

Mass Rearing of Phytoseiid Mite, *Amblyseius longispinosus* (Evans) on Cotton Red Spider Mite, *Tetranychus macfarlanei* Baker and Pritchard

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Mass rearing of different phytoseiid mites had been attempted using tetranychid mites (McMurthy and Scriven, 1965; Hoy *et al.*, 1982; Karuppachamy *et al.*, 1988; Anil, 1990). However, the mass rearing of *Amblyseius longispinosus* (Evans) on *Tetranychus macfarlanei* Baker and Pritchard has not been adequately studied and also the method employed earlier were a bit complicated, time consuming and difficult to commercialise. Therefore keeping these points in view, an experiment was conducted under laboratory condition.

Three different methods of mass rearing of the predator, *A.longispinosus* on *T.macfarlanei* have been studied under laboratory condition. In the first method *T.macfarlanei* infested bean leaves were placed on glass plate (40x30 cm). The lower surface of this glass plate was painted black and petioles of bean leaves placed on glass plate were sandwiched between two wet cotton strips kept along the border of the upper surface of glass plate. The glass plate was placed in a plastic tray supported by Petri dishes and water filled up to the level below the lower surface of the glass plate.

When the leaves started to dry, they were replaced by new leaves with prey, and eggs of the predator were carefully transferred from old leaves to fresh leaves. Prey was supplied whenever prey density was found to be low. Twenty pairs of freshly mated *A. longispinosus* were released initially and all stages were counted after ten days. In the second method, instead of bean leaves, uninfested cotton leaves were used. In the third method, an attempt was made to mass multiply the predator on potted cotton (MCU-5) plants. Gravid females of *A. lon-*

gispinosus were released at densities of one, two, three, four and five pairs, and count was made after ten days of release of the predator.

In the first method, 130 eggs, 118 nymphs and 78 adults of the predator were harvested from initial 20 pairs. Whereas in the second method 116 eggs, 103 nymphs and 73 adults were recorded (Table 1). The multiplication of the predator was slightly faster on bean leaves. This is in accordance with the findings of Anil (1990) who studied the mass rearing of *A. longispinosus* on *T. macfarlanei* and *Oligonychus indicus*. But in the second method, changing of leaves were less frequent and time needed to transfer the predator eggs from dried leaves to fresh leaves can be saved. The above results clearly indicate that both the methods were equally good with similar basic arena. Similar opinions are also expressed by Karuppachamy *et al.* (1988) and Anil (1990).

In the third method, a total number of 4,7, 12 and 20 predators were recorded from initial one, two, three, four and five pairs respectively. This method can be easily applied to rear the predator under green house condition as achieved by Hoy *et al.* (1982) who formulated a method for large scale rearing of *Typhlodromus occidentalis* on *Tetranychus urticae*, in a 45m² green house. But in this method, the predator should be released only after establishment of the prey mite, otherwise frequent brushing of prey mites to these plants makes it more time consuming and laborious.

KEY WORDS : *Amblyseius longispinosus*,
Tetranychus macfarlanei,
Mass rearing

Table 1. Population of *A. longispinosus* under different mass rearing methods after ten days

Method	No. of pairs released	Egg	Nymphs	Adults	Total
Infested bean leaves	20	130	118	78	326
Non infested cotton leaves	20	116	103	73	292
Potted cotton plant	1	—	—	—	4
	2	—	—	—	7
	3	—	—	—	12
	4	—	—	—	14
	5	—	—	—	20

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