

RESEARCH ARTICLE

Cost effective techniques for enhancing hybrid rice seed production

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SUMMARY

Rice (*Oryza sativa* L.) is one of the most important staple cereal crops. Among the various possible approaches, hybrid rice cultivation is the most feasible and practical one in view of its 10-15 per cent yield advantage over the high yielding varieties. To obtain the benefits of hybrid rice cultivation, it is essential to develop effective hybrid seed production techniques. Poor panicle exertion of CMS lines of most of the released hybrids of rice is affecting the seed yield considerably. To overcome this problem, gibberellic acid (GA_3) is being used in hybrid seed production. But the high cost of it in India, limits its use in large quantity. Therefore, the aim of the present investigation was to test the effectiveness of GA_3 and search for other-cheaper alternatives and to enhance the effectiveness of GA_3 . Various chemicals such as, GA_3 , boric acid, urea, glycine, etc. were twice applied either individually or in combination of various concentrations at 10% heading and 50% heading by hand sprayer. Total 9 different treatments were used and data were recorded on ten floral and yield traits. The percentage of exerted stigma (%), anther length(mm), panicle length (cm), filled spikelets per panicle, plant height (cm), grain yield /plant(g) were highest found in application of GA_3 80ppm + glycine 80ppm coupled with flag leaf clipping and rope pulling. Panicle exertion (%), and spikelets length (cm) were highest found in glycine 80ppm coupled with flag leaf clipping and rope pulling. The panicle exertion was higher to the extent of 40 per cent with glycine 80ppm coupled with flag leaf clipping and rope pulling. The increases in seed yield with GA_3 80ppm and glycine 80ppm coupled with flag leaf clipping and rope pulling was to the extent of 200 per cent, over control. Spraying of GA_3 80ppm in combination with glycine 80ppm coupled with flag leaf clipping and rope pulling resulted in higher profits. Results showed that glycine 80ppm was found be alternative of gibberellic acid.

Key Words : Rice, Hybrids, Seed yield, Floral traits

How to cite this article : Goswami, Ashish and Seth, Vishal (2018). Cost effective techniques for enhancing hybrid rice seed production . *Internat. J. Plant Sci.*, **13** (1): 76-81, DOI: 10.15740/HAS/IJPS/13.1/76-81.

Article chronicle : Received : 27.09.2017; Revised : 19.11.2017; Accepted : 02.12.2017

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