

RESEARCH NOTES

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Inducing Opening of the Flowers in Finger Millet (*Eleusine coracana* L. Gaertn.)

Finger millet (*Eleusine coracana* L. Gaertn.) is a highly self-pollinated crop, the extent of self pollination being 99 percent. The spikelets of this cereal are very small and much difficulty is experienced in opening these tiny florets for crossing purposes. The hot water emasculation technique suggested by Raj *et al.*, (1964) does not ensure thorough emasculation. Dominant marker genes are required to identify the hybrids in the progeny. At the Millet Breeding Station, Coimbatore by subjecting the florets to optimum humidity and pressure, they were induced to open well before anthesis so that emasculation could be easily effected. The method is described hereunder.

The panicles in which the flowering has already commenced were chosen. Leaving the florets that would open the next day, the rest of the florets were removed. The entire plant containing the panicle so prepared was covered by a polythene bag after spraying the plant with cold water and fixed air tight. This operation was done in the noon (at about 11-30 a.m.). Being subjected to the hot and humid atmosphere inside the bag for 4 to 5 hours, the glumes slowly gape open and expose the premature anthers and pistil. The three anthers could therefore, be carefully removed by forceps without injuring the stigmatic lobes. Since the anthers were removed considerably earlier to the normal anthesis period of 2-00 to 5-00 a.m. next day (Ayyangar, 1934) there was no possibility of the emasculated stigma being self-fertilized. The

emasculated panicle was sprinkled with cold water to prevent drying of the pistil.

In the male parent, the panicles that would open the next day were chosen and removed from the plant with a sufficiently long shoot. These panicles were tied to the emasculated seed parent in such a way that the emasculated florets were in close contact with the male florets that will open the next day. The shoot portion of the male parent was kept dipped in a bottle of water. The male and female panicles thus secured were together covered by a butter bag avoiding contamination with other pollen.

This method ensures 60 per cent seed set all of which are hybrids. It was also observed that the seed setting during Kharif and Winter seasons was comparatively higher than in Summer. A person can emasculate 25-30 florets per day. The progenies obtained by this crossing technique are in the different stages of study.

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