.0	**48.8**	39.0	40.0	40.0	**39.7**	**44.9**
20.	MPO1395	620	40.5	46.0	38.5	38.0	**40.8**	39.0	41.0	42.0	**40.7**	**40.7**
21.	WHD968	621	43.0	55.0	45.5	46.0	**47.4**	41.0	43.5	41.0	**41.8**	**45.0**
22.	HI8848	622	41.0	45.0	45.0	41.0	**43.0**	33.0	45.5	38.5	**39.0**	**41.3**
23.	AKDW5516	623	35.0	38.0	28.5	37.0	**34.6**	31.0	34.0	33.0	**32.7**	**33.8**
24.	NIDW1534	624	42.0	45.0	37.5	37.5	**40.5**	33.0	37.0	34.0	**34.7**	**38.0**
25.	HI8713 (C)	625	35.0	42.0	35.5	36.0	**37.1**	31.0	32.0	33.0	**32.0**	**34.9**
		Mean	**38.2**	**44.6**	**37.6**	**38.2**	**39.7**	**33.6**	**37.5**	**38.1**	**36.4**	**38.3**

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

S. No.	Entries	Code	CZ					PZ				Overall Mean
			P'kheda	Indore	Junagarh	Vijapur	Mean	Pune	Dharwad	Niphad	Mean	
1.	HI8850	601	4.3	4.3	3.9	5.4	**4.5**	5.2	4.4	3.8	**4.5**	**4.5**
2.	MPO1396	602	4.9	4.6	4.3	6.5	**5.1**	4.9	4.3	3.6	**4.3**	**4.7**
3.	PWU24	603	4.5	3.7	3.4	5.4	**4.3**	4.0	3.4	4.0	**3.8**	**4.1**
4.	GW1367	604	4.3	3.7	3.7	4.3	**4.0**	4.0	1.2	4.2	**3.1**	**3.6**
5.	DDW63	605	5.0	5.1	5.2	4.4	**4.9**	9.9	8.2	5.1	**7.7**	**6.1**
6.	MACS4135	606	6.0	5.9	6.0	6.3	**6.1**	5.5	5.9	7.7	**6.4**	**6.2**
7.	HI8849	607	5.8	6.5	5.3	6.0	**5.9**	5.6	4.9	6.0	**5.5**	**5.7**
8.	DDW62	608	6.5	7.2	7.4	6.4	**6.9**	5.6	8.3	5.0	**6.3**	**6.6**
9.	MACS4125	609	5.5	4.3	5.8	6.2	**5.4**	5.9	4.8	5.3	**5.3**	**5.4**
10.	PDW364	610	3.3	2.4	2.2	4.5	**3.1**	3.2	2.6	4.0	**3.3**	**3.2**
11.	HI8737 (C)	611	3.9	5.0	4.1	4.7	**4.4**	4.5	1.7	4.4	**3.5**	**4.0**
12.	NIDW1499	612	5.9	3.9	4.9	5.1	**4.9**	6.0	5.0	6.1	**5.7**	**5.3**
13.	MACS3949 (C)	613	5.5	3.8	4.0	4.3	**4.4**	4.4	4.2	4.7	**4.4**	**4.4**
14.	UAS483	614	5.1	4.6	5.1	5.2	**5.0**	4.2	4.5	3.8	**4.2**	**4.6**
15.	NIDW1520	615	5.6	3.7	4.9	4.5	**4.7**	3.9	4.4	5.4	**4.6**	**4.6**
16.	UAS482	616	6.4	6.9	6.1	6.8	**6.5**	5.2	5.9	5.1	**5.4**	**6.0**
17.	GW1365	617	4.8	5.1	4.3	6.1	**5.1**	3.8	4.5	4.8	**4.4**	**4.8**
18.	GW1366	618	3.6	2.7	3.9	4.4	**3.6**	3.7	2.0	2.6	**2.7**	**3.3**
19.	PDW365	619	5.1	4.1	4.5	4.6	**4.6**	5.3	5.0	4.0	**4.8**	**4.7**
20.	MPO1395	620	3.8	3.5	3.3	4.5	**3.8**	4.7	3.7	4.9	**4.4**	**4.1**
21.	WHD968	621	4.7	4.3	3.9	5.8	**4.7**	3.6	3.5	5.8	**4.3**	**4.5**
22.	HI8848	622	6.2	4.9	6.6	6.3	**6.0**	5.3	4.5	5.3	**5.0**	**5.6**
23.	AKDW5516	623	4.8	3.0	3.3	5.2	**4.1**	4.0	5.3	3.4	**4.3**	**4.1**
24.	NIDW1534	624	6.2	4.1	6.2	7.7	**6.1**	5.5	6.0	6.3	**5.9**	**6.0**
25.	HI8713 (C)	625	7.4	5.5	6.0	7.2	**6.5**	2.3	6.8	6.0	**5.0**	**5.9**
		Mean	**5.2**	**4.5**	**4.7**	**5.5**	**5.0**	**4.8**	**4.6**	**4.9**	**4.8**	**4.9**

Table 31: Yellow berry content (%) of *T. durum* genotypes in NIVT -4

S. No.	Entries	Code	CZ					PZ				Overall Mean
			P'kheda	Indore	Junagarh	Vijapur	Mean	Pune	Dharwad	Niphad	Mean	
1.	HI8850	601	1.0	1.0	1.0	1.0	**1.0**	0.0	1.0	0.0	**0.3**	**0.7**
2.	MPO1396	602	1.0	0.0	0.0	0.0	**0.3**	0.0	1.0	0.0	**0.3**	**0.3**
3.	PWU24	603	1.0	1.0	0.0	0.0	**0.5**	0.0	8.0	0.0	**2.7**	**1.4**
4.	GW1367	604	1.0	0.0	0.0	0.0	**0.3**	0.0	1.0	0.0	**0.3**	**0.3**
5.	DDW63	605	1.0	0.0	0.0	0.0	**0.3**	0.0	1.0	0.0	**0.3**	**0.3**
6.	MACS4135	606	15.0	2.0	4.0	5.0	**6.5**	5.0	10.0	3.0	**6.0**	**6.3**
7.	HI8849	607	5.0	0.0	0.0	0.0	**1.3**	0.0	8.0	1.0	**3.0**	**2.0**
8.	DDW62	608	1.0	1.0	0.0	0.0	**0.5**	0.0	1.0	1.0	**0.7**	**0.6**
9.	MACS4125	609	1.0	1.0	0.0	0.0	**0.5**	1.0	1.0	1.0	**1.0**	**0.7**
10.	PDW364	610	1.0	1.0	0.0	0.0	**0.5**	1.0	1.0	1.0	**1.0**	**0.7**
11.	HI8737 (C)	611	5.0	1.0	0.0	1.0	**1.8**	1.0	5.0	1.0	**2.3**	**2.0**
12.	NIDW1499	612	1.0	0.0	1.0	0.0	**0.5**	1.0	0.0	1.0	**0.7**	**0.6**
13.	MACS3949 (C)	613	1.0	0.0	1.0	0.0	**0.5**	1.0	0.0	1.0	**0.7**	**0.6**
14.	UAS483	614	1.0	0.0	0.0	0.0	**0.3**	0.0	0.0	1.0	**0.3**	**0.3**
15.	NIDW1520	615	1.0	0.0	0.0	0.0	**0.3**	0.0	0.0	1.0	**0.3**	**0.3**
16.	UAS482	616	5.0	0.0	1.0	0.0	**1.5**	0.0	0.0	1.0	**0.3**	**1.0**
17.	GW1365	617	1.0	0.0	0.0	0.0	**0.3**	0.0	0.0	1.0	**0.3**	**0.3**
18.	GW1366	618	20.0	3.0	10.0	12.0	**11.3**	10.0	8.0	4.0	**7.3**	**9.6**
19.	PDW365	619	1.0	0.0	1.0	1.0	**0.8**	1.0	0.0	0.0	**0.3**	**0.6**
20.	MPO1395	620	2.0	0.0	0.0	0.0	**0.5**	0.0	0.0	0.0	**0.0**	**0.3**
21.	WHD968	621	5.0	0.0	0.0	0.0	**1.3**	0.0	0.0	0.0	**0.0**	**0.7**
22.	HI8848	622	2.0	0.0	0.0	0.0	**0.5**	0.0	0.0	0.0	**0.0**	**0.3**
23.	AKDW5516	623	5.0	0.0	0.0	0.0	**1.3**	0.0	0.0	1.0	**0.3**	**0.9**
24.	NIDW1534	624	10.0	0.0	1.0	1.0	**3.0**	0.0	0.0	2.0	**0.7**	**2.0**
25.	HI8713 (C)	625	10.0	0.0	1.0	1.0	**3.0**	0.0	0.0	2.0	**0.7**	**2.0**
		Mean	**3.9**	**0.4**	**0.8**	**0.9**	**1.5**	**0.8**	**1.8**	**0.9**	**1.2**	**1.4**

Table 32: Grain appearance score (Max-10) of *T. aestivum* genotypes in NIVT 5A

S. No.	Entry	Trial Code	NWPZ						NEPZ					Overall Mean
			Ludhiana	Hisar	Durgapura	Delhi	Karnal	Mean	Kanpur	Varanasi	Samastipur	Sabour	Mean	
1	BRW3935	701	5.1	5.0	4.5	5.5	6.2	**5.3**	5.5	5.0	5.5	5.5	**5.4**	**5.3**
2	DBW427	702	5.9	6.0	4.9	6.0	6.2	**5.8**	6.0	5.0	5.5	5.0	**5.4**	**5.6**
3	NW8053	703	5.7	5.8	4.6	5.5	6.6	**5.6**	6.0	5.5	5.5	5.5	**5.6**	**5.6**
4	DBW430	704	5.9	5.7	5.7	6.0	6.0	**5.9**	6.0	5.0	5.5	5.5	**5.5**	**5.7**
5	K1317 (C)	705	5.1	7.0	4.3	6.5	6.2	**5.8**	6.0	6.0	6.0	5.5	**5.9**	**5.8**
6	PBW926	706	5.1	6.2	5.9	5.5	6.0	**5.7**	5.5	5.0	5.0	5.0	**5.1**	**5.5**
7	HD3459	707	5.0	4.9	4.5	5.5	5.8	**5.1**	5.5	5.5	5.5	5.5	**5.5**	**5.3**
8	UP3133	708	4.9	5.7	6.5	6.0	6.2	**5.9**	6.0	5.5	5.5	5.0	**5.5**	**5.7**
9	PBW644 (C)	709	6.2	6.9	6.5	5.5	6.0	**6.2**	6.0	6.0	6.0	5.5	**5.9**	**6.1**
10	HD3458	710	4.9	6.7	5.1	6.0	5.8	**5.7**	6.5	6.0	6.5	6.0	**6.3**	**5.9**
11	WH1326	711	6.5	5.5	5.4	6.5	6.8	**6.1**	6.0	6.0	6.5	6.5	**6.3**	**6.2**
12	WH1327	712	5.6	7.2	4.7	6.0	6.4	**6.0**	6.0	5.5	6.0	5.5	**5.8**	**5.9**
13	HD3468	713	5.2	5.3	5.4	5.5	5.8	**5.4**	5.5	5.0	5.5	5.0	**5.3**	**5.4**
14	K2210	714	6.4	6.1	5.4	6.0	6.4	**6.1**	6.0	5.5	5.5	6.0	**5.8**	**5.9**
15	DBW429	715	5.6	6.5	5.3	5.5	6.2	**5.8**	5.5	5.0	5.5	5.5	**5.4**	**5.6**
16	PBW925	716	5.7	6.7	5.5	6.0	6.6	**6.1**	6.5	6.0	5.5	5.5	**5.9**	**6.0**
17	JKW304	717	5.9	5.6	4.7	5.0	5.8	**5.4**	6.0	5.5	5.5	5.0	**5.5**	**5.4**
18	PBW927	718	5.7	6.6	4.9	5.5	6.4	**5.8**	5.5	5.5	5.5	5.5	**5.5**	**5.7**
19	HI1612 (C)	719	5.7	6.0	4.9	6.0	6.2	**5.8**	6.0	5.5	6.0	5.0	**5.6**	**5.7**
20	HD3460	720	5.7	6.0	6.5	6.0	5.8	**6.0**	6.0	6.0	5.5	6.0	**5.9**	**5.9**
21	PBW928	721	5.5	5.8	4.8	5.5	6.0	**5.5**	5.5	5.0	6.0	5.5	**5.5**	**5.5**
22	UP3129	722	5.5	5.8	4.9	5.5	6.2	**5.6**	6.0	5.0	5.5	5.5	**5.5**	**5.5**
23	JAUW705	723	5.7	5.3	4.9	5.0	5.8	**5.3**	5.5	5.5	5.5	4.5	**5.3**	**5.3**
24	DBW428	724	5.3	5.7	4.5	6.0	6.2	**5.5**	6.5	6.5	5.5	6.0	**6.1**	**5.8**
25	HD3457	725	4.9	6.0	4.3	6.0	6.2	**5.5**	6.5	6.0	5.5	5.5	**5.9**	**5.7**
Mean			**5.5**	**6.0**	**5.1**	**5.8**	**6.2**	**5.7**	**5.9**	**5.5**	**5.7**	**5.5**	**5.6**	**5.7**

