

## RESOURCE MANAGEMENT

Resource Management group of AICRP Wheat and Barley are engaged in agronomic evaluation of new genotypes and for updating the package and practices under different agro climatic conditions. Input management *viz.* Nutrients and water under resource scarce conditions, sowing timings in different zones under changing climatic conditions, micro nutrient supply, nano fertiliser application and other crop management practices for yield maximisation are the priority researchable areas in barley agronomy. In spite of the fact that the crop is being grown mostly on fringe and problematic lands, the productivity increased during recent years and the newly developed improved technologies contributes in the increased productivity.

The details of the trials (proposed and conducted) are reported in Table 1. A total of 54 trials were proposed and conducted at different locations and 53 were reported, one trial was rejected by monitoring team.

**Details of barley trials proposed and conducted during 2021-22**

Trial Name	Number of trials			
	Proposed locations	Not conducted/ Failed	Data Received	Data Reported
<b>AVT trials</b>				
Nitrogen Levels x Sowing time x Varieties (NEPZ)	3	1	2	2
<b>Special trials</b>				
Date of sowing (NWPZ, NEPZ, CZ NHZ)	11	-	11	11
N and Zn scheduling (NWPZ)	5	-	5	5
Yield Maximisation (NWPZ, NEPZ, CZ NHZ)	10	-	10	10
Nano fertiliser application (NWPZ)	5	-	5	5
Zn application x varieties (NWPZ, NEPZ, CZ, NHZ)	11	-	11	11
Irrigation levels and silicon (NWPZ, CZ)	4	-	4	4
Method of sowing x Seed rate (NWPZ)	5	-	5	5
<b>Total</b>	<b>54</b>	<b>1</b>	<b>53</b>	<b>53</b>

### **Response of new barley genotypes to different N levels and production conditions (NEPZ)**

The trial was conducted at Varanasi and Kanpur. The test entry PL 917 (33.44 q ha<sup>-1</sup>) was inferior to recently released checks; it produced 15.8 % less as compared to best Check DWRB137 (Table 1). The genotypes responded up to 75 kg Nitrogen/ha. Similarly in date of sowing, trial, the new genotypes produced less (11.1%) compared to best check DWRB137 and in late sowing, the production reduced by 14.4% (Table 1a).

Table 1	AVT NEPZ				POOLED		2021-22	
	N levels x Varieties							
Code/Varieties	N (Kg ha <sup>-1</sup> )							
	45		60		75		Mean	
	Yld.	Rk.	Yld.	Rk.	Yld.	Rk.	Yld.	Rk.
	<b>Yield, q/ha</b>							
V1 PL917	30.74	3	33.93	2	35.64	3	33.44	3
V2 DWRB137	33.29	1	37.91	1	41.72	1	37.64	1
V3 HUB113	31.48	2	32.07	3	37.67	2	33.74	2
MEAN	31.84		34.64		38.34		34.94	
CD (0.05)	N(A)		Varieties (B)		B within A		A within B	
	1.42		1.25		NS		NS	
	<b>Earhead/ m<sup>2</sup></b>							
V1 PL917	298	2	320	3	320	2	313	2
V2 DWRB137	293	3	326	1	305	3	308	3
V3 HUB113	317	1	326	2	349	1	331	1
MEAN	417		433		442		430	
CD (0.05)	N(A)		Varieties (B)		B within A		A within B	
	9.79		15.1		NS		NS	
	<b>Grains/Earhead</b>							
V1 PL917	35.21	3	36.38	3	38.16	2	36.58	3
V2 DWRB137	36.68	1	38.19	1	42.71	1	39.20	1
V3 HUB113	36.63	2	37.11	2	37.92	3	37.22	2
MEAN	36.17		37.23		39.60		37.67	
CD (0.05)	N (A)		Varieties (B)		B within A		A within B	
	1.22		NS		NS		NS	
	<b>1000 Grain Weight, g</b>							
V1 PL917	41.18	1	41.98	1	41.70	1	41.62	1
V2 DWRB137	38.64	2	41.74	2	40.91	2	40.43	2
V3 HUB113	37.61	3	40.18	3	40.00	3	39.26	3
MEAN	39.14		41.30		40.87		40.44	
CD (0.05)	N (A)		Varieties (B)		B within A		A within B	
	0.69		1.06		NS		NS	

