

EFFICACY OF ACARICIDES AGAINST TWO-SPOTTED SPIDER MITE, *TETRANYCHUS URTICAE* KOCH INFESTING OKRA

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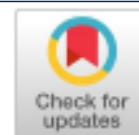
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ABSTRACT : The acaricides tested for their efficacy against *Tetranychus urticae* Koch infesting okra under field conditions during summer 2022 revealed that all the acaricides were significantly superior over untreated control in checking the spider mite population. Among the acaricides fenazaquin 10 EC @ 125 g a.i./ha was found to be most effective in controlling the spider mite, *T. urticae*. On the basis of effectiveness (% reduction), the descending order was Fenazaquin 10 EC @ 125 g a.i./ha (51.83%) > fenpropathrin 10 EC @ 30 g a.i./ha (46.12%) > Buprofezin 25 EC @ 150 g a.i./ha (45.26%) > Fenpyroximate 5 EC @ 30 g a.i./ha (43.14%) > Spiromesifen 240 SC @ 100 g a.i./ha (41.32%) > Propargite 57 EC @ 570 g a.i./ha (38.71%) > chlorfenapyr 10 EC @ 75 g a.i./ha (37.21%) > Diafenthuron 50 WP @ 300 g a.i./ha (36.78%) > Hexythiazox 5.45 EC @ 25 g a.i./ha (35.24%) > water spray (17.58%).

Key words : Acaricides, efficacy, *Tetranychus urticae*, okra.

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INTRODUCTION

Among vegetables, Okra, *Abelmoschus esculentus* L., is cultivated in most parts of the world and is considered to be one of the world's oldest cultivated crops. It is a warm-season crop that belongs to the family Malvaceae. Okra crop is infested by numerous insect and mite pests (Kumar, 2004). Sucking pests in the early stage and the fruit borers in the later stage causes extensive damage to fruits and results in 69 per cent yield loss (Mani *et al*, 2005 and Jagtab *et al*, 2007). There are many insect pests that may attack okra, but among those most likely to be troublesome are jassids, whitefly, *Heliothis*, fruit borers, and other sucking pests. Aphids and mites may also occur on okra crops. Inspecting the field regularly is very important since the population build-up of the mites is very rapid. At the beginning of the infestation, the distribution of mites is very patchy. It is very difficult to control the mite population once they are established. Less experienced farmers sometimes have difficulties with early identification of the mites, since the symptoms resemble a nutrient deficiency or plant disease. Close inspection of the underside of affected leaves shows mites as tiny moving specks (red or yellow-greenish

depending on the species) and whitish particles (shed skins of mites) (Dhaka and Pareek, 2007). Red spider mite, *Tetranychus urticae* Koch is tiny in size, barely visible to the naked eye as reddish or greenish spots on leaves and stems, the adult females measure about 0.4 mm long. The red spider mite, which can be seen in greenhouses and tropical and temperate zones, spins a fine web on and under leaves. *Tetranychus urticae* is extremely polyphagous. It can feed on hundreds of plants. These include most vegetables and food crops including okra, peppers, tomatoes, potatoes, beans, maize and strawberries, and ornamental plants such as roses. It is the most prevalent pest of Ashwagandha [*Withania somnifera* (L.) Dunal] in India. It lays its eggs on the leaves, and it poses a threat to host plants by sucking cell contents from the leaves cell by cell, leaving tiny pale spots or scars where the green epidermal cells have been destroyed. Although, the individual lesions are very small, attack by hundreds or thousands of spider mites can cause thousands of lesions and thus can significantly reduce the photosynthetic capability of plants (Raworth *et al*, 2002). The proposed research work was carried out to test the efficacy of some acaricides against a two-spotted spider mite, *T. urticae* infesting okra.

Table 2 : Effect of acaricides on yield, gross returns and cost-benefit ratio in okra.

Treatment	Dose (g a.i./ha)	Yield (q/ha)	Gross Returns (₹ /ha)	Cost-benefit ratio
Buprofezin 25 EC	150	76.23	152460	1:6.68
Chlorfenapyr 10 EC	75	76.39	152780	1:1.53
Diafenthiuron 50 WP	300	76.67	153320	1:1.95
Fenazaquin 10 EC	125	81.25	162500	1:2.75
Fenpropathrin 10 EC	30	78.64	157280	1:14.20
Fenpyroximate 5 EC	30	80.19	160360	1:7.13
Hexythiazox 5.45 EC	25	77.67	155340	1:5.02
Spiromesifen 240 SC	100	78.79	157560	1:2.87
Propargite 57 EC	570	79.03	158060	1:3.04
Water spray	-	72.46	144900	1:0.86
S.E.m.±		0.23	-	-
C.D. at 5 %		0.92	-	-
C.V. (%)		0.78	-	-

Tomar and Singh (2011) observed that the maximum fruit yield of okra (27.33 q/ha) was recorded in propargite 57 EC @ 2000 ml/ha followed by fenpyroximate 5 EC @ 500 ml/ha (26.22 q/ha). Siddhapara and Virani (2016) observed that gross realization ₹ per ha was highest in treatment with abamectin 0.0025 per cent followed by fenazaquin 0.01 per cent and propargite 0.05 per cent while, looking to net CBR, propargite 0.05 per cent stood first (1:15.15) followed by fenpyroximate 0.0025 per cent (1:12.41). All these reports of earlier workers more or less support the present findings, however, slight differences in yield and economics may be due to varied agroclimatic situations, varietal performance and incidence level of the pest.

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