Table 33: Hectolitre weight (kg/hl) of *T. aestivum* genotypes in NIVT 5A

S. No.	Entry	Trial Code	NWPZ						NEPZ					Overall Mean
			Ludhiana	Hisar	Durgapura	Delhi	Karnal	Mean	Kanpur	Varanasi	Samastipur	Sabour	Mean	
1	BRW3935	701	75.0	76.3	64.3	73.4	78.4	**73.5**	74.3	71.9	77.7	73.9	**74.5**	**73.9**
2	DBW427	702	77.0	77.0	65.0	73.2	77.7	**74.0**	76.5	70.8	77.2	72.5	**74.3**	**74.1**
3	NW8053	703	73.8	76.3	68.0	70.2	76.7	**73.0**	75.3	72.0	76.4	72.0	**73.9**	**73.4**
4	DBW430	704	75.0	76.8	70.8	74.2	77.3	**74.8**	75.5	71.8	78.1	72.0	**74.4**	**74.6**
5	K1317 (C)	705	76.0	79.5	61.8	76.4	79.7	**74.7**	77.4	73.6	79.3	74.6	**76.2**	**75.4**
6	PBW926	706	74.8	78.5	71.3	72.6	78.4	**75.1**	76.2	72.4	76.7	72.6	**74.5**	**74.8**
7	HD3459	707	73.8	76.0	64.3	74.1	77.3	**73.1**	75.8	71.0	74.2	70.4	**72.9**	**73.0**
8	UP3133	708	76.3	76.3	70.5	72.7	75.4	**74.2**	74.8	70.3	75.6	72.0	**73.2**	**73.8**
9	PBW644 (C)	709	78.3	78.0	71.0	74.9	77.5	**75.9**	76.1	71.7	78.3	72.3	**74.6**	**75.3**
10	HD3458	710	75.0	77.0	68.8	76.2	79.0	**75.2**	77.2	72.7	79.8	75.2	**76.2**	**75.7**
11	WH1326	711	77.8	76.5	69.0	74.0	78.3	**75.1**	74.8	71.1	76.3	71.0	**73.3**	**74.3**
12	WH1327	712	75.5	79.8	62.8	76.6	78.9	**74.7**	76.6	73.1	79.2	73.5	**75.6**	**75.1**
13	HD3468	713	74.5	77.3	67.5	73.7	77.2	**74.0**	75.8	71.1	77.9	70.7	**73.9**	**74.0**
14	K2210	714	77.0	78.3	70.5	76.4	79.3	**76.3**	77.0	73.3	77.8	74.1	**75.6**	**76.0**
15	DBW429	715	76.5	76.8	70.5	72.5	77.6	**74.8**	75.2	71.1	77.0	72.6	**74.0**	**74.4**
16	PBW925	716	76.5	76.5	68.0	74.7	78.1	**74.8**	75.3	71.6	76.2	71.6	**73.7**	**74.3**
17	JKW304	717	76.0	75.5	65.8	73.0	75.6	**73.2**	73.2	69.5	76.3	71.4	**72.6**	**72.9**
18	PBW927	718	75.8	77.8	66.8	75.7	78.2	**74.9**	76.4	73.3	78.4	74.1	**75.6**	**75.2**
19	HI1612 (C)	719	75.8	77.8	69.0	74.1	78.8	**75.1**	76.1	71.5	78.0	72.3	**74.5**	**74.8**
20	HD3460	720	73.5	78.5	70.0	74.2	78.0	**74.8**	77.2	73.3	80.1	76.1	**76.7**	**75.7**
21	PBW928	721	74.3	76.8	68.3	71.0	74.9	**73.1**	74.3	69.8	76.8	72.5	**73.4**	**73.2**
22	UP3129	722	74.5	76.5	67.8	72.8	75.8	**73.5**	73.3	69.1	77.1	72.0	**72.9**	**73.2**
23	JAUW705	723	74.8	74.5	67.5	68.2	73.2	**71.6**	71.5	68.0	76.1	68.0	**70.9**	**71.3**
24	DBW428	724	75.5	77.3	63.8	74.9	77.4	**73.8**	75.0	72.0	75.8	78.2	**75.3**	**74.4**
25	HD3457	725	75.5	77.0	65.8	74.7	77.9	**74.2**	75.6	72.2	77.1	72.9	**74.5**	**74.3**
Mean			**75.5**	**77.1**	**67.6**	**73.8**	**77.5**	**74.3**	**75.5**	**71.5**	**77.3**	**72.7**	**74.3**	**74.3**

Table 34: Protein content (%) at 12% moisture basis of *T. aestivum* genotypes in NIVT 5A

S. No.	Entry	Trial Code	NWPZ						NEPZ					Overall Mean
			Ludhiana	Hisar	Durgapura	Delhi	Karnal	Mean	Kanpur	Varanasi	Samastipur	Sabour	Mean	
1	BRW3935	701	11.9	10.1	15.9	11.4	11.3	**12.1**	12.3	12.0	10.8	10.9	**11.5**	**11.8**
2	DBW427	702	12.6	8.6	14.3	12.0	9.8	**11.4**	11.5	11.5	9.1	11.0	**10.8**	**11.1**
3	NW8053	703	11.2	9.3	13.3	12.5	10.8	**11.4**	12.7	11.2	10.5	11.5	**11.5**	**11.5**
4	DBW430	704	12.2	9.1	11.2	11.7	10.7	**11.0**	11.5	11.4	10.2	11.0	**11.0**	**11.0**
5	K1317 (C)	705	11.9	10.1	16.1	12.8	10.3	**12.2**	13.5	12.6	11.1	11.8	**12.3**	**12.2**
6	PBW926	706	10.7	9.8	13.8	13.3	9.9	**11.5**	12.1	11.6	11.4	12.1	**11.8**	**11.6**
7	HD3459	707	10.7	10.3	14.4	10.5	10.2	**11.2**	11.8	11.3	11.0	11.2	**11.3**	**11.3**
8	UP3133	708	10.6	9.5	13.9	11.3	9.8	**11.0**	12.4	12.2	10.8	11.1	**11.6**	**11.3**
9	PBW644 (C)	709	12.1	8.9	10.5	10.6	10.4	**10.5**	11.4	11.1	10.0	11.1	**10.9**	**10.7**
10	HD3458	710	12.4	8.9	14.6	11.5	10.4	**11.6**	11.9	11.7	10.7	11.1	**11.4**	**11.5**
11	WH1326	711	11.5	10.4	14.2	10.9	10.4	**11.5**	11.4	11.7	9.8	11.7	**11.2**	**11.3**
12	WH1327	712	11.6	11.0	15.8	10.7	9.8	**11.8**	12.1	11.5	9.9	11.6	**11.3**	**11.6**
13	HD3468	713	12.5	8.1	13.4	11.8	10.2	**11.2**	11.0	11.0	9.7	11.4	**10.8**	**11.0**
14	K2210	714	11.0	10.3	13.7	11.7	11.2	**11.6**	11.7	11.9	11.0	10.8	**11.4**	**11.5**
15	DBW429	715	12.2	9.6	12.3	12.1	10.1	**11.3**	11.7	12.1	10.6	11.7	**11.5**	**11.4**
16	PBW925	716	11.6	10.8	13.0	11.6	11.0	**11.6**	12.6	11.5	11.3	11.8	**11.8**	**11.7**
17	JKW304	717	11.1	10.0	16.1	11.1	10.0	**11.7**	13.0	11.9	10.4	11.3	**11.7**	**11.7**
18	PBW927	718	12.2	10.2	13.3	12.0	10.2	**11.6**	12.4	12.1	10.5	11.3	**11.6**	**11.6**
19	HI1612 (C)	719	11.4	8.6	14.5	12.0	9.8	**11.3**	12.9	12.4	11.2	11.5	**12.0**	**11.6**
20	HD3460	720	11.1	8.9	11.8	12.1	10.7	**10.9**	12.6	12.1	9.9	11.0	**11.4**	**11.1**
21	PBW928	721	11.1	9.2	13.9	11.9	11.3	**11.5**	12.2	12.3	10.6	11.3	**11.6**	**11.5**
22	UP3129	722	12.8	11.1	12.9	11.9	11.0	**11.9**	13.7	13.1	11.1	13.3	**12.8**	**12.3**
23	JAUW705	723	10.8	8.5	11.7	13.0	9.8	**10.8**	11.7	11.6	9.0	11.2	**10.9**	**10.8**
24	DBW428	724	11.2	9.6	15.1	11.6	11.3	**11.7**	11.9	11.2	11.1	11.2	**11.4**	**11.6**
25	HD3457	725	10.7	9.9	14.5	11.9	11.4	**11.7**	12.8	12.4	11.4	12.0	**12.2**	**11.9**
Mean			**11.6**	**9.6**	**13.8**	**11.8**	**10.5**	**11.4**	**12.2**	**11.8**	**10.5**	**11.4**	**11.5**	**11.5**

Table 35: Sedimentation value (ml) of *T. aestivum* genotypes in NIVT 5A

S. No.	Entry	Trial Code	NWPZ						NEPZ					Overall Mean
			Ludhiana	Hisar	Durgapura	Delhi	Karnal	Mean	Kanpur	Varanasi	Samastipur	Sabour	Mean	
1	BRW3935	701	53.0	48.0	46.0	62.0	68.0	**55.4**	56.0	60.0	58.0	62.0	**59.0**	**57.0**
2	DBW427	702	49.0	41.0	56.0	54.0	53.0	**50.6**	46.0	60.0	48.0	61.0	**53.8**	**52.0**
3	NW8053	703	45.0	47.0	55.0	52.0	60.0	**51.8**	62.0	62.0	55.0	62.0	**60.3**	**55.6**
4	DBW430	704	55.0	42.0	53.0	63.0	53.0	**53.2**	46.0	65.0	60.0	55.0	**56.5**	**54.7**
5	K1317 (C)	705	57.0	41.0	60.0	54.0	48.0	**52.0**	41.0	47.0	47.0	45.0	**45.0**	**48.9**
6	PBW926	706	54.0	42.0	55.0	70.0	53.0	**54.8**	58.0	65.0	56.0	58.0	**59.3**	**56.8**
7	HD3459	707	45.0	47.0	60.0	66.0	58.0	**55.2**	61.0	61.0	59.0	58.0	**59.8**	**57.2**
8	UP3133	708	47.0	48.0	49.0	65.0	55.0	**52.8**	62.0	64.0	55.0	60.0	**60.3**	**56.1**
9	PBW644 (C)	709	47.0	44.0	53.0	57.0	53.0	**50.8**	45.0	56.0	47.0	50.0	**49.5**	**50.2**
10	HD3458	710	45.0	46.0	52.0	62.0	68.0	**54.6**	55.0	60.0	53.0	60.0	**57.0**	**55.7**
11	WH1326	711	43.0	55.0	55.0	66.0	55.0	**54.8**	58.0	65.0	57.0	63.0	**60.8**	**57.4**
12	WH1327	712	49.0	50.0	58.0	59.0	63.0	**55.8**	59.0	65.0	63.0	65.0	**63.0**	**59.0**
13	HD3468	713	49.0	37.0	44.0	58.0	61.0	**49.8**	52.0	57.0	53.0	60.0	**55.5**	**52.3**
14	K2210	714	47.0	48.0	49.0	50.0	67.0	**52.2**	56.0	59.0	67.0	64.0	**61.5**	**56.3**
15	DBW429	715	49.0	41.0	54.0	56.0	55.0	**51.0**	52.0	54.0	58.0	63.0	**56.8**	**53.6**
16	PBW925	716	52.0	39.0	52.0	44.0	49.0	**47.2**	41.0	47.0	48.0	48.0	**46.0**	**46.7**
17	JKW304	717	48.0	45.0	49.0	43.0	50.0	**47.0**	52.0	55.0	52.0	52.0	**52.8**	**49.6**
18	PBW927	718	49.0	44.0	49.0	48.0	51.0	**48.2**	49.0	50.0	54.0	55.0	**52.0**	**49.9**
19	HI1612 (C)	719	46.0	47.0	48.0	66.0	62.0	**53.8**	60.0	64.0	59.0	75.0	**64.5**	**58.6**
20	HD3460	720	49.0	40.0	50.0	59.0	52.0	**50.0**	50.0	53.0	54.0	53.0	**52.5**	**51.1**
21	PBW928	721	52.0	46.0	56.0	59.0	55.0	**53.6**	55.0	60.0	64.0	60.0	**59.8**	**56.3**
22	UP3129	722	49.0	45.0	64.0	51.0	50.0	**51.8**	60.0	52.0	55.0	57.0	**56.0**	**53.7**
23	JAUW705	723	45.0	44.0	57.0	64.0	51.0	**52.2**	57.0	62.0	53.0	59.0	**57.8**	**54.7**
24	DBW428	724	43.0	46.0	61.0	60.0	58.0	**53.6**	53.0	60.0	55.0	60.0	**57.0**	**55.1**
25	HD3457	725	41.0	45.0	60.0	58.0	62.0	**53.2**	57.0	57.0	56.0	56.0	**56.5**	**54.7**
Mean			**48.3**	**44.7**	**53.8**	**57.8**	**56.4**	**52.2**	**53.7**	**58.4**	**55.4**	**58.4**	**56.5**	**54.1**

Table 36: Phenol test (Max score 10) of *T. aestivum* genotypes in NIVT 5A

S. No.	Entry	Trial Code	NWPZ						NEPZ					Overall Mean
			Ludhiana	Hisar	Durgapura	Delhi	Karnal	Mean	Kanpur	Varanasi	Samastipur	Sabour	Mean	
1	BRW3935	701	4.1	5.4	6.1	6.0	8.0	**5.9**	6.0	7.0	6.0	7.0	**6.5**	**6.2**
2	DBW427	702	4.6	5.6	6.1	7.0	7.5	**6.2**	6.0	7.0	7.0	7.0	**6.8**	**6.4**
3	NW8053	703	4.7	3.9	5.3	7.0	6.0	**5.4**	7.0	7.0	7.0	7.0	**7.0**	**6.1**
4	DBW430	704	5.1	5.7	5.5	8.0	9.0	**6.7**	7.0	7.0	7.0	8.0	**7.3**	**6.9**
5	K1317 (C)	705	4.2	1.7	5.4	4.0	3.0	**3.7**	4.0	5.0	4.0	5.0	**4.5**	**4.0**
6	PBW926	706	4.5	4.7	6.5	7.0	6.0	**5.7**	6.0	6.0	6.0	7.0	**6.3**	**6.0**
7	HD3459	707	3.9	5.0	3.2	7.0	8.0	**5.4**	7.0	8.0	7.0	8.0	**7.5**	**6.3**
8	UP3133	708	4.2	5.0	2.0	8.0	7.5	**5.3**	7.0	8.0	8.0	8.0	**7.8**	**6.4**
9	PBW644 (C)	709	3.1	3.3	5.4	7.0	7.0	**5.2**	7.0	8.0	8.0	8.0	**7.8**	**6.3**
10	HD3458	710	4.2	4.1	4.9	5.0	3.0	**4.2**	5.0	5.0	6.0	5.0	**5.3**	**4.7**
11	WH1326	711	4.7	6.1	3.3	7.0	8.0	**5.8**	7.0	8.0	7.0	8.0	**7.5**	**6.6**
12	WH1327	712	4.1	5.0	5.1	6.0	7.5	**5.5**	7.0	7.0	7.0	7.0	**7.0**	**6.2**
13	HD3468	713	4.1	5.3	5.2	7.0	9.0	**6.1**	8.0	7.0	8.0	7.0	**7.5**	**6.7**
14	K2210	714	3.8	3.7	5.7	5.0	5.5	**4.7**	6.0	5.0	6.0	6.0	**5.8**	**5.2**
15	DBW429	715	3.1	4.5	5.0	7.0	6.5	**5.2**	8.0	7.0	8.0	8.0	**7.8**	**6.3**
16	PBW925	716	1.8	5.2	6.2	7.0	6.0	**5.2**	8.0	7.0	8.0	8.0	**7.8**	**6.4**
17	JKW304	717	3.9	4.9	6.0	7.0	6.5	**5.7**	8.0	7.0	8.0	8.0	**7.8**	**6.6**
18	PBW927	718	4.1	5.0	5.3	7.0	6.0	**5.5**	8.0	7.0	8.0	8.0	**7.8**	**6.5**
19	HI1612 (C)	719	4.1	5.1	1.8	7.0	6.5	**4.9**	8.0	8.0	8.0	7.0	**7.8**	**6.2**
20	HD3460	720	3.4	4.8	5.7	6.0	6.0	**5.2**	7.0	7.0	7.0	7.0	**7.0**	**6.0**
21	PBW928	721	4.1	6.1	5.8	7.0	9.0	**6.4**	7.0	7.0	7.0	8.0	**7.3**	**6.8**
22	UP3129	722	4.6	5.3	6.3	7.0	8.0	**6.2**	7.0	7.0	7.0	7.0	**7.0**	**6.6**
23	JAUW705	723	5.1	5.4	6.2	7.0	8.5	**6.4**	7.0	7.0	8.0	8.0	**7.5**	**6.9**
24	DBW428	724	3.0	5.1	5.7	7.0	8.0	**5.8**	7.0	7.0	7.0	6.0	**6.8**	**6.2**
25	HD3457	725	4.0	5.0	5.1	7.0	7.5	**5.7**	7.0	7.0	8.0	7.0	**7.3**	**6.4**
Mean			**4.0**	**4.8**	**5.2**	**6.7**	**6.9**	**5.5**	**6.9**	**6.9**	**7.1**	**7.2**	**7.0**	**6.2**

