

TECHNICAL REPORT TO THE NEW YORK STATE IPM GRANTS PROGRAM

Title: Reducing Damage from Potato Leafhoppers on Alfalfa in New York through Variety Selection: A Comparison of Resistant vs. Susceptible Varieties

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Abstract:

Alfalfa variety trials were planted in 1997 at two locations in New York: Ithaca in Central New York and Clarendon in Western New York. Varieties in these trials were either resistant or susceptible to potato leafhopper (PLH), *Empoasca fabae* (Harris), the most damaging insect pest of alfalfa in the Northeast. In the seeding year, the Ithaca trial was severely damaged by PLH and the Clarendon trial was moderately damaged by PLH. Sweep data in 1998 at Clarendon indicated that the PLH population was above threshold only at Harvest 2 (22 July). Yields of resistant varieties were significantly lower than susceptible varieties when PLH were below threshold. When PLH were above threshold, average second harvest yields were equivalent for susceptible and resistant varieties. At Ithaca, sweep data indicated that the PLH population was not above threshold at any of the nine sampling dates in 1998. However, first and second harvest yields of resistant varieties were significantly higher than susceptible ones, and second harvest PLH damage scores, and PLH nymph and adult counts were significantly lower on resistant varieties than on susceptible ones. The yield advantage of the resistant varieties may be due to carryover effects from seeding year damage, since PLH were below threshold in 1998. Resistant varieties had higher protein concentration at both locations. The value per acre was higher (\$19/A) for resistant varieties than susceptible varieties at Ithaca, and was lower (-\$6/A) for resistant varieties at Clarendon.

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