Assessment of Alfalfa Pest Management Challenges in Wyoming

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Introduction
Alfalfa hay is a major crop throughout the Intermountain West, including Wyoming. In 2014, farmers in Wyoming produced 1.27 million tons. But they, along with producers around the country, face a variety of issues, including crop susceptibility to a suite of insect pests, notably the alfalfa weevil, Figure 1. Considerable economic and environmental costs of chemical pest management highlight a critical need to develop more effective and efficient control strategies. This need aligns with the goal of many Wyoming producers to improve agricultural productivity considering economic viability and stewardship of natural resources. An essential first step to accomplishing this goal is to assess the current state of alfalfa pest management challenges and strategies in Wyoming so that new or modified approaches align with farmer priorities.

Objectives
Our specific objective is to define farmer priorities and decision-making strategies regarding pest management through surveys distributed statewide.

Materials and Methods
In 2015, we worked with the U.S. Department of Agriculture’s National Agricultural Statistics Service (NASS) to mail surveys to all 3,141 alfalfa producers throughout Wyoming. We asked farmers how they marketed their alfalfa (hay, seed, or on-farm feed), which alfalfa pests they had encountered, which pests they considered most problematic, and how they solved these pest problems. We also asked farmers whom they turn to for advice on alfalfa production.

Results and Discussion
Surveys were returned from 634 Wyoming producers (20.2% of those surveyed). Though we are still analyzing and summarizing the wealth of information gained from this project, we present an initial summary here. Producers most often named alfalfa weevil as the most problematic insect pest in alfalfa production (66% of respondents), followed by grasshoppers (18%), aphids (7%), and lygus bugs (2%).

We wanted to know which management practices producers considered most effective. For those who named alfalfa weevil as most problematic, 74% considered insecticides as most effective, with only 5% naming early harvest as most effective. With regard to grasshoppers, 57% of farmers considered insecticides as most effective, and 22% early harvest most effective.

Producers were asked to name major challenges in alfalfa production aside from insect pests.

The most frequently mentioned challenges related to water management—including drought and water shortage—as well as irrigation challenges, such as getting enough water to the crop. Producers also named many kinds of weeds, small and large mammal pests, and challenges with soil quality and fertility.

Farmers reported seeking advice from neighbors and fellow farmers, and most indicated that these people are also their friends. Thus, advice networks among alfalfa producers are characterized by friendship. Given that friends are typically accorded higher trust than advisers, it is likely easier to disseminate information and have this information be trusted.

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To best address producer problems in the future, our research suggests that we need to find effective solutions for not only the most problematic insect pests, but ideally solutions that can be well-integrated with other management challenges, like weed management and mammal pests.

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Figure 1. Adult alfalfa weevil. (Photo courtesy Joseph Berger, Bugwood.org.)