Table 37: Grain appearance score (out of 10) of *T. durum* genotypes in NIVT-5B

S. No.	Entries	Code	CZ					PZ				Overall Mean
			Vijapur	Indore	P'kheda	Junagarh	Mean	Dharwad	Pune	Niphad	Mean	
1.	PBN16-1826	801	6.8	6.5	5.5	6.8	**6.4**	6.8	5.8	6.5	**6.3**	**6.4**
2.	NIAW4387	802	7.5	7.0	7.0	7.0	**7.1**	7.0	7.0	7.0	**7.0**	**7.1**
3.	DBW428	803	7.3	6.8	7.0	7.3	**7.1**	5.5	7.0	7.0	**6.5**	**6.8**
4.	UAS3029	804	7.0	6.8	7.0	7.2	**7.0**	6.5	6.3	6.5	**6.4**	**6.8**
5.	DBW110 (C)	805	7.0	6.0	6.0	6.8	**6.4**	7.0	6.0	6.8	**6.6**	**6.5**
6.	UAS484(d)	806	8.0	7.0	7.0	7.3	**7.3**	7.5	7.0	7.0	**7.2**	**7.3**
7.	GW1368(d)	807	6.0	5.0	6.0	7.0	**6.0**	7.0	5.8	7.3	**6.7**	**6.3**
8.	HI8852(d)	808	8.0	6.2	6.8	8.0	**7.2**	7.5	7.3	7.3	**7.3**	**7.3**
9.	MACS4131(d)	809	8.0	6.0	7.5	7.3	**7.2**	7.5	7.3	5.5	**6.8**	**7.0**
10.	HI1688	810	8.0	6.8	7.5	7.3	**7.4**	6.5	7.5	7.8	**7.3**	**7.3**
11.	DBW432	811	6.8	5.5	6.0	7.5	**6.4**	6.5	6.8	6.5	**6.6**	**6.5**
12.	MPO1398(d)	812	7.0	6.8	6.5	6.8	**6.8**	7.5	6.5	6.8	**6.9**	**6.8**
13.	NIAW4267	813	6.8	5.8	7.0	7.3	**6.7**	7.0	6.5	6.3	**6.6**	**6.6**
14.	HI1689	814	7.0	6.5	7.0	7.5	**7.0**	7.5	6.8	6.8	**7.0**	**7.0**
15.	AKAW5514	815	6.8	6.8	6.8	6.8	**6.8**	6.8	6.8	6.5	**6.7**	**6.7**
16.	HI1693	816	6.8	6.7	7.0	6.8	**6.8**	7.0	7.0	7.5	**7.2**	**7.0**
17.	GW552	817	6.5	6.5	6.8	7.0	**6.7**	7.0	7.0	6.5	**6.8**	**6.8**
18.	DBW431	818	6.8	5.5	6.5	6.5	**6.3**	6.5	5.5	6.0	**6.0**	**6.2**
19.	HI8627(d) (C)	819	7.5	7.0	7.5	7.0	**7.3**	7.5	7.5	7.0	**7.3**	**7.3**
20.	HI1605 (C)	820	7.0	6.5	6.8	7.0	**6.8**	6.2	6.8	6.5	**6.5**	**6.7**
21.	UAS446(d) (C)	821	8.0	6.8	7.8	7.8	**7.6**	7.5	7.0	7.0	**7.2**	**7.4**
22.	MP3577	822	7.5	6.8	7.0	7.5	**7.2**	7.5	6.8	6.8	**7.0**	**7.1**
23.	DDW64(d)	823	7.5	7.3	7.8	7.0	**7.4**	7.5	7.3	7.5	**7.4**	**7.4**
24.	HI8851(d)	824	8.5	6.8	7.5	8.5	**7.8**	8.0	7.5	7.5	**7.7**	**7.8**
25.	CG1047	825	7.0	6.8	7.0	7.8	**7.1**	7.0	6.8	7.0	**6.9**	**7.1**
		Mean	**7.2**	**6.5**	**6.9**	**7.2**	**7.0**	**7.0**	**6.8**	**6.8**	**6.9**	**6.9**

Table 38: Hectoliter weight (kg/hl.) of *T. durum* genotypes in NIVT-5B

S. No.	Entries	Code	CZ					PZ				Overall Mean
			Vijapur	Indore	P'kheda	Junagarh	Mean	Dharwad	Pune	Niphad	Mean	
1.	PBN16-1826	801	81.0	81.0	82.0	84.0	**82.0**	78.0	80.0	79.0	**79.0**	**80.7**
2.	NIAW4387	802	82.0	82.0	81.0	84.0	**82.3**	76.0	81.0	82.0	**79.7**	**81.1**
3.	DBW428	803	80.0	83.0	82.0	85.0	**82.5**	74.0	79.0	80.0	**77.7**	**80.4**
4.	UAS3029	804	79.0	82.0	82.0	84.0	**81.8**	79.0	81.0	78.0	**79.3**	**80.7**
5.	DBW110 (C)	805	78.0	81.0	80.0	83.0	**80.5**	76.0	77.0	80.0	**77.7**	**79.3**
6.	UAS484(d)	806	77.0	84.0	79.0	82.0	**80.5**	76.0	82.0	78.0	**78.7**	**79.7**
7.	GW1368(d)	807	74.0	79.0	75.0	80.0	**77.0**	71.0	74.0	76.0	**73.7**	**75.6**
8.	HI8852(d)	808	82.0	85.0	84.0	85.0	**84.0**	80.0	87.0	84.0	**83.7**	**83.9**
9.	MACS4131(d)	809	84.0	83.0	87.0	87.0	**85.3**	80.0	87.0	84.0	**83.7**	**84.6**
10.	HI1688	810	83.0	85.0	86.0	86.0	**85.0**	81.0	83.0	82.0	**82.0**	**83.7**
11.	DBW432	811	78.0	82.0	81.0	84.0	**81.3**	76.0	82.0	78.0	**78.7**	**80.1**
12.	MPO1398(d)	812	81.0	84.0	83.0	84.0	**83.0**	80.0	81.0	84.0	**81.7**	**82.4**
13.	NIAW4267	813	81.0	81.0	81.0	84.0	**81.8**	76.0	83.0	80.0	**79.7**	**80.9**
14.	HI1689	814	86.0	84.0	84.0	85.0	**84.8**	81.0	86.0	83.0	**83.3**	**84.1**
15.	AKAW5514	815	79.0	81.0	81.0	82.0	**80.8**	75.0	81.0	80.0	**78.7**	**79.9**
16.	HI1693	816	78.0	85.0	84.0	82.0	**82.3**	79.0	83.0	82.0	**81.3**	**81.9**
17.	GW552	817	81.0	82.0	83.0	84.0	**82.5**	78.0	84.0	83.0	**81.7**	**82.1**
18.	DBW431	818	79.0	78.0	84.0	84.0	**81.3**	87.0	77.0	83.0	**82.3**	**81.7**
19.	HI8627(d) (C)	819	80.0	83.0	85.0	80.0	**82.0**	82.0	85.0	85.0	**84.0**	**82.9**
20.	HI1605 (C)	820	81.0	84.0	86.0	86.0	**84.3**	74.0	87.0	82.0	**81.0**	**82.9**
21.	UAS446(d) (C)	821	82.0	83.0	85.0	85.0	**83.8**	83.0	80.0	83.0	**82.0**	**83.0**
22.	MP3577	822	84.0	83.0	84.0	85.0	**84.0**	83.0	84.0	80.0	**82.3**	**83.3**
23.	DDW64(d)	823	85.0	85.0	86.0	85.0	**85.3**	84.0	87.0	84.0	**85.0**	**85.1**
24.	HI8851(d)	824	86.0	84.0	86.0	87.0	**85.8**	82.0	86.0	86.0	**84.7**	**85.3**
25.	CG1047	825	83.0	87.0	84.0	86.0	**85.0**	80.0	86.0	81.0	**82.3**	**83.9**
		Mean	**81.0**	**82.8**	**83.0**	**84.1**	**82.7**	**78.8**	**82.5**	**81.5**	**80.9**	**82.0**

Table 39: Protein content (%) at 12% moisture basis of *T. durum* genotypes in NIVT-5B

S. No.	Entries	Code	CZ					PZ				Overall Mean
			Vijapur	Indore	P'kheda	Junagarh	Mean	Dharwad	Pune	Niphad	Mean	
1.	PBN16-1826	801	11.7	9.8	10.6	13.4	**11.4**	13.8	10.8	11.5	**12.0**	**11.7**
2.	NIAW4387	802	11.7	10.8	8.9	13.6	**11.3**	15.1	12.9	10.7	**12.9**	**12.0**
3.	DBW428	803	11.7	9.6	8.7	14.2	**11.1**	16.6	11.4	10.8	**12.9**	**11.9**
4.	UAS3029	804	12.0	10.5	9.2	12.9	**11.2**	15.7	11.0	10.5	**12.4**	**11.7**
5.	DBW110 (C)	805	12.0	9.5	9.1	13.3	**11.0**	17.2	12.5	12.0	**13.9**	**12.2**
6.	UAS484(d)	806	11.9	10.2	10.1	12.8	**11.2**	15.9	11.4	12.1	**13.1**	**12.0**
7.	GW1368(d)	807	13.7	9.9	12.0	14.5	**12.5**	16.1	13.2	12.6	**14.0**	**13.1**
8.	HI8852(d)	808	12.5	9.5	9.9	11.8	**10.9**	16.0	10.7	12.5	**13.0**	**11.8**
9.	MACS4131(d)	809	12.7	9.9	10.0	12.4	**11.3**	17.1	11.6	12.3	**13.7**	**12.3**
10.	HI1688	810	13.1	9.4	8.7	14.0	**11.3**	14.2	11.9	12.8	**13.0**	**12.0**
11.	DBW432	811	12.3	8.8	10.3	13.3	**11.2**	16.3	11.0	11.0	**12.8**	**11.8**
12.	MPO1398(d)	812	12.5	10.0	9.9	13.9	**11.6**	15.2	13.3	12.2	**13.5**	**12.4**
13.	NIAW4267	813	11.8	10.9	8.4	13.7	**11.2**	16.3	11.2	11.3	**12.9**	**11.9**
14.	HI1689	814	11.2	9.2	9.1	13.9	**10.9**	14.7	11.9	11.8	**12.8**	**11.7**
15.	AKAW5514	815	12.4	9.6	10.1	12.9	**11.2**	18.5	10.5	11.2	**13.4**	**12.2**
16.	HI1693	816	11.5	9.9	9.3	11.7	**10.6**	15.6	11.5	11.0	**12.7**	**11.5**
17.	GW552	817	12.4	9.5	8.9	13.2	**11.0**	15.0	10.7	11.4	**12.4**	**11.6**
18.	DBW431	818	12.5	10.7	8.0	12.6	**11.0**	15.9	13.2	11.9	**13.7**	**12.1**
19.	HI8627(d) (C)	819	13.3	10.7	8.6	14.6	**11.8**	16.8	11.3	12.1	**13.4**	**12.5**
20.	HI1605 (C)	820	12.9	9.9	10.9	13.4	**11.8**	17.9	11.4	11.9	**13.7**	**12.6**
21.	UAS446(d) (C)	821	13.4	9.3	9.0	13.3	**11.2**	15.1	12.7	12.2	**13.3**	**12.1**
22.	MP3577	822	13.0	10.7	11.2	16.4	**12.8**	16.7	13.4	13.7	**14.6**	**13.6**
23.	DDW64(d)	823	12.8	9.9	9.5	14.0	**11.6**	15.6	12.3	12.1	**13.3**	**12.3**
24.	HI8851(d)	824	13.4	9.6	9.1	13.8	**11.5**	17.3	10.7	12.2	**13.4**	**12.3**
25.	CG1047	825	11.7	8.8	8.7	13.6	**10.7**	14.6	11.3	10.9	**12.3**	**11.4**
		Mean	**12.4**	**9.9**	**9.5**	**13.5**	**11.3**	**16.0**	**11.7**	**11.8**	**13.2**	**12.1**

