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Cooperative Extension

Yield Results From Sprayed and Unsprayed Glandular-haired and Potato Leafhopper Susceptible Varieties in Pierce, Juneau and Chippewa Counties, Wisconsin 2005 and 2006.

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Purpose

A series of on-farm research plots were established by UW-Extension and UW-Agricultural Research Station personnel to compare yield of late-generation glandular-haired alfalfa varieties and a grower selected potato leafhopper susceptible variety under high potato leafhopper populations in both sprayed and unsprayed plots.

Methods

Plots were established in 2004 by planting a potato leafhopper susceptible variety and a glandular-haired (GH) variety, side-by-side. Yield data was not taken during the seeding year, however plots were scouted and potato leafhoppers controlled if the economic threshold was exceeded. During the first and/or second production year, the potato leafhopper susceptible variety was swept for potato leafhoppers at weekly intervals starting in second crop regrowth. An insecticide was sprayed across a portion of both varieties if potato leafhopper populations increased to the economic threshold. This approach resulted in sprayed and unsprayed blocks for both the GH and potato leafhopper susceptible varieties. Yields were taken by weighing two 10-foot sections of the windrow at random. A grab sample was used for moisture determination. Yields were not taken if leafhopper populations did not build to the economic threshold.

Results

Yield data was collected during the 2005 and 2006 growing season from 6 cuttings in plots from Pierce, Juneau and Chippewa Counties (2 plots). Yields were combined for all cuttings and from all locations prior to data analysis (Table 1).

Yield from the GH/sprayed treatment was significantly higher than both the susceptible/unsprayed and susceptible/sprayed treatments but not statistically different than the GH/unsprayed. Yields from both the susceptible/sprayed and susceptible/unsprayed treatments were not statistically different from the GH/unsprayed treatment. The data indicates no yield drag due to the glandular hair trait in new alfalfa varieties. Further, the highest yield was obtained by use of a glandular hair trait variety with scouting and spraying when threshold was exceeded. This treatment likely gave the highest yield because there was less sensitivity to PLH at low levels that impacted yield in the non-glandular hair varieties.

Table 1. Yield Results from harvests where PLH exceeded threshold from sprayed and unsprayed Potato leaf hopper Glandular Hair and susceptible varieties in Pierce, Juneau and Chippewa Counties, 2005 and 2006

Treatment	Dry Matter (Tons/A)/cutting ^a
GH/sprayed	1.49 a
GH/unsprayed	1.36 ab
Susceptible/ sprayed	1.19 b
Susceptible/ unsprayed	1.23 b

^a means with a column followed by the same letter are not significantly different (P=0.05, Duncan's New Multiple Range Test)

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