

Hydroxamic acids affecting barley yellow dwarf virus transmission by the aphid *Rhopalosiphum padi*

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2,4-Dihydroxy-7-methoxy-1,4-benzoxazin-3-one (DIMBOA), a hydroxamic acid (Hx) occurring in wheat, was shown to deter feeding by the aphid *Rhopalosiphum padi* (L.), and to reduce BYDV transmission to the plant. Dual choice tests with wheat leaves showed the preferential settlement of aphids on leaves with lower levels of DIMBOA. Electric monitoring of aphid feeding behaviour showed that in seedlings with higher DIMBOA levels fewer aphids reached the phloem and they needed longer times to contact a phloem vessel than in those with lower levels. When aphids carrying BYDV were allowed to feed on wheat cultivars with different DIMBOA levels, fewer plants were infected with BYDV in the higher DIMBOA cultivars than in the lower ones. Preliminary field experiments showed a tendency for wheat cultivars with higher Hx levels to be more tolerant to infection by BYDV than lower Hx level ones. 1991 The Netherlands Entomological Society