

Activity 2.5.1.3-Conduct of multi-location barley international trials in target regions

Multilocation barley international trials for spring barley under low and high input environments have been conducted in Morocco, Lebanon and India. Another set of winter barley trials were conducted at Ankara, in Turkey. More than 410 genotypes (320 hulled and 90 hulless types) were evaluated in advanced yield trials at three test sites i.e. Marchouch (Morocco), Amlaha (India) and Terbol (Lebanon). Nine new genotypes having higher grain yield than best checks have been identified (Table 2.2) across the two environments. However, at individual locations a large number of genotypes (35 at Terbol and 13 at Marchouch) were identified superior to the best checks.

Table 2.2: Highly promising barley genotypes identified in evaluation under high input program 2015-16.

No.	Entry No.	Cross name	TER	RK	MCH	MCH	Mean	RK
1	HIBYT-16-10-(18)	SVANHALS-BAR/MSEL//AZAF/GOB24DH/3/NE167/CLE176	10547	2	5600	37	8073.5	1
2	HIBYT-16-10-(1)	ATACO/BERMEJO//HIGO/3/CALI92/ROBUST /4/PETUNIA 1 /5/PETUNIA1/CHINIA/3/ATACO/BERMEJO//HIGO/6/ ZIGZIG/3/M9846 // CCXX14.ARZ3/PACO	9223	31	6025	11	7624	4
3	HIBYT-16-1-(24)	P.STO/3/LBIRAN/UNA80//LIGNEE640/4/BLLU/5/ PETUNIA 1/6/CHAMICO/TOCTE//CONGONA	9155	33	5950	15	7552.5	7
4	HIBYT-16-1-(30)	P.STO/3/LBIRAN/UNA80//LIGNEE640/4/BLLU/5/PETUNIA 1/6/P.STO/3/LBIRAN/UNA80//LIGNEE640/4/BLLU/5/ PETUNIA 1	8917	39	6075	9	7496	8
5	HIBYT-16-10-(3)	VMorales/6/ZIGZIG/4/EGYPT4/TERAN78// P.STO/3/QUINA	9248	28	5625	35	7436.5	11
6	HIBYT-16-2-(21)	BLLU/6/P.STO/3/LBIRAN/UNA80//LIGNEE640 /4/ BLLU /5/PETUNIA 1	8882	41	5625	36	7253.5	17
7	HIBYT-16-10-(31)	LA MOLINA 96/6/VMorales	8703	53	5675	29	7189	22
8	HIBYT-16-3-(29)	CHAMICO/TOCTE//CONGONA/6/P.STO/3/LBIRAN/UNA80 //LIGNEE640/4/BLLU/5/PETUNIA 1	9055	34	5313	68	7184	23
9	HIBYT-16-10-(26)	LBIRAN/UNA80//LIGNEE640/6/VMorales	8832	45	5500	47	7166	25
10	HIBYT-16-3-(36)	Rihane-03	8475	65	5300	71	6887.5	42
11	HIBYT-16-1-(37)	V Morales	8103	102	5475	51	6789	53

TER=Terbol, Lebanon, MCH=Marchouch, Morocco, RK=Rank in the trial

A total of 504 promising genotypes were contributed for constituting the International trials/nurseries of 2018-19, (to be multiplied in 2016-17 season at Lebanon) including hulled and hulless types in spring and winter barley types for low and high input environments.

Crop	No of lines multiplied
Low input barley	149
High input barley	161
Huskless barley	31
Winter barley*	163
Total	504

Publications:

3. V. Kumar, A. S. Kharub, **R. P. S. Verma** and Ajay Verma. 2016. AMMI, GGE biplots and regression analysis to comprehend the G x E interaction in multi-environment barley trials. **Indian J. Genet.**, 76(2): 202-204.
1. **R.P.S. Verma**, A.S. Kharub, J. Singh, V. Kumar, I. Sharma and A. Verma. 2016. AMMI model to analyse GxE for dual purpose barley in multi-environment trials. **Agric. Sci. Digest.**, 36 (1), 9-16.
3. R. P. S. Verma, A. S. Kharub, J. Singh, V. Kumar, I. Sharma and A. Verma. 2016. G × E evaluation for feed barley genotypes evaluated in country by AMMI analysis. *Journal of Applied and Natural Science*, 8 (3), 1295– 1301.
4. R.P.S. Verma¹, A.S. Kharub, Vishnu Kumar and Ajay Verma. 2016. G x E evaluation of salinity tolerant barley genotypes by AMMI model. *Agric. Sci. Digest.*, 36 (3) 2016: 191-196.
6. Visoni, M. Singh, S. Rehman, S. Gyawali and R.P.S. Verma. Optimizing test locations and identifying promising genotypes in ICARDA barley breeding program. 2016. Abstract: 12th International Barley Genetic Symposium, 2016. Minneapolis, MN, USA.