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Effect of date of sowing of parents, growth regulators and micronutrient spray on crossed seed germination and seedling vigour of NHH-44 Bt. cotton hybrid

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SUMMARY

The influence of three date of sowings *viz*., D_1, D_2 and D_3 and two growth regulators and four micronutrient sprays were studied for crossed seed quality parameters. The crossed seeds obtained from D_1 staggered sowing gave higher and crossed seed index, germination percentage, root length, shoot length, seedling vigour index and seedling dry weight as compared to those crossed seeds obtained from D_2 and D_3. The lihocin @ 100 ppm sprayed at 45 DAS recorded maximum crossed seed index, germination percentage, root length, shoot length, seedling vigour index, and seedling dry weight followed by NAA 10 ppm sprayed at 90 DAS. However, the germination percentage in all treatment combinations recorded above mean seed certification standards (75%). Hence, the crossed seeds obtained from all the eighteen treatment combination in NHH-44 Bt. Cotton hybrid seed production can be used as seed for commercial sowing. Among the interactions, the D_1 date of parents in the combination of lihocin recorded higher crossed seed index (9.02), germination (82.63%), seedling vigour index (2907) compare to other combinations.

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Key words : Date of sowing, Lihocin, NAA, Germination, Vigour index

The major barrier in hybrid seed production is perfect synchronization of flowering between female and male in order to get higher crossed seed yield with better quality due to less insect damage, the square and flower dropping is less flower setting, locule damage are less and hence there is increase in number of retention of squares/flowers in Bt version of female parent (BN1) of NHH-44 hybrid cotton. Therefore, the already standardized staggered planting may also be expected to change. Due to less insect damage, retention of good opened bolls is also more. Hence, there is a need to supplement the plant proper micronutrients and growth regulators to retain the crossed bolls on the plant for final harvest so that crossed seed yield can be increased with high quality. So, in order to ascertain the quality of hybrid seed (NHH-44 Bt cotton) produced at different date of sowing of parent, micronutrient, growth regulator spray, the present experiment was planned.

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MATERIALS AND METHODS

An experiment on inter hirsutum (BN1 x AC-738) Bt cotton hybrid (NHH-44) seed production was laid out at ARS, Dharwad during *Kharif* 2009 in factorial randomized complete block design. The 1st factor consists of three date of sowing of parents *viz*., D_1, D_2 and D3. The second factor consisted of two growth regulators *viz*., NAA (10 ppm), lihocin (100 ppm) and four micronutrients *viz*., $MgSO_4$ (1%), boron (1%), boron (2 ml/l), veagro (1 ml/l) were used for foliar application to the female parent.

The picked crossed kapas from each treatment combinations were separately cleaned, ginned and the crossed seeds were collected. The observation on crossed