## MALE STERILE MUTANT IN *CAPSICUM ANNUM* L.

THE production and isolation of male sterile mutants is of prime importance in plant breeding since they provide a means of emasculating plants genetically. At the Agricultural Research Station, Lam, Guntur, during 1977–78, in a natural population of G2 Chilli a male sterile plant, with altered leaf shape was located. Although there are earlier records of male sterility in chillies,[1–5] all the reports are in exotic, non-pungent bell peppers. The male sterility now reported is first of its kind in hot chillies from India. The male sterile mutant is distinctly different from the parent population in having peculiar shape of the leaves. The leaves are elliptical with rounded tip in contrast with the acute tip of the leaves of the parent. Flowers are of normal size with white corolla in two whorls. Some of the flowers are unisexual with no development of the stamens. Even in bisexual flowers, where there is stamen development, the anthers were found to be reduced in size with almost no pollen (1–2 pollen grains per anther). Cytological examination of young anthers revealed that meiosis is normal upto the pachytene stage but afterwards degeneration of chromatin sets in, thereby indicating that there is inhibition of the normal meiotic process, resulting in non-formation of pollen grains.

FIG. 1. Normal and mutant pods.

In order to determine the type of male sterility and also to carry on cytogenetic investigation of hybrids, crosses were made by using three different male parents (G2, cross 200 and CA 1,068, all varieties of *C. annuum* L.). The pods obtained were smaller in size with longitudinal grooves which are marked with light green bands before ripening, turning to yellow on ripening but not red as in normal plants. The calyx is cup-shaped and the pod is bulged in the middle (Fig. 1). Seeds are a few and most of them are ill developed. All the F1 plants raised from the corssed seed turned out to be normal. From this, it is concluded that the male sterility in question is either genic or genic-cytoplasmic but not purely cytoplasmic. From the observations recorded, it appears that this is a mutant affecting mainly pollen development and to some extent the fertility of the ovules. In addition, it is seen that the leaf and pod characteristics are also altered.

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## ON THE OCCURRENCE OF NEW LARVAL PARASITES OF *PLUTELLA XYLOSTELLA* (L.) IN GUJARAT

WHILE making observations on the seasonal activity of *Apanteles plutellae* Kurdj., a larval parasite of *Plutella xylostella* (L.) (Yadav *et al.*[2]), the authors came across four other hymenopterous larval parasites attacking this pest. In order to ascertain the level of parasitism by different species, periodical collections of *Plutella* larvae infesting cauliflower and cabbage were made around Anand (Gujarat) and kept under observation. The parasites reared, their period of activity, percentage of parasitism, etc., are given in Table I.

TABLE I

*Different parasites of* Plutella xylostella, *their intensity and period of activity*

| Family | Parasite | Period of activity | % parasitism | Remarks |
|---|---|---|---|---|
| Braconidae | *Apanteles plutellae* Kurdj. | July–March | 5·0–71·7 | Solitary |
| ,, | *Apanteles* sp. (*glomeratus* gr.) | July–Sept. | 2·0–12·5 | ,, |
| ,, | *Bracon* sp. | July–Sept. | 7·6–11·4 | ,, |
| ,, | *Bracon gelechiae* Ashm. | Feb.–March | 10·2–13·8 | Gregarious |
| Ichneumonidae | *Mesochorus* sp. | July–Sept. | 2·5– 8·3 | Solitary |

Of the five parasites reared during the present investigation, three parasites namely, *Bracon* sp., *B. gelechiae* and *Mesochorus* sp. are new records on *Plutella*, while the remaining two are already known to occur (Patel and Patel[1]).

The maximum parasitism by *B. gelechiae*, *Bracon* sp. and *Mesochorus* sp. was 13·8%, 11·4% and 8·3%, respectively. It was observed that all the five parasites were active more or less simultaneously in the field. However, *A. plutellae* was the predominant parasite in this area (Yadav *et al.*[2]), giving upto 71·7% parasitism.

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## INTERFERTILITY STUDY OF *HEXAGONIA SULCATA* BERK.

NOBLES[1] pointed out the importance of interfertility studies in the taxonomy of Polyporaceae. Although the type of interfertility of a great many polypores have been determined[2,3], *Hexagonia sulcata* Berk. has not been studied, so far, from this point of view. The present paper gives the result of interfertility test of *H. sulcata*, a common polypore of India.

The sporophore of *H. sulcata* was collected from Birbhum, West Bengal, India, on a dead wood of *Shorea robusta* Caertn. Twentyfive monosporous cultures were isolated from this sporophore. Twenty monosporous cultures were paired among themselves in all possible combinations on 2·5% malt agar slants. The culture tubes containing paired inocula were incubated at room temperature (28 ± 2° C) for about a fortnight and then the hyphae from th line of contact between the paired mycelia were examined for clamp connections.

The results of pairing showed that the single spore cultures from one sporophore of *H. sulcata* fall into two groups on the basis of their ability to form clamp connections. Therefore, *Hexagonia sulcata* is hetrothallic and possesses bipolar type of interfertility. The genetic constitutions of the two groups have been designated as $A_1$ and $A_2$. The number and distribution of the monosporous cultures in each mating group are :

$A_1$ : 1, 2, 5, 7, 8, 9, 14, 17, 18, 19, 25
$A_2$ : 3, 4, 6, 12, 15, 16, 21, 22, 24.

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