

## Evaluation for Fe, zn and beta-glucan content, malting quality and starw quality with NIR and traditional means

### A. Identification of new sources of malting quality in germplasm

Grain samples (more than 450 from high input program) were screened for hectoliter weight and the promising 73 lines were selected for micro malting analysis. **Ten new barley genotypes with very good malting quality have been identified as promising out of 73 advanced lines analyzed through micro-malting analysis.** The support from CRP Dryland Cereals has enabled in establishing the barley malting quality analysis laboratory at ICARDA Rabat, Morocco with installation of the Phoenix micro malting system, NIR Foss and many other instruments. The experience from contract research program with IASA has helped in development of enhanced germplasm for development of barley varieties in Mexico, as well as in east Africa and south Asia with better malting quality, resistance to rusts, foliar blights, maturity duration and other agronomic traits.

**Table 2.13: Promising malting quality genotypes identified in micro malting analysis at ICARDA**

No.	Entry	Cross name	HW	GE%	MY	MP	HWE	KI	Frb	Score
1.	MB1-4	SICH115.80/BU 27	67	89%	88%	11.60	80.10	0.39	85%	A
2.	MB1-15	MADRE SELVA/Malt 1	66	87%	87%	11.70	80.30	0.42	79%	A
3.	MB1-27	Clipper//WI2291*2//WI2269/5/Soufara02/3/RM1508/Por//WI2269/4/Hml-02/ArabiAbiad//ER/Apm	69	86%	87%	12.80	80.70	0.38	81%	A
4.	MB2-2	L-235	68	85%	89%	11.20	81.60	0.42	87%	A
5.	MB2-9	L-485	66	85%	90%	11.60	80.50	0.40	83%	A
6.	MB2-17	L-530	64	91%	89%	11.60	81.30	0.39	83%	A
7.	MB2-21	L-534	64	91%	87%	11.50	80.20	0.41	85%	A
8.	MB2-22	L-535	69	81%	85%	11.60	81.00	0.39	82%	A
9.	MB2-24	L-537	62	88%	76%	11.60	80.80	0.38	84%	A
10.	MB2-26	L-539	63	90%	88%	11.30	80.70	0.41	90%	A
11.	Check	V Morales	61	88%	88%	11.90	81.10	0.40	82%	A
12.	Check	Tradition	64	90%	84%	10.80	82.30	0.48	86%	A
13.	Check	Voyager	68	94%	82%	10.80	81.70	0.47	87%	A
	Desirable range		>66	>90	85±2	< 12.0	> 80.0	(0.40-0.44)	> 80%	

HW=Hectoliter weight (Kg/ha), GE= Germinative energy, MY= % malt yield, MP= % malt protein, HWE= Hot water extract (%db), KI= Kolbach Index (ratio of soluble by total malt protein), Frb= % Malt friability, MQ Score= Grade

### B. The micronutrient evaluation is taken under competitive project with INRA Morocco for which the details report has been submitted separately to CRP Dryland Cereals. (Attached).