Table 40: Sedimentation value (ml) of *T. durum* genotypes in NIVT-5B

S. No.	Entries	Code	CZ					PZ				Overall Mean
			Vijapur	Indore	P'kheda	Junagarh	Mean	Dharwad	Pune	Niphad	Mean	
1.	PBN16-1826	801	50.0	53.5	54.0	54.0	**52.9**	61.5	53.5	49.5	**54.8**	**53.7**
2.	NIAW4387	802	38.0	39.0	41.0	49.5	**41.9**	45.5	46.5	38.0	**43.3**	**42.5**
3.	DBW428	803	54.5	53.5	50.0	43.0	**50.3**	61.0	58.5	60.5	**60.0**	**54.4**
4.	UAS3029	804	42.5	45.0	43.0	48.5	**44.8**	52.5	47.5	50.0	**50.0**	**47.0**
5.	DBW110 (C)	805	44.5	43.0	44.5	52.0	**46.0**	59.5	49.0	51.0	**53.2**	**49.1**
6.	UAS484(d)	806	37.0	38.0	35.5	39.5	**37.5**	34.0	38.5	42.0	**38.2**	**37.8**
7.	GW1368(d)	807	23.0	22.0	21.0	23.5	**22.4**	24.5	23.5	21.0	**23.0**	**22.6**
8.	HI8852(d)	808	28.5	29.0	28.0	22.0	**26.9**	31.5	29.5	30.0	**30.3**	**28.4**
9.	MACS4131(d)	809	28.0	24.5	25.5	21.5	**24.9**	28.5	24.5	25.0	**26.0**	**25.4**
10.	HI1688	810	47.0	42.5	44.5	41.5	**43.9**	60.5	51.0	54.0	**55.2**	**48.7**
11.	DBW432	811	51.0	41.5	47.5	38.5	**44.6**	60.0	47.5	56.5	**54.7**	**48.9**
12.	MPO1398(d)	812	35.0	32.5	33.5	32.0	**33.3**	24.5	32.0	34.0	**30.2**	**31.9**
13.	NIAW4267	813	27.0	37.0	33.0	32.0	**32.3**	28.0	32.0	30.0	**30.0**	**31.3**
14.	HI1689	814	45.0	38.5	42.0	39.0	**41.1**	50.0	41.0	45.5	**45.5**	**43.0**
15.	AKAW5514	815	39.5	47.0	47.5	46.5	**45.1**	49.0	47.5	53.5	**50.0**	**47.2**
16.	HI1693	816	41.0	43.0	44.5	46.5	**43.8**	47.0	45.0	48.0	**46.7**	**45.0**
17.	GW552	817	31.5	30.5	29.5	39.5	**32.8**	39.0	34.0	31.0	**34.7**	**33.6**
18.	DBW431	818	37.0	38.5	37.5	43.5	**39.1**	42.0	38.0	43.0	**41.0**	**39.9**
19.	HI8627(d) (C)	819	24.0	25.0	23.0	28.0	**25.0**	22.0	23.0	22.5	**22.5**	**23.9**
20.	HI1605 (C)	820	46.0	51.5	54.5	56.5	**52.1**	61.0	52.5	56.0	**56.5**	**54.0**
21.	UAS446(d) (C)	821	36.0	34.5	35.5	42.0	**37.0**	37.5	38.0	42.0	**39.2**	**37.9**
22.	MP3577	822	58.5	57.0	60.5	58.0	**58.5**	65.5	64.0	63.0	**64.2**	**60.9**
23.	DDW64(d)	823	35.0	31.5	34.0	37.5	**34.5**	31.0	32.5	33.0	**32.2**	**33.5**
24.	HI8851(d)	824	22.5	26.0	21.5	29.5	**24.9**	26.5	30.5	29.5	**28.8**	**26.6**
25.	CG1047	825	40.0	40.0	34.0	49.0	**40.8**	54.0	41.0	42.0	**45.7**	**42.9**
		Mean	**38.5**	**38.6**	**38.6**	**40.5**	**39.0**	**43.8**	**40.8**	**42.0**	**42.2**	**40.4**

Table 41: Yellow pigment content (ppm) of *T. durum* genotypes in NIVT-5B

S. No.	Entries	Code	CZ					PZ				Overall Mean
			Vijapur	Indore	P'kheda	Junagarh	Mean	Dharwad	Pune	Niphad	Mean	
1.	PBN16-1826	801	5.7	4.5	4.1	3.6	**4.5**	3.4	5.2	4.7	**4.5**	**4.5**
2.	NIAW4387	802	5.1	5.2	5.1	4.0	**4.9**	4.2	5.2	5.0	**4.8**	**4.8**
3.	DBW428	803	4.2	4.5	3.9	3.9	**4.1**	4.0	4.6	4.1	**4.3**	**4.2**
4.	UAS3029	804	2.7	4.1	3.3	3.4	**3.4**	4.6	4.5	3.6	**4.2**	**3.8**
5.	DBW110 (C)	805	4.3	4.8	3.4	3.5	**4.0**	3.6	4.2	3.4	**3.8**	**3.9**
6.	UAS484(d)	806	7.3	8.2	7.9	8.8	**8.1**	8.9	9.1	8.8	**8.9**	**8.4**
7.	GW1368(d)	807	5.6	5.3	5.6	5.1	**5.4**	6.4	6.3	5.7	**6.1**	**5.7**
8.	HI8852(d)	808	6.8	7.1	6.9	6.7	**6.9**	7.7	7.8	7.4	**7.6**	**7.2**
9.	MACS4131(d)	809	6.6	7.4	6.6	7.1	**6.9**	7.9	7.1	7.0	**7.3**	**7.1**
10.	HI1688	810	4.2	4.3	3.4	2.9	**3.7**	3.6	4.2	4.2	**4.0**	**3.8**
11.	DBW432	811	3.1	5.0	4.7	4.0	**4.2**	5.1	5.3	5.7	**5.4**	**4.7**
12.	MPO1398(d)	812	7.1	8.3	7.3	8.3	**7.7**	8.6	8.6	8.3	**8.5**	**8.1**
13.	NIAW4267	813	8.9	4.1	4.6	4.1	**5.5**	4.9	5.7	5.2	**5.3**	**5.4**
14.	HI1689	814	4.0	4.3	3.3	2.9	**3.6**	3.2	4.5	4.5	**4.1**	**3.8**
15.	AKAW5514	815	4.3	4.9	4.7	4.7	**4.7**	5.1	5.3	5.0	**5.1**	**4.9**
16.	HI1693	816	3.0	5.1	4.1	3.9	**4.0**	4.4	5.4	5.1	**4.9**	**4.4**
17.	GW552	817	4.2	5.8	5.4	6.7	**5.5**	6.7	5.7	5.5	**6.0**	**5.7**
18.	DBW431	818	3.4	4.0	5.6	3.1	**4.0**	5.8	6.9	6.2	**6.3**	**5.0**
19.	HI8627(d) (C)	819	6.6	8.1	7.9	9.2	**8.0**	7.6	9.4	7.7	**8.2**	**8.1**
20.	HI1605 (C)	820	4.2	4.3	3.4	2.7	**3.6**	3.8	4.2	4.3	**4.1**	**3.8**
21.	UAS446(d) (C)	821	7.3	8.2	5.0	7.7	**7.1**	7.3	8.2	5.1	**6.9**	**7.0**
22.	MP3577	822	4.6	4.0	3.1	5.4	**4.3**	3.8	4.6	4.7	**4.4**	**4.3**
23.	DDW64(d)	823	6.5	7.5	7.0	8.2	**7.3**	9.7	8.1	8.2	**8.7**	**7.9**
24.	HI8851(d)	824	6.3	7.0	7.7	7.2	**7.0**	7.2	7.7	7.1	**7.3**	**7.2**
25.	CG1047	825	2.1	3.8	3.9	3.2	**3.3**	3.4	4.6	4.0	**4.0**	**3.6**
		Mean	**5.1**	**5.6**	**5.1**	**5.2**	**5.3**	**5.6**	**6.1**	**5.6**	**5.8**	**5.5**

Table 42: Yellow berry content (%) of *T. durum* genotypes in NIVT-5B

S. No.	Entries	Code	CZ					PZ				Overall Mean
			Vijapur	Indore	P'kheda	Junagarh	Mean	Dharwad	Pune	Niphad	Mean	
1.	PBN16-1826	801	0.0	17.0	6.0	0.0	**5.8**	0	12.0	2.0	**4.7**	**5.3**
2.	NIAW4387	802	3.0	9.0	5.0	0.0	**4.3**	0	0.0	2.0	**0.7**	**2.7**
3.	DBW428	803	0.0	32.0	6.0	1.0	**9.8**	0	3.0	8.0	**3.7**	**7.1**
4.	UAS3029	804	0.0	24.0	3.0	0.0	**6.8**	0	13.0	12.0	**8.3**	**7.4**
5.	DBW110 (C)	805	0.0	38.0	9.0	1.0	**12.0**	0	1.0	5.0	**2.0**	**7.7**
6.	UAS484(d)	806	0.0	19.0	11.0	5.0	**8.8**	0	11.0	8.0	**6.3**	**7.7**
7.	GW1368(d)	807	0.0	56.0	5.0	6.0	**16.8**	0	12.0	6.0	**6.0**	**12.1**
8.	HI8852(d)	808	0.0	20.0	23.0	3.0	**11.5**	0	21.0	4.0	**8.3**	**10.1**
9.	MACS4131(d)	809	0.0	43.0	5.0	5.0	**13.3**	0	7.0	3.0	**3.3**	**9.0**
10.	HI1688	810	0.0	16.0	2.0	0.0	**4.5**	0	4.0	0.0	**1.3**	**3.1**
11.	DBW432	811	0.0	58.0	19.0	0.0	**19.3**	0	8.0	4.0	**4.0**	**12.7**
12.	MPO1398(d)	812	0.0	27.0	28.0	2.0	**14.3**	0	5.0	5.0	**3.3**	**9.6**
13.	NIAW4267	813	2.0	5.0	3.0	0.0	**2.5**	0	5.0	8.0	**4.3**	**3.3**
14.	HI1689	814	1.0	39.0	10.0	0.0	**12.5**	0	3.0	7.0	**3.3**	**8.6**
15.	AKAW5514	815	1.0	15.0	15.0	3.0	**8.5**	0	11.0	11.0	**7.3**	**8.0**
16.	HI1693	816	0.0	4.0	0.0	0.0	**1.0**	0	0.0	0.0	**0.0**	**0.6**
17.	GW552	817	3.0	54.0	16.0	2.0	**18.8**	0	15.0	13.0	**9.3**	**14.7**
18.	DBW431	818	0.0	18.0	9.0	0.0	**6.8**	0	0.0	1.0	**0.3**	**4.0**
19.	HI8627(d) (C)	819	2.0	22.0	3.0	0.0	**6.8**	0	5.0	7.0	**4.0**	**5.6**
20.	HI1605 (C)	820	0.0	13.0	0.0	0.0	**3.3**	0	22.0	5.0	**9.0**	**5.7**
21.	UAS446(d) (C)	821	0.0	28.0	6.0	0.0	**8.5**	0	4.0	4.0	**2.7**	**6.0**
22.	MP3577	822	1.0	8.0	1.0	0.0	**2.5**	0	1.0	6.0	**2.3**	**2.4**
23.	DDW64(d)	823	0.0	10.0	9.0	0.0	**4.8**	0	12.0	2.0	**4.7**	**4.7**
24.	HI8851(d)	824	0.0	31.0	6.0	0.0	**9.3**	0	18.0	1.0	**6.3**	**8.0**
25.	CG1047	825	2.0	15.0	4.0	0.0	**5.3**	0	11.0	10.0	**7.0**	**6.0**
		Mean	**0.6**	**24.8**	**8.2**	**1.1**	**8.7**	0	8.2	5.4	**4.5**	**6.9**

Table 43: Grain appearance score (Max. 10) of *T. aestivum* genotypes in NIVT 6

S.N o	Entry	Code	NWPZ					CZ					Overall mean
			Ludhiana	Delhi	Hisar	Karnal	Mean	Indore	Junagadh	P'kheda	Vijapur	Mean	
1	DBW187 (C)	901	7.0	7.0	5.0	6.8	**6.5**	5.3	6.5	5.5	5.0	**5.6**	**6.0**
2	GW553	902	6.0	7.0	6.0	6.2	**6.3**	6.3	6.0	5.3	5.8	**5.9**	**6.1**
3	DBW433	903	7.0	6.0	7.0	5.6	**6.4**	4.8	5.8	5.5	4.8	**5.2**	**5.8**
4	GW557	904	6.0	6.0	6.0	5.8	**6.0**	5.5	7.0	6.3	6.5	**6.3**	**6.1**
5	DBW440	905	5.0	5.0	6.0	5.8	**5.5**	4.0	4.3	4.3	4.0	**4.2**	**4.8**
6	DBW434	906	6.0	5.0	5.0	6.0	**5.5**	5.0	7.0	5.8	5.5	**5.8**	**5.7**
7	PBW903	907	6.0	7.0	7.0	6.2	**6.6**	4.5	5.8	6.0	5.8	**5.5**	**6.0**
8	DBW435	908	7.0	6.0	5.0	6.2	**6.1**	4.5	6.3	5.8	5.0	**5.4**	**5.7**
9	GW322 (C)	909	7.0	6.0	6.0	6.0	**6.3**	4.8	6.3	5.8	6.0	**5.7**	**6.0**
10	MP1399	910	5.0	5.0	7.0	5.8	**5.7**	4.5	6.3	6.5	5.3	**5.7**	**5.7**
11	WH1320	911	8.0	7.0	5.0	6.2	**6.6**	5.3	6.5	5.5	6.5	**6.0**	**6.3**
12	PBW904	912	5.0	7.0	8.0	5.8	**6.5**	4.8	6.5	5.5	5.8	**5.7**	**6.1**
13	HD3464	913	5.0	8.0	6.0	5.6	**6.2**	4.3	4.5	4.3	3.5	**4.2**	**5.2**
14	DBW436	914	6.0	6.0	7.0	6.2	**6.3**	5.0	7.0	6.5	6.0	**6.1**	**6.2**
15	HI1690	915	7.0	5.0	5.0	5.8	**5.7**	5.8	5.3	5.0	5.3	**5.4**	**5.5**
16	RAJ4583	916	5.0	5.0	6.0	5.6	**5.4**	5.5	7.0	5.5	6.5	**6.1**	**5.8**
17	DBW438	917	5.0	6.0	5.0	6.6	**5.7**	5.0	6.8	6.3	6.3	**6.1**	**5.9**
18	BRW3922	918	8.0	4.0	6.0	5.6	**5.9**	5.0	5.8	6.0	5.0	**5.5**	**5.7**
19	HI1691	919	7.0	6.0	6.0	6.6	**6.4**	6.0	7.0	6.8	6.5	**6.6**	**6.5**
20	MP3572	920	6.0	6.0	7.0	6.6	**6.4**	5.3	6.8	6.0	5.3	**5.9**	**6.1**
21	PBW905	921	7.0	5.0	5.0	5.2	**5.6**	4.3	5.0	5.0	4.5	**4.7**	**5.1**
22	HD3461	922	7.0	5.0	6.0	6.0	**6.0**	4.0	5.5	5.0	4.8	**4.8**	**5.4**
23	CG1049	923	7.0	8.0	5.0	6.0	**6.5**	6.0	6.8	6.5	6.5	**6.5**	**6.5**
24	DBW303 (C)	924	6.0	5.0	6.0	6.0	**5.8**	5.0	5.8	6.0	5.5	**5.6**	**5.7**
25	DBW439	925	6.0	5.0	7.0	6.8	**6.2**	5.5	6.8	5.5	5.5	**5.8**	**6.0**
26	DBW437	926	7.0	4.0	6.0	6.2	**5.8**	5.8	6.3	5.5	5.0	**5.7**	**5.7**
27	HD3462	927	7.0	6.0	7.0	5.8	**6.5**	4.3	5.3	5.0	4.8	**4.9**	**5.7**
28	JWS1333	928	7.0	7.0	5.0	5.4	**6.1**	4.3	4.3	5.3	4.0	**4.5**	**5.3**
29	DBW327 (C)	929	6.0	8.0	6.0	6.4	**6.6**	6.3	6.5	5.8	5.8	**6.1**	**6.4**
30	PBW929	930	6.0	7.0	5.0	6.0	**6.0**	5.0	6.8	6.0	6.0	**6.0**	**6.0**
31	HD3463	931	8.0	7.0	8.0	6.0	**7.3**	4.0	6.3	5.5	4.8	**5.2**	**6.2**
32	DBW445	932	5.0	6.0	7.0	6.2	**6.1**	4.0	4.0	4.8	4.0	**4.2**	**5.1**
33	PBW906	933	7.0	8.0	5.0	6.6	**6.7**	5.0	6.0	6.3	6.0	**5.8**	**6.2**
34	WH1321	934	6.0	7.0	6.0	6.0	**6.3**	3.8	4.0	4.5	4.0	**4.1**	**5.2**
35	PBW907	935	6.0	5.0	8.0	6.2	**6.3**	5.8	5.5	6.5	4.8	**5.7**	**6.0**
36	UP3130	936	7.0	6.0	8.0	5.4	**6.6**	5.0	5.5	5.3	4.8	**5.2**	**5.9**
		Mean	**6.4**	**6.1**	**6.1**	**6.0**	**6.2**	**5.0**	**6.0**	**5.6**	**5.3**	**5.5**	**5.8**

