

Genetic evaluation of barley germplasm for lodging tolerance under sub-tropical climates of India

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ABSTRACT

Barley (*Hordeum vulgare* L.) is one of the most ancient crops in India and world, however in last few decades the area of barley has come down. In India, the crop is getting revived in last two decades and its area is more or less stabilized mainly because of increasing demand by malt and food industry. Barley crop is bestowed with many desirable traits like salt tolerance and drought tolerance and owing of these attributes it is most suitable crop of rain fed areas and marginal lands, but to get desirable malt quality attributes in the grain, malt barley is being grown under high input conditions in the country. However this crop is very prone to lodging problem and this drawback restricts its cultivation in high input conditions. Since past few years, due to prevailing adverse climatic conditions (heavy rainfall, winds and hailstorms) especially during crop maturity, a huge loss is occurring in the yield and quality of barley. With the establishments of new malt and breweries units in India, the demand of quality malt is increasing year by year and problem of lodging is resulting in shortfall in supply of quality grain to the industry. To overcome this problem and meet out the ever growing demand of quality malt from shrinking land holdings the development of lodging resistance varieties is the need of hour. In order to develop lodging resistant genotypes of barley a set of 349 exotic germplasm was screened at Karnal, India during 2014-15 under natural conditions. The crop maturity period (during February/March) was marred with frequent rains, strong winds and hailstorm. A total of 32 genotypes were identified to have lodging tolerance along with several desirable agronomic and physiological traits. These genotypes have great potential for high input malt barley improvement programme in India.

SECTION:

Barley end use: malting and brewing