

Why we do Breeding Programs in Barley Crop?

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INTRODUCTION

Abiotic and biotic stresses always have an influence on the breeding strategy and selection process of diverse cultivars for specific environment. There are numerous goals for Barley breeding but the major goal is to produce such varieties that are stress tolerant. Because this is the future of Barley breeding. So, the major goals obtained are higher production potential, wider adaptability, high responses to inputs and insect pest resistance. Plant breeders are focusing on increasing and saving crop productions by improving in crop anatomy, enhancement in crop quality and resistance to disease, insect pests and different weeds. Yield components in barley can be improved by number of grains/unit area weight of grain in that unit. But we should remember that due to negative inter correlations among them there is no possibility to focus all characters. Resistance to lodging is helpful to enhance the yield potential of the barley by minimizing the harvest losses. So by inserting the genes that cause lodging resistance, we can produce cultivars which are lodging resistant. Drought tolerance is also a major goal in barley breeding. As due to the decline of water at the Earth, there is a need to insert some specific genes into the barley that will make the plant resistant to water shortage and plant will grow very well in drought and give a massive yield. Another breeding goal of barley is to produce early maturing varieties. Early maturing varieties have many benefits because due to this the food and by-products of barley will come earlier to market while other crops are still green. Resistance to barley insect pests and diseases is also a breeding goal in barley. About 2 bacteria, 2 viruses, 23 fungi and 9 nematodes infect the barley crop. Blotches, Scald and rusts are major diseases. They cause a huge loss in yield and with this, insects like weevils, root borer, termites, mites, cutworms, armyworms and grasshoppers also affect the barley crop yield.

Another goal for barley breeding is quality improvement which includes milling characters, β -glucan and fiber as well as protein quality.

So, these are the reason due to which we do barley breeding.

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