

Evaluation of DIMBOA analogs as antifeedants and antibiotics towards the aphid *Sitobion avenae* in artificial diets

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A total of 25 compounds including benzoxazinones, benzoxazolinones, and N-glyoxylamide derivatives were tested as antifeedants and antibiotics towards the aphid *Sitobion avenae* in diet bioassays. The antifeedant and mortality indexes increased with the presence of electron-donating groups in the 7 position of the benzoxazinone moiety, the replacement of the oxygen atom by sulfur in the heterocyclic ring, the presence of a hemiacetal instead of an acetal at C-2 of the benzoxazine moiety (and hence the possibility of ring opening), and the presence of a hydroxyl group at C-4 of the benzoxazine moiety (hydroxamic acid) instead of a hydrogen atom (lactam). The results support earlier hypotheses on the chemical bases for the mode of action of these compounds.