



Guar: The Green Gold

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ABSTRACT: Clusterbean [*Cyamopsis tetragonoloba* (L.) Taub.], popularly known as guar, is a drought-hardy, annual, subtropical legume belonging to the family *Leguminosae*. Among all the guar producing countries, India is a major producer accounting for about 80% of world's total production. Guar is grown in Rajasthan, Gujarat, Haryana, Punjab, Uttar Pradesh and Madhya Pradesh states of India. It is an important industrial crop due to the synthesis of galactomannan (guar gum) in its seed endosperm. The guar gum is used as a thickening agent in pharmaceutical, textile, cosmetic, food, detergent and health care industries. The pathway underlying galactomannan biosynthesis has been elucidated and the genes involved in this process have been characterized. Biotechnological approaches have not been fully utilized for the improvement of this important commercial crop. In our lab, first set of 187 SSR markers of guar have been identified and characterized. Genetic diversity studies have been carried out using RAPD and ISSR markers in guar landraces. A protocol has been standardized for *in vitro* regeneration of complete plantlets of guar in a single culture to carry out genetic manipulation of this legume. Research work is in progress to manipulate the expression of certain genes related to gum synthesis in guar. © 2014 iGlobal Research and Publishing Foundation. All rights reserved.

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