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Strategies to improve germination per cent in Castor (*Ricinus communis* L.)

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The present study was taken up to identify suitable technology for improvement of germination per cent and seedling vigour in castor. The experiment was conducted during *Rabi*, 2013 at field plots of Seed Research and Technology Centre, Rajendranagar, Hyderabad utilizing the castor hybrid PCH-111. Ten treatments viz., soaking for 16 hrs, removal of caruncle, scarification with sand paper, scarification + soaking for 16 hrs, removal of caruncle + soaking for 16hrs, scarification + soaking for 24 hrs, removal of caruncle + soaking for 24 hrs, removal of caruncle + scarification, removal of caruncle + scarification +soaking for 16 hrs, removal of caruncle + scarification + soaking for 24 hrs along with untreated control were utilized to observe the effect of these treatments on germination per cent and other seed quality parameters in castor. The treatments were replicated thrice and the data were analysed using randomized block design.

The treatment, removal of caruncle + scarification + soaking for 24 hrs (78.3%) followed by removal of caruncle + scarification + soaking for 16 hrs (76.3%) were significantly superior to control, which recorded a germination per cent of 65.0 on 9th day of sowing. Similarly, the same treatments i.e., removal of caruncle + scarification + soaking for 24 hrs and removal of caruncle + scarification + soaking 16 hrs were also recorded significantly superior seedling vigour index (SVI) (based on seedling length) of 1651 and 1529, respectively. While the untreated control recorded the SVI of 1286, the superior speed of germination of 9.76 and 9.73 were recorded by these treatments, which were significantly superior to control, which showed the speed of germination as 6.67.

From the current study, it can be concluded that the pre sowing invigorating treatment namely, removal of caruncle + scarification + soaking for 24 hrs can be recommended to castor farmers to improve the initial germination and vigour index, so as to realize higher productivity under rainfed situations.

Biography

M. Sudharani is presently working as Scientist (Pl. Br.), Seed Research and Technology Center, ANGR Agricultural University, Hyderabad. She joined as Scientist (Pl. Br.) at ARS, Machilipatnam during 1999 and involved in developing rice varieties with salt tolerance. Later, she involved in development of gall midge tolerant varieties (2 Nos) at RARS, Warangal. Presently, her work is involved in Seed Research of different crops particularly in the area of safer storage of seed, development of seed testing strategies in various crops and DUS testing of maize, greengram and blackgram varieties for protecting them under PPV&FR Act. Also she is actively involved in guiding P.G. students and so far she had guided two students. She has 15 research publications and 15 popular articles.

Effect of agronomic practices on growth, seed yield and profitability of dill *(Anethum sowa* L.*)*

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A field experiment was carried out with an objective to find out the optimum sowing time and crop geometry in dill for realising higher yield and benefit. Fifteen treatment combinations comprising of five dates of sowing viz., 1st October, 15th October, 30th October, 15th November and 30th November in main plots and three crop geometry viz., 40 cmx10 cm, 50 cmx10 cm and 60 cmx10 cm spacing in sub plots were taken in split plot design with three replications. The results revealed that sowing of dill on 15th October exhibited significantly higher plant height and number of branches per plant at all the growth stages with maximum number of umbels per plant (60.15), umbellates /umbel (44.10) and seeds /umbellate (57.18). The maximum seed weight (4.89 gm), seed yield (1631.75 kg/ha), net returns (Rs. 107222/ha) with highest benefit:cost ratio (15.32) were recorded in the same treatment. Significantly higher plant height at all the growth stages, yield attributes, seed yield (908.57 kg/ha), net returns (Rs. 56600 /ha) and BCR (8.09) were obtained with sowing of dill at 40 cm x 10 cm spacing over wider spacing. Therefore, sowing of dill on 15th October at 40 cmx10 cm spacing was found most suitable for realising higher growth, seed yield, net returns and BCR.

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