Effect of Panchagavya on Insect Populations Associated with Cabbage and Cabbage Plant Growth

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Panchagavya is an organic formulation, prepared using cow milk, curd, ghee, cow urine, and cow dung. It is sprayed on crops with the expectation of suppression of pest populations and promotion of plant growth. This study was conducted with the objective of assessing the insecticidal properties and plant growth properties of panchagavya application on cabbage. The treatments included: 5% concentrated panchagavya applied at four day intervals (T1), eight day intervals (T2) and DOA recommended insecticide: chlorantraniliprole 200 g/LSC (Coragen) (T3) with untreated control. The growth of cabbage plants and population dynamics of cabbage-associated insects were recorded. In addition, laboratory experiments were conducted to assess antifeedant activity and toxic effects of punchagavya. There were significant ($P<0.05$) differences among treatments in relation to all growth parameters and a comparatively high performance was observed in T1. Mean stem height, fresh weight of open leaves, fresh weight of unopened leaves (head), and root weight were 12.13±0.18, 292.34±3.46, 76.69±2.58 and 36.14±1.33, respectively in T1. The mean larval populations of *Spodoptera litura* (7.25±1.23), *Crosidolomia binotalis* (7.25±1.86) and *Trichoplusia ni* (8.57±1.604) per plant were found to be the lowest in T3 where insecticide was applied, followed by T1. The mean population of the above insects over six weeks in T1 were 11.38±1.72, 11.63±2.18 and 11.85±1.60, respectively. In laboratory tests, a significant ($P<0.05$) difference was observed in leaf feeding area between punchagavya-treated (6.25 cm^2±0.23/larva) and untreated control (11.60±0.37 cm^2/larva). The mean larval mortality was 60±5.61% in punchagavya-treated samples and no mortality in the control. With these results, it can be concluded that the use of punchagavya on cabbage at four day intervals is beneficial.

Keywords: Cabbage caterpillars, Contact toxicity, Panchagavya, Repellent effect

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