Research findings on tall fescue and potato leafhopper reported at last summer’s American Forage and Grassland Council Conference in Bloomington, Illinois have meaning for Illinois forage producers.

University of Illinois researchers reported on whether competitive displacement of endophyte-free (E-) tall fescue by endophyte-infected (E+) tall fescue would occur if E- fescue was planted in mixture and grazed using rotational stocking. Historically, replacement of E+ pasture with E- can effectively eliminate the toxicosis problem in cattle; however, the E- varieties are less competitive and are usually replaced over time.

The study began in 2001 with nine tall fescue-dominated pastures in western Illinois being completely renovated and planted with mixtures that contained ‘Barcel’ E- fescue and 2, 4, or 7 additional species. Pastures were grazed by beef cattle for 3 years using rotational stocking. Tall fescue tillers were collected each September for microscopic analysis of endophyte presence.

Mixtures renovated with E- tall fescue and sown with 2 species had the lowest E+ level averaging 18%. E- fescue mixtures with 4 and 7 species averaged 28% and 38% E+, respectively. Contrary to other studies, the level of E+ fescue in E- pastures did not increase over time. The researchers concluded that moderate grazing pressure under rotational stocking combined with relatively wet growing seasons contributed to these results. If E+ fescue persists after renovation, moderate grazing pressure and rotational stocking methods may prevent its spread into E- pastures.

Potato leafhopper (PLH) is a major insect pest of alfalfa. Varieties with a high resistance to PLH greatly reduce yield loss when this pest is not controlled; however, some yield loss still can occur when PLH populations are high. Ohio State University researchers documented yield loss in varieties relative to the number of naturally occurring PLH.

Total yield over three years for the untreated (no insecticide) resistant variety was 0.8 ton/acre (0.27 ton/acre per year) lower than the susceptible variety treated with insecticide in a timely manner. The value of that yield difference was equivalent to the cost of insecticide treatment on the susceptible variety, so the economic returns were equal for the untreated resistant and the insecticide treated susceptible.
variety. PLH populations were much lower in the resistant variety and economic loss was observed at only 4 of the 14 summer harvests, and only when PLH populations were three to four times higher than the normal economic threshold used for susceptible alfalfa.

The researchers concluded that the economic threshold for alfalfa varieties with high levels of PLH resistance (greater than 50%) is about three to four times higher than the economic threshold for susceptible alfalfa.

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