

ECO-FRIENDLY MANAGEMENT PRACTICES AGAINST CAPITULUM BORER AND TOBACCO CATERPILLAR OF SUNFLOWER

Tahmina Akter

Executive Summary

The experiment was conducted in the field of Sher-e-Bangla Agricultural University farm, Dhaka, Bangladesh during the period from November 2022 to April 2023. The experiment consists of eight treatments such as T_1 = Set up pheromone traps @ 12 Nos./ha and change the septa once in 3 weeks.+ release of egg parasitoid, (*Trichogramma* spp.); T_2 = Field sanitation + Inundative release of egg parasitoid *Trichogramma* spp. and larval parasitoid, *Microbracon* sp ; T_3 = Mechanical control + carbaryl 50 WP @ 2 gm/L of water at the 10 days interval; T_4 = Yellow sticky board + Restrict migration of larvae by digging a trench 30 cm deep and 25 cm side with perpendicular sides around the infested fields; T_5 = Yellow sticky board + Spraying 0.2% Borax + 0.2% $ZnSO_4$ @ 2 gm/L of water.; T_6 = Spraying Chlorpyrifos 20EC @ 2-3 ml/L of water at the 10 days interval; T_7 = Spraying Anterio (*Bacillus thuringiensis* + Abamectin) @ 1.5 gm/L of water at the 10 days interval and T_8 = Untreated control. The experiment was laid out in Randomized Complete Block Design with three replications. The overall result indicates that the effect of different managements decreased the incidence of insect pests (capitulum borer and tobacco caterpillar) of sunflower compared to control T_8 treatment. In T_3 treatment, the lowest leaf infestation, percentage of infestation and reduction over control caused by capitulum borer (3.26, 7.16 % and 72.50%) at reproductive stage of sunflower were recorded in T_1 treatment. In case of tobacco caterpillar, percentage of leaves infestation at the vegetative (2.12, 8.95 % and 75.13%) and at the reproductive stage (4.58, 16.86 % and 60.43%) occurred. In case of yield contributing characters of sunflower, the highest of head/ capitulum diameter (9.93 cm), height of plant per plot (196.18 cm), leaf width (14.59 cm), leaf length (22.99 cm), area of leaves per plant (67.23 cm) and number of leaf per plant (24.55), number of total head per plot (29.83), number of seed per head (525.56), weight of single seed (1.03 mg), and weight of seed per head (54.96 gm) of sunflower were observed in T_3 treatment which was statistically different from all other treatments. Again, the highest sunflower yield (1.95 kg/plot or 2.48 ton/plot) was also observed from T_3 treatment. So, T_3 (Mechanical control + carbaryl 50 WP @ 2 gm/L of water at the 10 days interval) was an eco-friendly pest management practice for sunflower which significantly reduce pest infestation and gave quality yield.

*Professor, Dept. of Entomology Sher-e-Bangla Agricultural University, Dhaka, Bangladesh