Table 44: Hectolitre weight (kg/hl) of *T. aestivum* genotypes in NIVT 6

S.N o	Entry	Code	NWPZ					CZ					Overall mean
			Ludhiana	Delhi	Hisar	Karnal	Mean	Indore	Junagadh	P'kheda	Vijapur	Mean	
1	DBW187 (C)	901	75.3	71.6	75.1	77.3	**74.8**	78.8	82.9	81.4	82.0	**81.3**	**78.1**
2	GW553	902	71.4	74.8	77.2	75.3	**74.7**	81.0	82.2	80.6	82.8	**81.7**	**78.2**
3	DBW433	903	70.5	73.2	74.9	77.1	**73.9**	78.1	82.2	80.8	80.2	**80.3**	**77.1**
4	GW557	904	74.7	76.4	80.8	77.1	**77.3**	82.7	84.8	83.5	83.7	**83.7**	**80.5**
5	DBW440	905	71.4	71.9	76.9	74.2	**73.6**	77.3	82.4	81.9	81.8	**80.9**	**77.2**
6	DBW434	906	73.3	75.5	79.0	78.6	**76.6**	80.8	84.1	82.5	83.2	**82.7**	**79.6**
7	PBW903	907	77.3	76.5	78.4	79.7	**78.0**	78.8	82.8	82.3	82.3	**81.6**	**79.8**
8	DBW435	908	76.1	71.9	75.9	78.8	**75.7**	79.5	82.6	81.6	80.9	**81.2**	**78.4**
9	GW322 (C)	909	71.5	72.9	77.5	77.5	**74.9**	79.7	82.8	82.7	83.3	**82.1**	**78.5**
10	MP1399	910	75.2	75.5	79.4	76.2	**76.6**	78.9	84.0	83.0	82.0	**82.0**	**79.3**
11	WH1320	911	74.1	74.3	78.0	78.1	**76.1**	80.3	84.2	82.6	83.3	**82.6**	**79.4**
12	PBW904	912	76.2	75.7	77.5	77.4	**76.7**	79.4	83.9	82.2	83.6	**82.3**	**79.5**
13	HD3464	913	72.9	72.7	73.3	75.3	**73.6**	76.7	78.5	79.1	72.9	**76.8**	**75.2**
14	DBW436	914	75.8	76.4	78.0	80.8	**77.8**	79.5	84.3	83.7	83.7	**82.8**	**80.3**
15	HI1690	915	73.9	75.3	79.2	76.9	**76.3**	82.4	86.6	83.4	85.1	**84.4**	**80.4**
16	RAJ4583	916	76.1	76.4	80.0	77.9	**77.6**	81.8	84.3	82.8	84.6	**83.4**	**80.5**
17	DBW438	917	73.8	72.5	76.4	78.5	**75.3**	80.8	84.4	82.7	81.3	**82.3**	**78.8**
18	BRW3922	918	75.1	72.4	78.1	77.5	**75.8**	77.9	82.5	82.2	80.9	**80.9**	**78.3**
19	HI1691	919	75.0	76.0	78.4	79.0	**77.1**	80.9	83.7	83.4	83.8	**83.0**	**80.0**
20	MP3572	920	78.4	75.9	80.2	80.9	**78.9**	82.7	85.3	85.0	83.2	**84.1**	**81.5**
21	PBW905	921	73.4	71.6	76.0	76.3	**74.3**	77.7	79.8	80.7	79.6	**79.5**	**76.9**
22	HD3461	922	70.9	72.5	74.4	77.2	**73.8**	75.6	81.6	80.0	77.3	**78.6**	**76.2**
23	CG1049	923	71.1	72.4	71.6	74.4	**72.4**	77.2	82.2	80.9	79.6	**80.0**	**76.2**
24	DBW303 (C)	924	74.8	73.3	76.4	79.7	**76.1**	81.1	84.8	83.1	82.8	**83.0**	**79.5**
25	DBW439	925	74.6	75.9	78.4	77.7	**76.7**	80.4	83.1	81.1	82.8	**81.9**	**79.3**
26	DBW437	926	75.5	75.2	78.0	77.8	**76.6**	80.2	82.8	82.1	80.9	**81.5**	**79.1**
27	HD3462	927	72.0	71.2	75.5	76.0	**73.7**	77.4	81.6	80.3	78.6	**79.5**	**76.6**
28	JWS1333	928	72.3	75.2	75.7	74.9	**74.5**	79.7	75.5	79.5	74.7	**77.4**	**75.9**
29	DBW327 (C)	929	75.7	75.9	78.0	80.0	**77.4**	80.5	82.9	82.1	81.9	**81.9**	**79.6**
30	PBW929	930	75.6	71.8	76.8	77.4	**75.4**	79.1	81.8	82.6	80.5	**81.0**	**78.2**
31	HD3463	931	72.6	69.8	74.0	75.0	**72.9**	76.3	82.5	81.3	77.3	**79.4**	**76.1**
32	DBW445	932	71.5	69.8	71.8	74.5	**71.9**	76.9	80.3	79.9	80.4	**79.4**	**75.6**
33	PBW906	933	76.0	78.1	78.3	79.9	**78.1**	79.7	83.1	83.0	81.7	**81.9**	**80.0**
34	WH1321	934	72.8	71.3	73.1	75.8	**73.3**	76.5	78.8	80.0	76.4	**77.9**	**75.6**
35	PBW907	935	73.2	73.9	75.2	77.2	**74.9**	80.3	80.7	81.5	78.7	**80.3**	**77.6**
36	UP3130	936	76.8	76.1	77.8	78.7	**77.4**	81.0	83.9	83.1	83.2	**82.8**	**80.1**
		Mean	**74.1**	**73.9**	**76.8**	**77.4**	**75.6**	**79.4**	**82.6**	**81.9**	**81.1**	**81.3**	**78.4**

Table 45: Grain protein content (%) of *T. aestivum* genotypes in NIVT 6

S.N o	Entry	Code	NWPZ					CZ					Overall mean
			Ludhiana	Delhi	Hisar	Karnal	Mean	Indore	Junagadh	P'kheda	Vijapur	Mean	
1	DBW187 (C)	901	11.7	14.7	13.0	11.0	**12.6**	11.8	13.3	10.7	11.6	**11.9**	**12.2**
2	GW553	902	11.9	13.6	11.4	12.0	**12.2**	10.7	14.1	10.4	11.9	**11.8**	**12.0**
3	DBW433	903	11.1	13.9	12.1	9.9	**11.8**	12.3	11.8	11.0	11.1	**11.6**	**11.7**
4	GW557	904	11.7	12.8	10.9	10.9	**11.6**	11.1	12.5	11.3	10.7	**11.4**	**11.5**
5	DBW440	905	11.6	13.1	11.2	10.5	**11.6**	10.6	11.5	11.1	10.7	**11.0**	**11.3**
6	DBW434	906	11.5	13.9	12.1	10.8	**12.1**	10.8	13.0	11.6	12.3	**11.9**	**12.0**
7	PBW903	907	13.3	14.3	12.7	11.3	**12.9**	12.9	14.3	11.9	12.1	**12.8**	**12.9**
8	DBW435	908	11.8	15.6	12.2	11.1	**12.7**	12.8	13.2	11.9	12.0	**12.5**	**12.6**
9	GW322 (C)	909	12.1	12.9	10.3	11.1	**11.6**	10.1	11.2	11.0	9.5	**10.5**	**11.0**
10	MP1399	910	12.1	13.7	12.2	11.6	**12.4**	11.7	12.4	10.6	11.2	**11.5**	**11.9**
11	WH1320	911	11.3	13.0	11.2	10.5	**11.5**	11.0	13.0	11.6	12.0	**11.9**	**11.7**
12	PBW904	912	12.9	14.1	13.6	11.7	**13.1**	12.1	13.8	11.6	11.9	**12.4**	**12.7**
13	HD3464	913	11.3	13.6	11.7	10.0	**11.7**	13.0	13.1	9.9	12.5	**12.1**	**11.9**
14	DBW436	914	12.3	13.6	12.4	10.5	**12.2**	12.7	12.8	10.9	11.0	**11.9**	**12.0**
15	HI1690	915	11.4	14.5	10.0	12.2	**12.0**	10.5	13.0	10.2	10.5	**11.1**	**11.5**
16	RAJ4583	916	11.0	13.7	12.0	11.3	**12.0**	11.5	13.7	10.7	11.8	**11.9**	**12.0**
17	DBW438	917	12.0	14.4	11.5	10.9	**12.2**	11.4	13.4	11.0	12.1	**12.0**	**12.1**
18	BRW3922	918	12.2	13.6	10.6	11.1	**11.9**	12.6	12.3	11.2	11.0	**11.8**	**11.8**
19	HI1691	919	11.4	13.9	11.8	11.7	**12.2**	11.6	13.5	11.8	11.9	**12.2**	**12.2**
20	MP3572	920	12.7	13.9	11.6	11.2	**12.4**	11.4	12.4	10.9	11.1	**11.5**	**11.9**
21	PBW905	921	12.1	13.5	11.4	10.2	**11.8**	11.9	12.3	10.6	12.1	**11.7**	**11.8**
22	HD3461	922	12.0	13.5	11.4	10.3	**11.8**	12.1	12.3	9.4	11.6	**11.4**	**11.6**
23	CG1049	923	11.5	13.8	12.3	10.3	**12.0**	10.3	12.2	10.8	10.8	**11.0**	**11.5**
24	DBW303 (C)	924	12.8	13.8	11.6	10.5	**12.2**	11.2	12.9	11.0	11.3	**11.6**	**11.9**
25	DBW439	925	11.6	14.2	11.6	11.1	**12.1**	11.3	13.8	11.0	12.1	**12.1**	**12.1**
26	DBW437	926	13.1	13.1	11.6	10.5	**12.1**	10.7	13.1	11.2	11.3	**11.6**	**11.8**
27	HD3462	927	13.1	13.4	11.4	10.8	**12.2**	12.6	12.1	10.6	11.0	**11.6**	**11.9**
28	JWS1333	928	12.4	14.4	12.1	11.0	**12.5**	13.6	14.2	9.5	12.5	**12.5**	**12.5**
29	DBW327 (C)	929	11.0	13.4	10.6	10.1	**11.3**	11.1	11.5	9.6	10.6	**10.7**	**11.0**
30	PBW929	930	12.0	14.2	12.1	10.8	**12.3**	10.9	12.5	11.0	11.0	**11.4**	**11.8**
31	HD3463	931	11.6	13.5	10.8	10.3	**11.6**	10.9	11.9	9.9	12.0	**11.2**	**11.4**
32	DBW445	932	10.8	14.1	13.0	10.3	**12.1**	11.8	13.2	10.8	11.3	**11.8**	**11.9**
33	PBW906	933	11.2	12.7	10.8	10.2	**11.2**	10.3	11.5	9.8	10.1	**10.4**	**10.8**
34	WH1321	934	11.6	14.0	12.8	10.7	**12.3**	11.9	12.2	10.7	12.7	**11.9**	**12.1**
35	PBW907	935	12.0	13.8	12.2	10.6	**12.2**	12.1	13.3	12.1	12.9	**12.6**	**12.4**
36	UP3130	936	10.9	13.4	10.3	10.6	**11.3**	11.5	12.8	10.6	10.7	**11.4**	**11.4**
		Mean	**11.9**	**13.8**	**11.7**	**10.8**	**12.0**	**11.6**	**12.8**	**10.8**	**11.5**	**11.7**	**11.8**

