

Optimization of sowing and nitrogen levels and its scheduling on grain quality of malt barley (*Hordeum vulgare* L.) under irrigated condition

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SUMMARY

A field experiment was conducted to evaluate the effect of nitrogen levels and its split application on growth, yield and quality of malt barley (*Hordeum vulgare* L.) under normal and late sown conditions during winter seasons of 2005-06 and 2006-07 at Agronomy Farm, College of Agriculture, Bikaner. The results showed that significantly higher different quality parameters like as screening percentage, grain protein concentration and husk content of malt barley was observed under late sown condition compared to normal sown condition. While, plumpness and average grain weight was significantly higher under normal sown. Further, application of increasing levels of nitrogen from 60 to 90 kg ha⁻¹ significantly enhanced grain protein concentration, average grain weight and alpha amylase activity of malt barley. While, starch concentration and husk content was significantly higher under 60 kg N ha⁻¹. Scheduling of nitrogen at 1/3 as basal +1/3 at Ist irrigation +1/3 at IInd irrigation brought a substantial improvement in grain protein concentration, plumpness and alpha amylase activity while starch concentration and husk content was decreased as compared to two splits viz., 1/2 at basal + 1/2 at Ist irrigation, 2/3 at basal +1/3 at Ist irrigation, 3/4 at basal +1/4 at Ist irrigation and full basal. Scheduling of N in three equal splits affect the quality of malt barley grains. The prescribed limit as per Indian standards in North-Western Rajasthan conditions.

Key Words : Screening percentage, Grain protein concentration, Starch concentration, Plumpness, Average grain weight, Husk content, Alpha amylase activity, Nitrogen levels, Sowing dates, Scheduling of nitrogen application, Malt barley

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