

## III. REPORTS FROM COOPERATORS

ANDHRA UNIVERSITY  
Waltair, India  
Department of Botany

1. Experimental evidence on apomixis in *Coix lacryma-jobi*.

Occurrence of multiple embryo sacs in the ovules was taken as an evidence of apomixis in *Coix lacryma-jobi* (MNL 41:8, 1967). For obtaining genetic evidence on the occurrence of apomixis, an experiment involving the crossing of two types of *C. lacryma-jobi* with contrasting characters was done in 1967-68. The two types, Anantagiri *Coix* and Campus wild *Coix*, differ in the following easily recognizable characters.

No.	Character	Anantagiri <i>Coix</i>	Campus wild <i>Coix</i>
1.	Style colour	White	Purple
2.	Plant colour (at the base of the plant in seedling stage)	Green	Purple
3.	Hairs on upper surface of leaves	Long hairs present	Hairs absent

The two types were found to breed true indicating homozygosity for the above characters.

In June 1967, a potted plant of Anantagiri *Coix* was surrounded with potted plants of Campus wild *Coix*. The former plant was emasculated before the anthers exerted to make it serve as a female parent and it was allowed to cross pollinate with the surrounding plants. 219 seeds were harvested from the emasculated Anantagiri *Coix* in November-December, 1967. In June 1968 plantings, 113 of these germinated. 4 seedlings showed green plant colour and 109 showed purple plant colour. The seedlings with green plant colour at maturity showed white style and long hairs on the upper surface of the leaves and those with purple plant colour showed purple style and leaves with only short hairs. Apparently the 109 plants exhibiting the characters of Campus wild *Coix* with respect

to purple style and purple plant colour are  $F_1$  hybrids and the 4 plants having characters of Anantagiri Coix are produced through apomixis, since the possibility of these being selfed progeny of the female parent was eliminated beyond doubt by careful emasculations. The occurrence of a large number of crossed plants in this experiment shows that the species (or at least the type, Anantagiri Coix, under investigation) is largely sexual in reproduction. However, apomixis also occurs although in low proportions (3.54%) and the species may therefore be termed as a facultative apomict.

The purple colour of style and purple plant colour appear to be dominant over white style and green plant colour, respectively. As the  $F_1$  plants exhibited only short hairs on the leaves, the condition of leaves having long hairs on the upper surface seems to be incompletely dominant over glabrous leaves. The  $F_1$  plants were selfed and also test crossed for further studies.

J. Venkateswarlu  
Panuganti N. Rao

## 2. Twins (?) in Coix aquatica.

Twins are of considerable interest because they offer a potential source for haploids. In Coix aquatica, three seeds have been found to give rise to twin plants out of a total of 3,681 germinating seeds in June, 1968 (0.0008%). These were transferred to pots and both the plants in each of these seeds were marked separately. One of the plants from one seed died early owing to mechanical injury. The remaining 5 plants grew to maturity and their meiotic study showed the following chromosome numbers and behaviour (see table at top of next page). The female parent of 68k-30A on cytological examination last year showed a chromosome number of  $2n=11$  with the same meiotic behaviour as that of 68k-30A-1. Six other plants of the open pollinated progeny of this same parent have shown chromosome numbers  $2n=10$  in three plants and  $2n=11$  in the other three.

In Coix, the use of the word "seed" is rather deceptive and usually refers to the structure enclosing the caryopsis, which is really the metamorphosed or indurated or hardened leaf sheath called variously