Table 46: Sedimentation value (ml) of *T. aestivum* genotypes in NIVT 6

S.No	Entry	Code	NWPZ					CZ					Overall mean
			Ludhiana	Delhi	Hisar	Karnal	Mean	Indore	Junagadh	P'kheda	Vijapur	Mean	
1	DBW187 (C)	901	56.0	58.0	64.0	66.0	**61.0**	48.0	61.0	41.0	43.0	**48.3**	**54.6**
2	GW553	902	36.0	43.0	36.0	45.0	**40.0**	33.0	62.0	30.0	45.0	**42.5**	**41.3**
3	DBW433	903	54.0	52.0	39.0	50.0	**48.8**	50.0	48.0	43.0	44.0	**46.3**	**47.5**
4	GW557	904	39.0	42.0	44.0	43.0	**42.0**	36.0	48.0	37.0	31.0	**38.0**	**40.0**
5	DBW440	905	57.0	60.0	49.0	53.0	**54.8**	37.0	43.0	43.0	37.0	**40.0**	**47.4**
6	DBW434	906	58.0	52.0	48.0	53.0	**52.8**	37.0	55.0	42.0	50.0	**46.0**	**49.4**
7	PBW903	907	52.0	50.0	44.0	59.0	**51.3**	57.0	63.0	48.0	51.0	**54.8**	**53.0**
8	DBW435	908	48.0	54.0	40.0	53.0	**48.8**	56.0	60.0	48.0	48.0	**53.0**	**50.9**
9	GW322 (C)	909	39.0	43.0	30.0	40.0	**38.0**	30.0	36.0	24.0	23.0	**28.3**	**33.1**
10	MP1399	910	40.0	44.0	38.0	53.0	**43.8**	50.0	55.0	45.0	45.0	**48.8**	**46.3**
11	WH1320	911	52.0	61.0	49.0	64.0	**56.5**	46.0	56.0	47.0	48.0	**49.3**	**52.9**
12	PBW904	912	45.0	42.0	41.0	48.0	**44.0**	49.0	59.0	44.0	48.0	**50.0**	**47.0**
13	HD3464	913	44.0	48.0	42.0	47.0	**45.3**	62.0	63.0	27.0	56.0	**52.0**	**48.6**
14	DBW436	914	45.0	55.0	50.0	59.0	**52.3**	55.0	58.0	40.0	39.0	**48.0**	**50.1**
15	HI1690	915	43.0	50.0	37.0	47.0	**44.3**	27.0	58.0	26.0	28.0	**34.8**	**39.5**
16	RAJ4583	916	42.0	51.0	43.0	48.0	**46.0**	40.0	54.0	31.0	43.0	**42.0**	**44.0**
17	DBW438	917	54.0	49.0	46.0	50.0	**49.8**	47.0	57.0	45.0	48.0	**49.3**	**49.5**
18	BRW3922	918	45.0	55.0	40.0	47.0	**46.8**	57.0	51.0	40.0	36.0	**46.0**	**46.4**
19	HI1691	919	33.0	42.0	35.0	43.0	**38.3**	48.0	59.0	49.0	47.0	**50.8**	**44.5**
20	MP3572	920	53.0	55.0	55.0	60.0	**55.8**	43.0	52.0	41.0	42.0	**44.5**	**50.1**
21	PBW905	921	47.0	52.0	46.0	49.0	**48.5**	50.0	54.0	40.0	50.0	**48.5**	**48.5**
22	HD3461	922	44.0	54.0	44.0	50.0	**48.0**	53.0	56.0	40.0	50.0	**49.8**	**48.9**
23	CG1049	923	51.0	50.0	48.0	48.0	**49.3**	38.0	52.0	40.0	41.0	**42.8**	**46.0**
24	DBW303 (C)	924	48.0	48.0	50.0	54.0	**50.0**	44.0	58.0	40.0	43.0	**46.3**	**48.1**
25	DBW439	925	42.0	61.0	58.0	70.0	**57.8**	42.0	63.0	40.0	49.0	**48.5**	**53.1**
26	DBW437	926	46.0	44.0	40.0	47.0	**44.3**	44.0	58.0	44.0	45.0	**47.8**	**46.0**
27	HD3462	927	52.0	58.0	44.0	62.0	**54.0**	55.0	51.0	33.0	38.0	**44.3**	**49.1**
28	JWS1333	928	37.0	41.0	40.0	44.0	**40.5**	57.0	59.0	32.0	54.0	**50.5**	**45.5**
29	DBW327 (C)	929	43.0	54.0	48.0	57.0	**50.5**	34.0	41.0	31.0	31.0	**34.3**	**42.4**
30	PBW929	930	48.0	53.0	41.0	57.0	**49.8**	45.0	57.0	42.0	44.0	**47.0**	**48.4**
31	HD3463	931	44.0	53.0	40.0	50.0	**46.8**	45.0	53.0	42.0	52.0	**48.0**	**47.4**
32	DBW445	932	53.0	49.0	38.0	45.0	**46.3**	45.0	56.0	42.0	44.0	**46.8**	**46.5**
33	PBW906	933	40.0	51.0	44.0	48.0	**45.8**	29.0	41.0	30.0	26.0	**31.5**	**38.6**
34	WH1321	934	42.0	41.0	41.0	44.0	**42.0**	46.0	29.0	37.0	49.0	**40.3**	**41.1**
35	PBW907	935	58.0	52.0	45.0	59.0	**53.5**	51.0	58.0	50.0	56.0	**53.8**	**53.6**
36	UP3130	936	41.0	47.0	44.0	59.0	**47.8**	46.0	56.0	40.0	42.0	**46.0**	**46.9**
		Mean	**46.4**	**50.4**	**43.9**	**52.0**	**48.2**	**45.3**	**53.9**	**39.3**	**43.5**	**45.5**	**46.8**

Table 47: Phenol test (0-10 scale) of *T. aestivum* genotypes in NIVT 6

S.N o	Entry	Code	NWPZ					CZ					Overall mean
			Ludhiana	Delhi	Hisar	Karnal	Mean	Indore	Junagadh	P'kheda	Vijapur	Mean	
1	DBW187 (C)	901	7.0	6.0	6.0	8.5	**6.9**	7.0	7.0	7.0	7.0	**7.0**	**6.9**
2	GW553	902	6.0	7.0	7.0	7.5	**6.9**	6.5	7.0	7.0	6.5	**6.8**	**6.8**
3	DBW433	903	8.0	6.0	6.0	8.5	**7.1**	7.0	7.0	7.0	7.0	**7.0**	**7.1**
4	GW557	904	5.0	8.0	7.0	4.0	**6.0**	2.0	2.0	2.5	2.0	**2.1**	**4.1**
5	DBW440	905	6.0	6.0	6.0	8.5	**6.6**	7.0	7.0	7.0	6.5	**6.9**	**6.8**
6	DBW434	906	6.0	7.0	7.0	9.0	**7.3**	7.0	7.0	7.0	6.5	**6.9**	**7.1**
7	PBW903	907	7.0	6.0	6.0	9.0	**7.0**	7.0	7.0	6.5	7.0	**6.9**	**6.9**
8	DBW435	908	5.0	6.0	6.0	7.5	**6.1**	7.0	7.0	7.0	6.5	**6.9**	**6.5**
9	GW322 (C)	909	6.0	7.0	7.0	8.0	**7.0**	6.5	6.5	7.0	6.5	**6.6**	**6.8**
10	MP1399	910	8.0	8.0	6.0	5.0	**6.8**	3.5	2.0	3.5	2.5	**2.9**	**4.8**
11	WH1320	911	6.0	6.0	7.0	7.0	**6.5**	7.0	7.0	7.0	6.5	**6.9**	**6.7**
12	PBW904	912	8.0	8.0	6.0	5.0	**6.8**	3.0	3.5	3.0	2.5	**3.0**	**4.9**
13	HD3464	913	7.0	7.0	7.0	5.5	**6.6**	6.5	5.5	6.5	5.0	**5.9**	**6.3**
14	DBW436	914	6.0	6.0	6.0	6.0	**6.0**	7.0	6.5	6.5	5.5	**6.4**	**6.2**
15	HI1690	915	8.0	5.0	6.0	4.5	**5.9**	2.0	3.0	2.5	2.0	**2.4**	**4.1**
16	RAJ4583	916	5.0	8.0	7.0	7.0	**6.8**	7.0	7.0	6.5	6.5	**6.8**	**6.8**
17	DBW438	917	7.0	7.0	6.0	9.0	**7.3**	7.0	7.0	7.0	7.0	**7.0**	**7.1**
18	BRW3922	918	6.0	7.0	7.0	7.5	**6.9**	7.0	7.0	7.0	6.5	**6.9**	**6.9**
19	HI1691	919	5.0	6.0	6.0	7.0	**6.0**	6.5	7.0	6.5	6.5	**6.6**	**6.3**
20	MP3572	920	6.0	5.0	7.0	7.5	**6.4**	7.0	6.5	7.0	6.5	**6.8**	**6.6**
21	PBW905	921	7.0	5.0	6.0	7.0	**6.3**	7.0	7.0	7.0	6.5	**6.9**	**6.6**
22	HD3461	922	6.0	6.0	6.0	5.5	**5.9**	7.0	7.0	7.0	6.5	**6.9**	**6.4**
23	CG1049	923	8.0	7.0	7.0	3.0	**6.3**	2.0	2.0	2.5	2.0	**2.1**	**4.2**
24	DBW303 (C)	924	6.0	8.0	7.0	5.0	**6.5**	7.0	7.0	6.5	6.5	**6.8**	**6.6**
25	DBW439	925	7.0	5.0	6.0	7.5	**6.4**	7.0	7.0	6.5	6.5	**6.8**	**6.6**
26	DBW437	926	8.0	7.0	7.0	4.5	**6.6**	3.0	3.0	3.0	2.5	**2.9**	**4.8**
27	HD3462	927	6.0	7.0	6.0	5.5	**6.1**	7.0	6.0	7.0	6.0	**6.5**	**6.3**
28	JWS1333	928	8.0	6.0	6.0	4.0	**6.0**	4.5	4.0	4.5	4.0	**4.3**	**5.1**
29	DBW327 (C)	929	6.0	7.0	5.0	6.0	**6.0**	6.0	6.5	7.0	6.0	**6.4**	**6.2**
30	PBW929	930	7.0	6.0	6.0	4.5	**5.9**	5.0	5.0	5.0	5.0	**5.0**	**5.4**
31	HD3463	931	7.0	7.0	7.0	6.0	**6.8**	7.0	6.5	7.0	6.0	**6.6**	**6.7**
32	DBW445	932	6.0	5.0	6.0	6.5	**5.9**	7.0	7.0	7.0	6.5	**6.9**	**6.4**
33	PBW906	933	6.0	7.0	6.0	6.5	**6.4**	7.0	6.5	6.5	6.5	**6.6**	**6.5**
34	WH1321	934	7.0	6.0	9.0	7.5	**7.4**	6.5	7.0	7.0	7.0	**6.9**	**7.1**
35	PBW907	935	6.0	6.0	5.0	7.5	**6.1**	7.0	7.0	7.0	7.0	**7.0**	**6.6**
36	UP3130	936	6.0	7.0	6.0	7.5	**6.6**	7.0	7.0	7.0	6.5	**6.9**	**6.8**
		Mean	**6.5**	**6.5**	**6.4**	**6.5**	**6.5**	**6.0**	**6.0**	**6.1**	**5.7**	**5.9**	**6.2**

Table 48: Grain appearance score (Max-10) of *T. aestivum* genotypes in Northern Hills Zone (NHZ) IVTs

S. No.	Entries	Code	Almora	Shimla	Malan	Mean
Rainfed Timely Sown						
1	HS562 (C)	201	6.0	6.0	6.8	**6.3**
2	HPW489	202	6.0	5.8	6.6	**6.1**
3	VL3032	203	6.6	6.6	5.8	**6.3**
4	VL2051	204	6.4	6.2	6.6	**6.4**
5	VL2053	205	5.8	5.6	5.8	**5.7**
6	HS697	206	5.8	6.4	6.4	**6.2**
7	UP3131	207	5.8	6.2	6.2	**6.1**
8	VL892 (C)	208	6.2	6.2	5.8	**6.1**
9	HPW492	209	6.2	6.2	5.8	**6.1**
10	HS699	210	5.6	5.6	5.8	**5.7**
11	HD3466	211	6.0	5.2	6.6	**5.9**
12	VL3031	212	6.0	5.8	6.6	**6.1**
13	SKW368	213	6.4	5.8	6.4	**6.2**
14	VL2052	214	6.4	6.0	6.4	**6.3**
15	HS696	215	6.0	5.6	5.8	**5.8**
16	HPW491	216	6.0	6.4	6.6	**6.3**
17	VL2054	217	5.8	5.2	6.2	**5.7**
18	SKUAW102	218	5.8	6.0	6.2	**6.0**
19	HS695	219	5.2	5.4	5.8	**5.5**
20	UP3134	220	6.8	6.0	7.2	**6.7**
21	SKUAW101	221	5.4	6.0	5.8	**5.7**
21	HPW493	222	5.6	6.2	5.8	**5.9**
23	HPW494	223	6.4	5.8	5.6	**5.9**
24	HS507 (C)	224	6.8	6.0	6.8	**6.5**
25	HS698	225	5.6	5.6	5.6	**5.6**
26	HPW490	226	5.6	5.4	5.4	**5.5**
Mean			**6.0**	**5.9**	**6.2**	**6.0**

Table 49: Hectolitre weight (Kg/hl) of *T. aestivum* genotypes in Northern Hills Zone (NHZ) IVTs

S. No.	Entries	Code	Almora	Shimla	Malan	Mean
Rainfed Timely Sown						
1	HS562 (C)	201	76.7	79.7	81.3	**79.2**
2	HPW489	202	72.7	76.9	79.7	**76.4**
3	VL3032	203	74.1	79.0	76.5	**76.5**
4	VL2051	204	76.6	79.8	78.0	**78.1**
5	VL2053	205	73.3	80.7	76.2	**76.7**
6	HS697	206	74.4	81.6	77.8	**77.9**
7	UP3131	207	67.8	76.9	73.3	**72.7**
8	VL892 (C)	208	74.6	80.2	76.1	**77.0**
9	HPW492	209	71.4	79.7	77.3	**76.1**
10	HS699	210	75.1	79.5	78.6	**77.7**
11	HD3466	211	75.3	79.0	79.0	**77.8**
12	VL3031	212	73.2	79.1	78.2	**76.8**
13	SKW368	213	75.0	81.4	81.8	**79.4**
14	VL2052	214	76.7	78.3	79.1	**78.0**
15	HS696	215	72.2	79.0	75.5	**75.6**
16	HPW491	216	74.2	80.3	79.3	**77.9**
17	VL2054	217	78.4	79.2	81.1	**79.6**
18	SKUAW102	218	69.9	77.4	76.6	**74.6**
19	HS695	219	73.0	80.8	77.5	**77.1**
20	UP3134	220	79.3	79.2	83.0	**80.5**
21	SKUAW101	221	69.0	77.0	73.5	**73.2**
21	HPW493	222	72.4	79.5	77.3	**76.4**
23	HPW494	223	77.4	76.6	79.7	**77.9**
24	HS507 (C)	224	76.6	80.5	81.3	**79.5**
25	HS698	225	70.9	78.2	78.8	**76.0**
26	HPW490	226	71.0	77.7	74.6	**74.4**
Mean			**73.9**	**79.1**	**78.1**	**77.0**

Table 50: Protein content (%) at 12% moisture basis of *T. aestivum* genotypes in Northern Hills Zone (NHZ) IVTs

S. No.	Entries	Code	Almora	Shimla	Malan	Mean
Rainfed Timely Sown						
1	HS562 (C)	201	12.3	9.3	9.9	**10.5**
2	HPW489	202	12.2	9.5	10.4	**10.7**
3	VL3032	203	11.9	10.2	11.1	**11.1**
4	VL2051	204	12.6	9.6	10.5	**10.9**
5	VL2053	205	11.5	9.3	10.8	**10.5**
6	HS697	206	11.3	9.1	10.7	**10.4**
7	UP3131	207	12.5	10.4	10.5	**11.1**
8	VL892 (C)	208	11.8	10.2	12.2	**11.4**
9	HPW492	209	11.9	10.0	11.1	**11.0**
10	HS699	210	13.4	9.6	12.0	**11.7**
11	HD3466	211	12.6	10.0	11.8	**11.4**
12	VL3031	212	11.8	9.7	10.6	**10.7**
13	SKW368	213	12.1	10.0	11.0	**11.0**
14	VL2052	214	10.4	8.0	10.1	**9.5**
15	HS696	215	12.4	9.7	11.4	**11.2**
16	HPW491	216	11.9	9.8	10.6	**10.8**
17	VL2054	217	12.0	10.1	11.7	**11.3**
18	SKUAW102	218	12.7	10.1	10.0	**11.0**
19	HS695	219	11.6	9.6	11.1	**10.8**
20	UP3134	220	11.5	9.6	10.1	**10.4**
21	SKUAW101	221	12.7	10.6	10.6	**11.3**
21	HPW493	222	11.2	9.4	10.8	**10.5**
23	HPW494	223	11.8	9.5	11.1	**10.8**
24	HS507 (C)	224	11.8	10.6	10.7	**11.0**
25	HS698	225	11.8	8.7	10.4	**10.3**
26	HPW490	226	12.2	9.7	11.6	**11.2**
Mean			**12.0**	**9.7**	**10.9**	**10.9**

