

TOXICITY AND FEEDING DETERRENCY OF HYDROXAMIC ACIDS FROM GRAMINEAE IN SYNTHETIC DIETS AGAINST THE GREENBUG, SCHIZAPHIS GRAMINUM

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2,4-Dihydroxy-7-methoxy-1,4-benzoxazin-3-one (DIMBOA), the main hydroxamic acid isolated from maize extracts, increased the mortality of *Schizaphis graminum* when fed in artificial diets. Electrically-monitored feeding assays showed that DIMBOA acted as a feeding deterrent at concentrations as low as 1 mM. On 12 mM DIMBOA diets, feeding by aphids was completely inhibited. Additional feeding experiments showed that when DIMBOA was ingested there was an increase in aphid mortality relative to that of aphids which did not ingest the compound. Thus, the deleterious effects of DIMBOA on aphids are due to feeding deterrency and toxicity. The β -D-glucoside of DIMBOA (DIMBOA-Glc), the form in which DIMBOA naturally occurs in Gramineae, had a slight effect on lowering aphid survival and an appreciable feeding-deterrent effect on diet-fed aphids. The relevance of the effects of DIMBOA and DIMBOA-Glc on aphids to resistance of certain graminaceous crops against aphids is discussed. Toxicité et r