

## Malting potential of fifteen genotypes of husked barley

■ N. SAXENA, S. KULSHRESHTHA, D. R. SOOD AND V. SAXENA

### SUMMARY

The variation might be under the influence of genetic make up of cultivars and abiotic factors. But the differences observed in the present study appeared to be mainly genetic ones as the malting quality of fifteen husked barley varieties were grown under Rajasthan agro climatic conditions were explored. TKW, Kernel plumpness and germination energy and capacity ranged from 28.6 to 49.2 per cent, 18.29 to 96.36 per cent, 91 to 100 per cent and 64 to 98 per cent. The concentration of moisture, protein and starch in malt and grain varied from 3.70 to 4.49 per cent and 6.23 to 10.13 per cent, 9.31 to 13.26 per cent and 8.20 to 11.81 per cent, 41.32 to 56.88 per cent and 53.10 to 65.70 per cent and husk content ranged from 10.70 to 20.15 per cent. Malt yield, malt friability, malt homogeneity, hot water extract and saccharification time varied from 84.10 to 90.51 per cent, 92.78 to 98.62, 86.20 to 99.98, 61.80 to 76.08 per cent and 5 min. Wort colour, wort appearance, filtration rate, soluble nitrogen and Kolbach index ranged from 2.5 to 4.5 °EBC, bright wort colour, 0.67 to 0.99 per cent and 0.38 to 0.64, respectively. Considering all the quality traits, superior for malting and brewing purposes.

**Key Words :** Barley, *Hordeum vulgare* L., Husked barley, Malting quality, Germination capacity, Wort

**How to cite this article :** Saxena, N., Kulshreshtha, S., Sood, D.R. and Saxena, V. (2012). Malting potential of fifteen genotypes of husked barley. *Internat. J. Plant Sci.*, 7 (1) : 168-172.

**Article chronicle :** Received : 18.10.2011; Sent for revision : 05.11.2011; Accepted : 28.12.2011

**B**arley (*Hordeum vulgare* L.) is one of the major cereal crops ranking fourth in world acreage and production after wheat, rice and maize. About ten per cent of the world's barley production is utilized in malting and brewing industries and the rest for feeding to humans and animals. The health and medicinal benefits of barley foods have been stressed in ancient Egyptian, Greek and Romans (Chughatai *et al.*, 2002). Barley husk has been utilized for the production of furfural and active carbon (Malcolmson *et al.*, 2005). Due to the

liberalized economic policy of government of India, Also, there is the malt production in India is likely to increase in future and scope of exporting good quality barley malt at competitive prices in south-east Asian and far-east countries, is likely to be widened. European Union countries barley is the most nutritious food supplying a balance of minerals, amino acids, fibers and enzymes to that support the body's own self healing mechanisms. Barley has been used in the treatments of arthritis, digestive disease, diabetes, skin abnormalities, weight loss, detoxification mechanisms and cancer (Khorasani *et al.*, 1997).

Huskless barley varieties are ideally suitable for the alcohol industry in comparison to hulled ones (Ingledeew *et al.*, 1995). Husked barleys are superior to dehusked for malting on the basis of higher thousand kernel weight, starch content and true extract and low crude fibre and fat contents (Anonymous *et al.*, 1996). The national core groups of "Malt barley development" have laid down certain specifications for grain and malt quality characteristics that the two row and six row barleys must have in order to provide good raw materials for malt production (Sood *et al.*, 1987). Understanding the overall nutrients build up, their action,

### MEMBERS OF THE RESEARCH FORUM

#### Author to be contacted :

N. SAXENA, Department of Biotechnology, Institute of Advance sciences, NIMS University, JAIPUR (RAJASTHAN) INDIA  
Email: nishantbiotech2009@gmail.com

#### Address of the co-authors:

S. KULSHRESHTHA, Department of Pharmacology, National Institute of Medical Science University, JAIPUR (RAJASTHAN) INDIA

D. R. SOOD, Department of Food Technology, Guru Jambheshwar University of Science and Technology, HISAR (HARYANA) INDIA

V. SAXENA, Department of pharmacy, Sardar Bhagwan Singh institute of Biomedical Sciences and Research, BALAWALA, DEHRADUN (UTTARAKHAND) INDIA