

## Effect of diet on detoxification enzyme activity of *Platynota idaeusalis* (Walker) (Lepidoptera: Tortricidae) larvae strains

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### Abstract

The effect of diet on detoxification enzyme capabilities in two genetically similar strains (one susceptible and other resistant to azinphosmethyl) of the tufted apple bud moth, *Platynota idaeusalis* (Walker) (Lepidoptera: Tortricidae), was studied by biochemical methods. The larvae were fed with a synthetic diet and four different host plant species: apple, *Malus domestica* (Bork.) cv Red Yorking; black raspberry, *Rubus occidentalis* L.; broad-leaved plantain, *Plantago major* L.; and dandelion, *Taraxacum officinale* Wiggers. Host plant affected larval detoxification enzyme activity in both the resistant and susceptible strain. Glutathione transferase and esterase activities, both implicated in *P. idaeusalis* resistance to azinphosmethyl, varied significantly between strains and among hosts. Diets of apple and plantain appeared to inhibit both enzyme systems compared to artificial diet in both insect strains. However, patterns of enzyme activity and azinphosmethyl susceptibility are not clearly linked, reinforcing the complex relationship of the insect with the chemistry of its host.

**Key words:** diet-insect interaction, *Platynota idaeusalis*, resistance, detoxification enzyme activity.

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