Improving Alfalfa Weevil Management in the Central High Plains: Resistance Screening, Overwinter Survival, & Population Monitoring

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Alfalfa weevil, *Hypera postica* (Gyllenhal), is a major pest of alfalfa in the U.S., causing serious defoliation when heavily infested. Pyrethroid insecticides have been commonly used for management, and resistance to pyrethroids was recently documented in the western and southern U.S. However, whether resistance has developed in the Midwest is largely unknown. In addition, due to more frequent mild winters in the central Midwest and central high plains, increased overwinter survival and changes in spring population dynamics could further complicate alfalfa weevil management. In spring 2026, alfalfa weevil populations from Nebraska, Iowa, Illinois, and Ohio were tested for susceptibility to pyrethroids. Preliminary data indicated potential reduced pyrethroid susceptibility in over 75% of populations tested (n=14) based on mortality at a diagnostic rate. In western Nebraska, the overwinter survival of alfalfa weevil eggs in alfalfa fields was monitored from October 2025 through March 2026. Average egg hatching rate was over 60% during what was a mild winter, suggesting potential contribution of overwintering eggs to spring infestation. Population monitoring in spring 2026 in Western Nebraska showed earlier than normal weevil activity highlighting the importance of choosing an appropriate biofix date for degree-day models. Findings from this project will guide and improve alfalfa weevil management strategies for alfalfa production in the central Midwest and central high plains.