Table 51: Sedimentation value (ml) of *T. aestivum* genotypes in Northern Hills Zone (NHZ) IVTs

S. No.	Entries	Code	Almora	Shimla	Malan	Mean
Rainfed Timely Sown						
1	HS562 (C)	201	50.7	38.8	53.4	**47.7**
2	HPW489	202	52.7	41.9	49.6	**48.0**
3	VL3032	203	46.5	40.7	48.8	**45.4**
4	VL2051	204	32.3	35.0	50.7	**39.3**
5	VL2053	205	41.1	37.3	45.7	**41.4**
6	HS697	206	34.2	42.7	54.6	**43.8**
7	UP3131	207	44.2	36.1	45.7	**42.0**
8	VL892 (C)	208	38.4	35.7	43.8	**39.3**
9	HPW492	209	40.0	41.1	46.9	**42.7**
10	HS699	210	42.7	36.1	41.9	**40.2**
11	HD3466	211	56.5	35.0	47.7	**46.4**
12	VL3031	212	37.3	38.0	41.9	**39.1**
13	SKW368	213	34.2	46.5	58.1	**46.3**
14	VL2052	214	66.5	40.0	38.0	**48.2**
15	HS696	215	65.8	40.0	45.0	**50.2**
16	HPW491	216	44.6	51.9	61.5	**52.7**
17	VL2054	217	61.5	62.3	65.8	**63.2**
18	SKUAW102	218	45.4	42.7	48.4	**45.5**
19	HS695	219	53.4	46.1	58.8	**52.8**
20	UP3134	220	63.1	46.9	59.2	**56.4**
21	SKUAW101	221	43.8	40.0	45.7	**43.2**
21	HPW493	222	42.7	41.9	46.5	**43.7**
23	HPW494	223	47.7	38.0	45.7	**43.8**
24	HS507 (C)	224	45.7	43.8	45.7	**45.1**
25	HS698	225	38.4	35.0	41.1	**38.2**
26	HPW490	226	46.5	41.1	48.4	**45.4**
Mean			**46.8**	**41.3**	**49.2**	**45.8**

Table 52: Phenol test (Max-10) of *T. aestivum* genotypes in Northern Hills Zone (NHZ) IVTs

S. No.	Entries	Code	Almora	Shimla	Malan	Mean
Rainfed Timely Sown						
1	HS562 (C)	201	7.5	5.5	8.0	**7.0**
2	HPW489	202	4.0	4.0	7.0	**5.0**
3	VL3032	203	4.0	4.5	7.0	**5.2**
4	VL2051	204	3.5	4.5	6.0	**4.7**
5	VL2053	205	9.0	2.5	2.0	**4.5**
6	HS697	206	3.0	3.0	2.5	**2.8**
7	UP3131	207	4.0	5.0	4.5	**4.5**
8	VL892 (C)	208	7.5	5.5	7.0	**6.7**
9	HPW492	209	7.0	5.0	6.5	**6.2**
10	HS699	210	3.0	2.5	3.0	**2.8**
11	HD3466	211	7.5	6.0	7.0	**6.8**
12	VL3031	212	5.5	4.5	5.0	**5.0**
13	SKW368	213	7.0	5.5	7.5	**6.7**
14	VL2052	214	6.5	5.5	7.0	**6.3**
15	HS696	215	3.5	2.5	2.0	**2.7**
16	HPW491	216	7.5	5.5	6.5	**6.5**
17	VL2054	217	6.5	5.0	6.0	**5.8**
18	SKUAW102	218	6.5	5.0	6.0	**5.8**
19	HS695	219	6.5	4.5	6.5	**5.8**
20	UP3134	220	6.0	4.5	5.0	**5.2**
21	SKUAW101	221	6.0	5.0	6.0	**5.7**
22	HPW493	222	7.0	4.0	6.5	**5.8**
23	HPW494	223	7.0	4.0	6.0	**5.7**
24	HS507 (C)	224	5.0	4.0	4.5	**4.5**
25	HS698	225	3.5	3.5	3.0	**3.3**
26	HPW490	226	9.0	6.0	8.5	**7.8**
Mean			**5.9**	**4.5**	**5.6**	**5.3**

Summary

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 data on various quality traits 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 2022-23, 146 entries of AVTs, 280 of NIVTs, 13 of HYPT and 26 of IVT were analysed from centres representing different 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, test weight, protein, sedimentation value, yellow pigment, phenol test, grain hardness index, iron and zinc content and HMWGS profiles. Promising product specific entries identified are given below.

Promising *T. aestivum g*enotypes for chapati (Score >8.0)

Category	Genotypes
Check	DBW222 (C) (NEPZ-ITS), HI1650(I) (C) (CZ-ITS), MACS6768(I) (C) (CZ-ITS), HI1636 (C) (CZ-ITS), CG1036(I) (C) (CZ-RITS)
AVT	HD3388* (NEPZ-ITS), GW547* (CZ-ITS), CG1040*(CZ-RITS)

Promising *T. aestivum g*enotypes for bread (Loaf volume ~590 ml)

Category	Genotypes
Check	DBW296 (C) (NWPZ-RITS) , HI1654(I) (C) (NWPZ-RITS), HD2967 (C) (NEPZ-ITS)
AVT	WH1402* (NWPZ-RITS)

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

Category	Genotypes
Check	DBW296 (C) (NWPZ-RITS), HI1654(I) (C) (NWPZ-RITS), NIAW3170 (C) (NWPZ-RITS), NIAW3170 (C) (PZ-RITS)
AVT	NIL

Promising Genotypes for Various Quality Parameters

Parameter	Value	Genotypes
(*T. aestivum*)		
Protein	≥12.5%	**NHZ** : NIL **NWPZ**: DBW173 (C), HD3059 (C), PBW771 (C), K2108, PBW893, HD3428, **NEPZ:** NIL **CZ** : GW547*, MP3557, **PZ** : MP1378*, DBW187 (C), MACS6222 (C), PBW891, NIAW4153, HD3469, AKAW5100, DBW444, WH1306, MACS6809, AKAW5314, NIAW4183, PWU15, UAS3021, MP1386, NWS2222, DBW443, HD3090 (C), HD2932 (C), RAJ4083 (C), HI1633 (C), MP1388, GW538, DBW395, MACS6805, HI1672, HI1674, LOK79, HI1675, UAS3022, MP3557, NIAW4120, GW542, MP3556, PBW897, WH1310, HI1673, MACS6814, NIAW4114, DBW394, NIAW4028*, DBW359*, HI1665*, NIAW3170 (C), HI1605 (C), DBW397 **HYPT (NWPZ):** DBW187 (C), DBW372(I) (C), DBW380 **HYPT (CZ):** NIL
Sedimentation value	> 60 ml	**NHZ** : NIL **NWPZ** : HD2967 (C), DBW187 (C), HD3086 (C), DBW222 (C), HD3470, UP3102, PBW887, HI1668, PBW889, HD3471, DBW173 (C), HD3059 (C), K2108, WH1402*, HI1654(I) (C), HD3369(I) (C), HI1653(I) (C), WH1311, DBW397, DBW398, **NEPZ** : HD3388*, PBW826(I) (C), DBW187 (C), HD3086 (C), DBW222 (C), HD2967 (C), HD3249 (C), HD3471, HD3470, DBW386, HI1612 (C), HD3171 (C), DBW252 (C) **CZ** : NWS2194*, MP3557, **PZ:** PBW891, HD3469, UAS3020, WH1306, MP3557, MP3556, PBW897, DBW394, NIAW4028*, DBW359*, HI1605 (C), **HYPT (NWPZ):** DBW187 (C), DBW303 (C), DBW380 **HYPT (CZ):** NIL
Hardness Index	< 35	**NHZ** : VL2041(I) (C) **NWPZ** : DBW296 (C), HI1654(I) (C), NIAW3170 (C), **NEPZ:** NIL **CZ:** NIL **PZ:** NIL **HYPT:** NIL
Iron	≥40ppm	**NHZ** : VL892 (C), VL3028, HPW484, HS691 HS692, **NWPZ :** HD3386*, PBW889, PBW893, HD3428, DBW296 (C), HD3369(I) (C), DBW397, **NEPZ** : HD3086 (C), HD3249 (C), HI1612 (C), HD3171 (C), K1317 (C), HD3293 (C), DBW252 (C), DBW398, **CZ** : HI1675, DBW359*, DBW441, **PZ** : MP1378*, PBW891, HD3469, DBW444, UAS3020, WH1306, MACS6809, MP1386, RAJ4083 (C), HI1633 (C), GW538, MACS6805, HI1672, HI1674, AKAW5104, LOK79, HI1675, UAS3022, NIAW4120, MP3556, HI1673, MACS6814, NIAW4114, HI1665*, DBW397, **HYPT (NWPZ):** DBW371(I) (C), DBW380 **HYPT (CZ):** NIL
Zinc	≥40ppm	**NHZ** : HS692 **NWPZ** : HD3386*, HD2967 (C), HD3086 (C), PBW826(I) (C), HD3470, UP3102, PBW887, DBW386, PBW889, DBW173 (C), HD3059 (C), JKW261 (C), PBW771 (C), K2108, PBW893, HD3428, PBW644 (C), NIAW3170 (C), DBW397, DBW398 **NEPZ**: NIL

		CZ : GW547*, MACS6768(I) (C), GW322 (C), HI1669, UAS3020, HI1670, CG1029 (C), MP4010 (C), HI1634 (C), HI1674, HI1673, HI1675, MP3557, AKAW5104, **PZ** : MP1378*, MACS6222 (C), HD3469, AKAW5100, DBW444, MACS6809, PWU15, MP1386, DBW443, HD2932 (C), RAJ4083 (C), HI1633 (C), MP1388, GW538, DBW395, MACS6805, HI1672, HI1674, UAS3023, AKAW5104, HI1675, UAS3022, MP3557, MP3556, MP3556, WH1310, HI1673, MACS6814, NIAW4114, DBW394, NIAW4028* , DBW359* , HI1665* , NIAW3170 (C), HI1605 (C), DBW397, **HYPT (NWPZ):** PBW872(I) (C), DBW371(I) (C), DBW187 (C), DBW187 (C), DBW370(I) (C), DBW303 (C), DBW380 **HYPT (CZ):** NIL
(*T. durum*)		
Protein	>13.0%	**PZ** : UAS481(d),
Sedimentation value	≥ 40ml	**PZ :** MACS3949(d) (C), UAS478(d)*, UAS446(d) (C), DDW61(d)
Yellow Pigment	>7.0ppm	**PZ:** UAS478(d)*, UAS481(d), DDW61(d)
Iron	≥ 40ppm	**PZ :** HI8840(d)*, NIDW1149(d) (C)
Zinc	≥ 40ppm	**PZ :** MACS4100(d)(I) (C), MACS3949(d) (C), HI8826(d)(I) (C), HI8841(d), UAS478(d)*, HI8840(d)*, NIDW1149(d) (C), UAS446(d) (C), UAS481(d), DDW61(d)

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

Parameter	NWPZ	NEPZ	CZ	PZ	NHZ	Overall
GAS (Max. 10.0)	5.9 (5.4-6.4)	5.7 (5.5-6.0)	7.2 (6.3-8.1)	6.2 (5.6-7.1)	5.9 (5.5-6.2)	**6.19 (5.4-8.1)**
Hectolitre Weight (kg/hl)	75.93 (73.1-79.1)	74.95 (71.5-77.3)	80.36 (77.5-83.5)	79.5 (75.4-79.5)	77.4 (75.2-79.1)	**77.63 (71.5-83.5)**
Protein content (%)	11.93 (10.8-14.0)	11.3 (10.8-12.1)	11.63 (10.8-13.0)	13.3 (11.7-15.0)	10.8 (9.7-11.9)	**11.79 (9.7-15.0)**
Sedimentation value (ml)	60.3 (40-70)	63.5 (52-70)	50.33 (40-69)	54 (39-67)	45 (39-56)	**54.63 (38-70)**
Grain hardness index	63.66 (29-81)	61 (49-77)	79.67 (70-91)	78.67 (38-90)	65.2 (27.7-83.6)	**69.64 (27.7-91)**
Iron (ppm)	38.9 (34.7-42.3)	40.85 (36.2-46.6)	38.2 (34.1-43.4)	39.8 (34.3-44.6)	39.6 (35.3-41.9)	**39.47 (34.1-46.6)**
Zinc (ppm)	41.2 (32.9-50.7)	30 (26-36.8)	39.87 (35.5-45)	41.8 (32.3-48.5)	35.2 (30.6-40.2)	**37.61 (25.9-45.2)**
Wet gluten (%)	25.6 (21.7-28.3)	24 (22.7-25.8)	29.45 (24.8-33.3)	32.95 (30-37.8)	-	**28 (21.7-37.8)**
Dry gluten (%)	8.6 (7.5-9.5)	8.3 (7.9-8.8)	9.75 (8.5-11.3)	11.15 (10.5-13.1)	-	**9.45 (7.5-13.1)**

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

Parameter	PZ	Overall
Grain Appearance score (Max. 10.0)	6.45 (5.6-7.1)	**6.45 (5.6-7.1)**
Hectolitre Weight (kg/hl)	81.4 (79.2-83.1)	**81.4 (79.2-83.1)**
Protein content (%)	12.45 (11.5-13.2)	**12.45 (11.5-13.2)**
Sedimentation value (ml)	36.5 (26-45)	**36.5 (26-45)**
Grain hardness index	91.5 (78-98)	**91.5 (78-98)**
Iron (ppm)	38.15 (36-40.2)	**38.15 (36-40.2)**
Zinc (ppm)	42.15 (40.1-45.5)	**42.15 (40.1-45.5)**
Yellow pigment (ppm)	6.63 (5.92-7.62)	**6.63 (5.92-7.62)**

