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Studies on Efficacy of Some Acaricidal Molecules against Mites in Polyhouse Capsicum

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Abstract : The experiment was conducted during Kharif 2016 at Hingoni, Ahmednagar (dist.), Maharashtra (India) to evaluate the novel molecules of acaricides against mites in polyhouse capsicum. The study was planned with randomized block design (RBD) and included nine treatments replicated thrice with 30 m^2 each plot size. The crop (var. Bachata) was raised according to the standard package of practices except plant protection measures. The molecules viz., spiromesifen 22.9SC (95 gm a.i. ha^{-1}), fenpyroximate 5EC (15 gm a.i. ha^{-1}), hexythiazox 5.45EC (15 gm a.i. ha^{-1}), diafenthiuron 50WP (300 gm a.i. ha^{-1}), chlorfenapyr 10SC (75 gm a.i. ha^{-1}) were compared with a standard acaricide, dicofol 18.5EC (500 gm a.i. ha^{-1}) and biopesticides like Verticillium lecanii (2 g/l), Metarhizium anisopliae (2 g/l) and Neem oil 10,000ppm (2ml/l). In total three sprays were given after 30, 50 and 70 days after transplanting (DAT) at an interval of 20 days. The insecticidal solutions were prepared in water by diluting required concentration of chemical and applied using knapsack sprayer with hollow cone nozzle @ 500L of solution per hectare. The mites were counted per 4 cm^2 in three leaves from randomly selected five plants in each plot at 1 day before treatment (precount) and 1, 3, 5, 7, 10 and 15 days after treatment. The results revealed that fenpyroximate 5EC found best by recording significantly least mite population (2.72/4 cm^2 leaf area) followed by hexythiazox 5.45EC and spiromesifen 22.9SC (3.78 and 3.82 per 4 cm^2 leaf area, respectively) and followed by remaining treatments chlorfenapyr 10SC (4.13/4 cm^2 leaf area), diafenthiuron 50WP (4.32/4 cm^2 leaf area), and dicofol 18.5EC (4.48/4 cm^2 leaf area). Among the biopesticides tested Neem oil and Verticillium lecanii were found to be superior to Metarhizium anisopliae. Overall, newer molecules like fenpyroximate, hexythiazox, spiromesifen, diafenthiuron, and Chlorfenapyr can be used for the effective management of mites under polyhouse capsicum.

Keywords : acaricides, capsicum, mites, spiromesifen
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