

INCIDENCE OF ONION THRIPS (*Thrips tabaci*) AND ITS MANAGEMENT IN ONION PRODUCTION SYSTEM

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Executive Summary

Onion thrips, *Thrips tabaci*, is a leaf feeding insect pest of onion in the field. An experiment was carried out at Sher-e-Bangla Agricultural University Farm during November 2022 to May 2023 to study incidence of onion thrips and to development its management practices in onion production system. Thrips incidence was measured from untreated control plots of onion and from seven promising formulated products such as Antario 32K (*Bacillus thuringiensis* var. *kurstaki* 1.4% + Abamectin 0.1%), Fytomax (Azadirachtin 0.1%), Fytoclean (Potassium Salt of Fatty Acid 40%), Biotrin (Matrine 0.5% AS), Matrixine plus 5EC (Oxymatrine + Abamectin), Tracer 45SC (Spinosad) and Proclaim 5SG (Enamectine benzoate) treated plots as management practices. Thrips incidence gradually increased with age of the crop and reached a peak at 50 days after transplanting and then declined. More than 80% leaf infestation was observed in the untreated control field. Spinosad decreased 89.44%, 90.31% and 89.38% leaf infestation over untreated control plot after first, second and third application, respectively. Other treatments significantly reduced leaf infestation but they failed to provide standard percent (80%) reduction of infestation. Similarly Spinosad reduced 92.14%, 91.18% and 86.52% total population of thrips after first, second and third application, respectively. Biotrin also decreased 89.89%, 89.21% and 83.15% total population of thrips after first, second and third application, respectively. The highest bulb weight (50.33 g) and diameter (5.73 cm) was obtained from Spinosad treated plots which increased 384.50% bulb weight and 128.87% bulb diameter over untreated control plot followed by Biotrin having 45.47 g bulb weight and 5.47 cm diameter of onion bulb and increased 337.20% bulb weight and 128.87% diameter over untreated control. The highest bulb yield plot⁻¹ (13.57 kg per 7.5 m²) was obtained from Spinosad treated plots which increased 415.97% yield over untreated plot. Biotrin produced 11.90 kg onion bulb per plot (7.5 m²) and increased 352.47% yield over untreated control plot. Fytomax gave 10.56 kg onion bulb per plot (7.5 m²) and increased 300.38% yield over untreated control plot. Other treatments also significantly increased bulb yield of onion over untreated control plot. Considering leaf infestation intensity, thrips population and bulb yield Spinosad and Matrine may be alternately used for the management of thrips in onion production system.

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