Specific Gravity of Seeds as a Mass Selection Criterian in Cashew

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Cashew seeds drawn from a bulk collection were grouped into differen specific gravity groups by immersing them in a series of sugar solutions o increasing specific gravity, and samples from each group were raised in poly thene bags. Seeds of higher specific gravity gave significantly earlier an higher rates of germination: 50 and 97 per cent in the lowest (1.03) an highest (1.09) specific gravity groups respectively. A vigour index calculate based on speed and rate of germination gave index values 4.16, 7.08, 7.3 and 8.17 for the groups 1.03, 1.03 – 1.06, 1.06 – 1.09 and 1.09 respectively The greater the index value, the greater the germination ability and thus th greater the seed vigour.

The low specific gravity seeds were significantly inferior to high specific gravity seeds in shoot length, shoot girth, fresh and dry weight of shoots. In general seed specific gravity affected seed germination and seedling growth significantly. These results indicate the possibility of mass selection of seeds for greater vigour. Since 45 per cent of the seeds fall in the low specific gravity groups elimination of these can enhance the speed of germination, ensure vigorous seedlings and also reduce the loss by way of ungerminated seeds and seedlings of low vigour.

Flowering Behaviour and Correlation Studies in Cashew

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The flowering behaviour and nut set of cashew (*Anacardium occidentale* L.) were investigated. Ten units of 30 cm^2 area per tree at different heights and sides of a tree in fifteen healthy bearing trees of almost same age group were studied. Observations per unit area on number of male flowers (1766.04), number of bisexual flowers (61.99), number of nuts set (1.40), percentage of bisexual flowers to male flowers (4.12), percentage of nuts set

to bisexual flowers (4.57) and number of panicles (flowering shoots) (4.55) were made. Correlation coefficients were worked out between the observed characters.

(i) Between number of panicles and number of flowers (0.0085)

(ii) Between number of panicles and number of bisexual flowers (0.2028)

(iii) Between number of panicles and number of nuts set (0.1661)

(iv) Between number of male flowers and bisexual flowers (0.0810)

(v) Between number of male flowers and number of nuts set (0.0119)

(vi) Between number of bisexual flowers and number of nuts set (0.2301)

The correlation coefficients (i) between number of panicles and bisexual flowers, and (ii) between number of bisexual flowers and number of nuts set were statistically significant.

Study of Microsporogenesis in Cashew

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Six cashew trees growing at the C.P.C.R.I. Kasaragod campus were selected for this study. For meiotic studies, the flower buds were fixed in freshly prepared Carnoy's solution (6:3:1 alcohol: chloroform: acetic acid) between 2 and 3 p.m. and refrigerated for 24 hrs and then transferred to 70 per cent alcohol after treating the buds with ferric acetate. Squash preparations of anthers, with acetocarmine were made for the study of microsporogenesis. Pollen stainability was determined by using 1:1 acetocarmine: glycerine.

The meiotic behaviour was found to be uniform in all the six trees examined. At metaphase I, 63 to 68 per cent of the cells showed 21 bivalents.

The mean chiasmata per cell and the between cell variance (within plant variation) have been analysed. In cashew, the frequency of chiasmata ranged from 39 to 42 per cell and the cell variance within a tree ranged from 0.25 to 1.1. Most of the cells showed 19 ring bivalents and 2 rod bivalents, and two of the bivalents consistently showed unterminalised chiasmata at metaphase I.

Out of the 223 cells observed at metaphase I, 144 were found to be normal possessing 21 bivalents. The rest showed irregularities like chromosome mosaics, suggesting premeiotic irregularities and stickiness of