Centres: Kanpur, Varanasi

Table 1a	AVT NEPZ				Pooled		2021-22	
	DOS x Varieties							
Varieties	Sowing Time							
	Timely		Late				Mean	
	Yld.	Rk.	Yld.	Rk.	Yld.	Rk.	Yld.	Rk.
	<b>Yield, q/ha</b>							
V1 PL917	33.93	2	29.64	3	31.79	2	31.79	2
V2 DWRB137	37.91	1	32.04	1	34.97	1	34.97	1
V3 HUB113	32.07	3	29.70	2	30.89	3	30.89	3
MEAN	34.64		30.46		32.55		32.55	
CD (0.05)	S (A)		Varieties (B)		B within A		A within B	
	2.23		1.05		1.49		NS	
	<b>Earhead/ m<sup>2</sup></b>							
V1 PL917	320	3	336	2	328	3	328	3
V2 DWRB137	326	1	335	3	331	2	331	2
V3 HUB113	326	2	343	1	334	1	334	1
MEAN	324		338		331		331	
CD (0.05)	S (A)		Varieties (B)		B within A		A within B	
			NS		NSNSNS			

<b>Grains/Earhead</b>							
V1 PL917	36.38	3	31.36	3	33.87	3	
V2 DWRB137	38.19	1	31.66	2	34.93	2	
V3 HUB113	37.11	2	34.42	1	35.77	1	
MEAN	37.23		32.48		34.85		
CD (0.05)	S (A)	Varieties (B)	B within A	A within B			
					1.33NSNSNS		

<b>1000 Grain Weight, g</b>							
V1 PL917	41.98	1	41.18	1	41.58	1	
V2 DWRB137	41.74	2	38.57	2	40.16	2	
V3 HUB113	40.18	3	35.03	3	37.60	3	
MEAN	41.30		38.26		39.78		
CD (0.05)	S (A)	Varieties (B)	B within A	A within B			
		1.15	1.02	1.45	NS		

**Centres:** Kanpur, Varanasi

### Location Wise Data

**Table 1.1 Response of new genotypes to Nitrogen levels**

**Varanasi**

N Levels, kg/ha								
Varieties	N45	Rank	N60	Rank	N75	Rank	Mean	Rank
V1 PL917	25.25	3	27.10	3	32.03	3	28.13	3
V2 DWRB137	27.33	2	30.53	1	35.13	2	31.00	2
V3 HUB113	28.23	1	30.33	2	36.70	1	31.76	1
MEAN	26.94		29.32		34.62		30.29	
		F. Test	S.E.m	C.D.	C.V.(%)			
N levels	(A)	**	0.092	0.28	0.91			
Varieties	(B)	**	0.23	0.59	2.33			
B within A		N.S.	0.41	1.03				
A within B			0.34	0.87				

**Kanpur**

Varieties	N45	Rank	N60	Rank	N75	Rank	Mean	Rank
V1 PL917	36.23	2	40.76	2	39.25	2	38.74	2
V2 DWRB137	39.25	1	45.28	1	48.30	1	44.28	1
V3 HUB113	34.72	3	33.81	3	38.64	3	35.72	3
MEAN	36.73		39.95		42.06		39.58	
		F. Test	S.E.m	C.D.	C.V.(%)			
N levels	(A)	N.S.	1.17	3.52	8.84			
Varieties	(B)	**	0.92	2.32	6.99			
B within A		N.S.	1.60	4.02				
A within B			1.75	4.41				

<b>Table 1a.1 Response of new genotypes to Production conditions</b>						
			Date of sowing		<b>Varanasi</b>	
Varieties	Normal	Rank	Late	Rank	Mean	Rank
V1 PL917	27.1	3	24.57	3	25.83	3
V2 DWRB137	30.53	1	26.33	2	28.43	2
V3 HUB113	30.33	2	27.70	1	29.02	1
MEAN	29.32		26.20		27.76	
		F. Test	S.E.m	C.D.	C.V.(%)	
Sowing date	(A)	**	0.17	0.72	1.87	
Varieties	(B)	**	0.28	0.75	2.51	
B within A		N.S.	0.40	1.06		
A within B			0.37	0.98		
<b>Kanpur</b>						
Varieties	Normal	Rank	Late	Rank	Mean	Rank
V1 PL917	40.76	2	34.72	2	37.74	2
V2 DWRB137	45.28	1	37.74	1	41.51	1
V3 HUB113	33.81	3	31.70	3	32.76	3
MEAN	39.95		34.72		37.33	
		F. Test	S.E.m	C.D.	C.V.(%)	
Date of sowing	(A)	N.S.	1.47	6.07	11.81	
Varieties	(B)	**	0.80	2.11	5.27	
B within A		N.S.	1.14	2.99		
A within B			1.74	4.57		