Average values of different quality parameters in NIVT Trials
T. aestivum

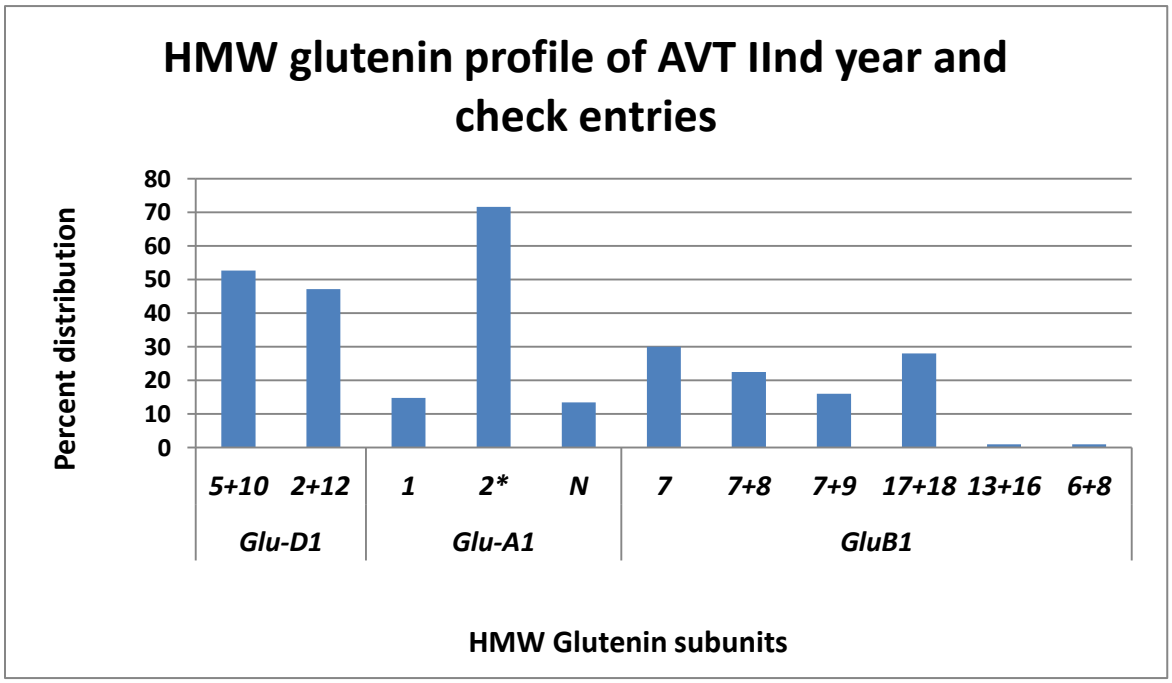
Trial	Zone	Condition	Grain Appearance Score (Max 10)	Hectolitre Weight (Kg/hl)	Protein (%)	Sedimentation value (ml)	Phenol test (Max 10)
NIVT 1A	NWPZ	IR-TS	5.7	75.3	11.3	47.3	5.3
NIVT 1A	NEPZ	IR-TS	5.7	72.0	11.8	50.7	5.2
NIVT 1A	**Overall**	**IR-TS**	**5.7**	**74.5**	**11.3**	**48.1**	**5.3**
NIVT 1B	NWPZ	IR-TS	6.0	74.6	11.8	50	6.3
NIVT 1B	NEPZ	IR-TS	6.2	71.8	11.9	50.1	6.3
NIVT 1B	**Overall**	**IR-TS**	**6.1**	**73.5**	**11.8**	**50**	**6.3**
NIVT 2	CZ	IR-TS	5.3	81.5	11.9	45.7	5.7
NIVT 2	PZ	IR-TS	5.1	81.6	12.2	48.8	5.9
NIVT 2	**Overall**	**IR-TS**	**5.2**	**81.5**	**12.0**	**47**	**5.8**
NIVT 3A	NWPZ	IR-LS	5.7	74.2	12.3	54.8	6.5
NIVT 3A	NEPZ	IR-LS	5.4	73.9	11.2	56.5	6.9
NIVT 3A	**Overall**	**IR-LS**	**5.6**	**74.1**	**11.9**	**55.5**	**6.6**
NIVT 3B	CZ	IR-LS	6.3	76.8	11.7	49.7	6.1
NIVT 3B	PZ	IR-LS	6.2	77.3	11.4	48.0	5.5
NIVT 3B	**Overall**	**IR-LS**	**6.2**	**77.0**	**11.5**	**49**	**5.8**
NIVT 5A	NWPZ	RI-TS	5.7	74.3	11.4	52.2	5.5
NIVT 5A	NEPZ	RI-TS	5.6	74.3	11.5	56.5	7.0
NIVT 5A	**Overall**	**RI-TS**	**5.7**	**74.3**	**11.5**	**54.1**	**6.2**
NIVT 6	NWPZ	IR-ES	6.2	75.6	12.0	48.2	6.5
NIVT 6	CZ	IR-ES	5.5	81.3	11.7	45.5	5.9
NIVT 6	**Overall**	**IR-ES**	**5.8**	**78.4**	**11.8**	**46.8**	**6.2**

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-LS	5.6	78.1	12.4	39.7	1.5	5.0
NIVT 4	PZ	IR-LS	5.7	79.1	11.3	36.4	1.2	4.8
NIVT 4	**Overall**	**IR-LS**	**5.6**	**78.5**	**11.9**	**38.3**	**1.4**	**4.9**
NIVT 5B	CZ	RI-TS	7.0	82.7	11.3	39.0	8.7	5.3
NIVT 5B	PZ	RI-TS	6.9	80.9	13.2	42.2	4.5	5.8
NIVT 5B	**Overall**	**RI-TS**	**6.9**	**82.0**	**12.1**	**40.4**	**6.9**	**5.5**

High Molecular Weight Glutenin subunits (HMW-GS) of *T. aestivum*

Seventy-four (74) 2nd year AVT and HYPT entries including checks were evaluated for HMWS composition from various sowing conditions of different zones of the country. Subunit 5+10 was present in 52.7 % of the total entries whereas 2+12 in 47.2 % entries, indicating greater frequency of 5+10 subunits in all the zones. Subunits 1, 2* and N were present in 14.8 %, 71.6 % and 13.5 % of the total entries, respectively. The subunits 7, 7+8, 7+9, 17+18, 13+16 and 6+8 were present in 35 %, 17.5 %, 16 %, 28 %, 1% and 1 %, respectively. Subunit 7 was present in greater frequency across all zones. The percent entries having Glu-1 score 4, 5, 6, 7, 8, 9 and 10 were 1, 1, 19, 12, 40.5, 2.7 and 23, respectively. Maximum entries had score of 8 and 10.



Wheat Grading Standards proposed for improving Indian wheat quality for export and domestic trade

Proposed by: ICAR-IIWBR, Karnal

India is the IInd largest producer of wheat in the world and has the potential to export large quantity of wheat. Three species of wheat namely bread wheat, durum wheat and dicoccum wheat are grown in India. Bread wheat is cultivated in more than 95% of the area of the cultivated wheat across the country, durum (*kathia or macaroni wheat*) wheat is grown in around 4% area and mostly confined in central and peninsular parts and dicoccum (*khapli wheat)* is grown in very less area confined to Karnataka and some parts of Maharashtra. Bread wheat is used mainly for chapati, bread, biscuit, cakes and noodles while durum is used for pasta products and dicoccum for some local products. Hard amber wheat with medium strong gluten is used for chapati; hard wheat with high protein content and strong and extensible gluten for bread and soft wheat with low protein and weak gluten for biscuit and cakes. However each class has some common features for trading and accordingly grades can be made. There is a need to have grades for different classes of wheat for both domestic and international trade as well as procurement by Government agencies.

High quality wheat (Grade I) should fetch a premium price and the subsequent grades should fetch correspondingly lower price or MSP. Premium price for high quality wheat will boost the export demand as well as domestic production. Farmers, if produce high quality wheat based on the demand and selling at premium can earn more profit than selling the '*dara*' wheat (pooled produce irrespective of quality) at the support price. This will enhance the market share of Indian wheat in the international market besides staying ahead of international competitors. The grades are proposed in the tables below keeping into account the specifications developed by Agmark, FCI, FSSAI and Codex and requirements of domestic and international market. In addition, premium may be given to hard wheat with high protein content (>12.0 %) for better bread quality required by the baking industry. Similarly, durum wheat with high protein content (>12.5 %) and high yellow pigment (>7 ppm) should be given premium price to attract farmers for cultivation of high quality wheat for different products. In addition, farmers should be encouraged to produce disease and weed free wheat with high hectolitre weight and taking care while harvesting and threshing to have minimum amount of broken shrivelled and foreign matter. This will have impact on production of good quality wheat and farmers profit as well as consumers acceptance. Details of grades are given in the tables below followed by definitions of each parameter. Apeda a government agency for export of food items can use the criteria of grades mentioned below for export purposes.

Table 1: Bread wheat grading

S. no.	Grading standard	Grades				
		I	II	III	IV	V
1	Hectolitre Weight (Kg/hl) (Minimum)	76	74	72	70	68
2	Moisture content (%) (Maximum)	12	13	14	15	15
3	Foreign Matter (FM) (%)(Maximum)	0.5	0.8	1.5	3	6
4	Other Food Grain (OFG) (%)(Maximum)	0.5	1	2	3	5
5	Damaged Grains (DG) (%)(Maximum)	2	4	7	10	15
6	Shrivelled/Shrunken (%)(Maximum)	3	5	8	12	20
7	Weevilled Grains (WG) (%)(Maximum)	0.0	1	3	5	10
8	Other wheat grains (Maximum)	1	3	10	10	10
9	Ergot (%)(Maximum)	0.0	0.5	0.5	0.5	0.5
10	Karnal Bunt (Maximum)	0.0	0.0	1.0	3.0	3.0

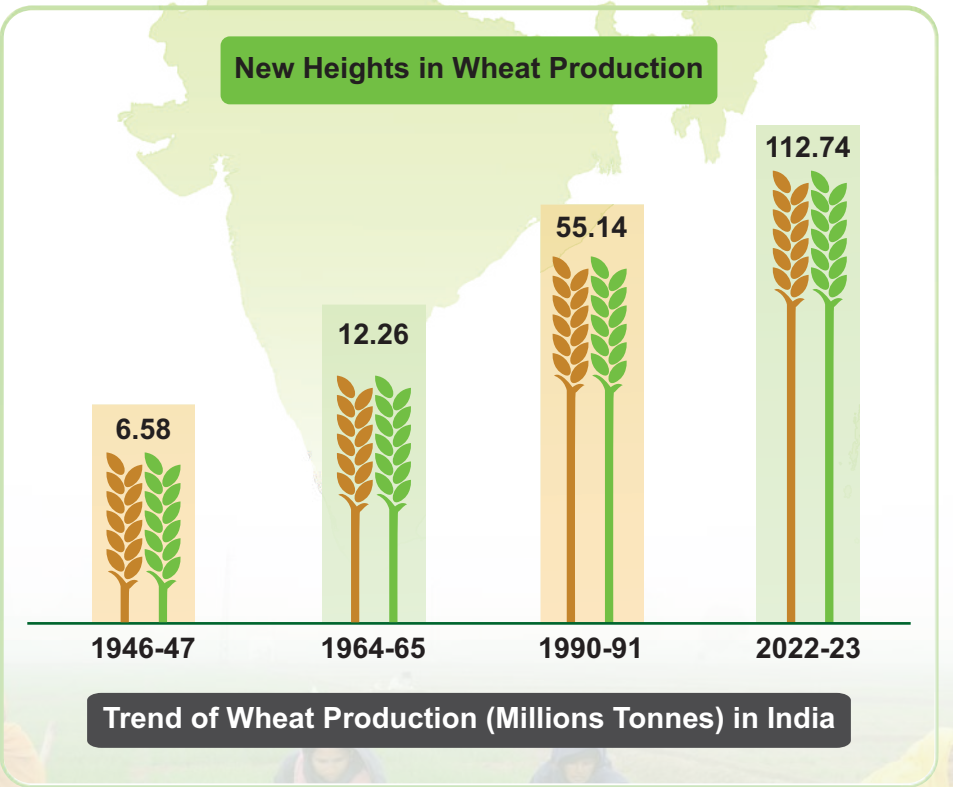
Table 2: Durum wheat grading

S. No.	Grading standard	Grades				
		I	II	III	IV	V
1	Hectolitre Weight (Kg/hl) (Minimum)	78	76	74	72	68
2	Moisture content (%)(Maximum)	12	13	14	15	15
3	Foreign Matter (FM) (%)(Maximum)	0.5	0.8	1.5	3	6
4	Other Food Grain (OFG) (%)(Maximum)	1	2	3	4	5
5	Damaged Grains (DG) (%)(Maximum)	2	3	5	7	10
6	Shrivelled/Shrunken (%)(Maximum)	3	4	6	8	10
7	Insect bored Grains (IBG) (%)(Maximum)	0.0	2	4	7	10
8	Other wheat grains (%)(Maximum)	1	2	4	7	10
9	Ergot (%)(Maximum)	0.0	0.5	0.5	0.5	0.5
10	Yellow pigment (ppm) (Minimum)	7	6	5	4	4

Definitions:

1. **Hectolitre weight:** Hectolitre weight is the weight of a specific volume of grain and is an indication of the bulk density of the grain. It determines the plumpness of the grain and is related to flour yield.
2. **Moisture (%):** Moisture content is important in storage where < 12% moisture is required for long term storage.
3. **Foreign matter**: It includes, dust, stones, lumps of earth, chaff, stem of straw and any other impurity including non-edible seeds.
4. **Other Food Grains**: Edible foodgrains other than wheat.
5. **Damaged Grains**: Grains that are internally damaged or discoloured, damage and discolouration materially affecting the quality.
6. **Immature, Shrivelled, broken grains**: Immature and shrivelled grains are those that are not properly & broken grains developed. Broken grains are pieces of whole grains.

7. **Weevilled Grains/ Insect bored Grains**: Grains that are partially or wholly bored or eaten by weevil or other grain insects.
8. **Other Wheat grains:** For this purpose wheat would be divided into two classes – (1) Durum or Macroni wheat and (2) Vulgare or common wheat; Durum again would be sub-divided into two groups (i) amber and (ii) red ; and Vulgare would be sub-divided in to three groups – (i) white (ii) amber and (iii) red.
9. **Ergot (%)**: Ergot is a plant disease caused by the fungus *Claviceps purpurea*, which infects the developing grains of cereals and grasses. Ergot infected kernels adversely affects grain quality and also causes a disease in humans.
10. **Yellow pigment (Durum)**: Yellow colour in durums imparts attractive appearance to the pasta products and therefore majority of the pasta consumers prefer the yellow pigment.
11. **Karnal Bunt (Aestivum**): Karnal bunt a disease of wheat caused by the pathogen *Tilletia indica* is soil and seed borne which pose a serious quarantine problem and decrease in quality of grains by imparting a fishy odour and taste to the wheat and thus interferes with wheat trade.



62वीं अखिल भारतीय गेहूँ एवं जौ अनुसंधान कार्यकर्ता गोष्ठी

महाराणा प्रताप कृषि एवं प्रौद्योगिकी विश्वविद्यालय, उदयपुर, राजस्थान

(अगस्त 28-30, 2023)

62nd All India Wheat and Barley Research Worker's Meet-2023

Maharana Pratap University of Agriculture and Technology (MPUAT),Udaipur, Rajasthan

(August 28-30, 2023)