

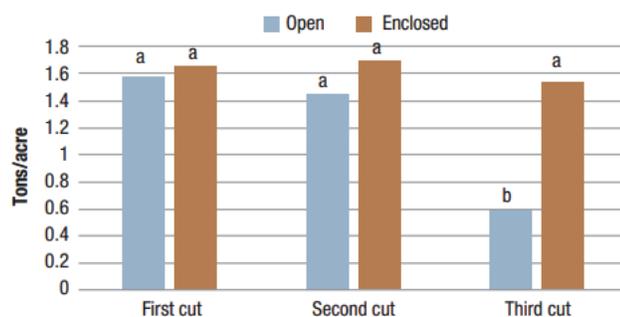
## Development of an economic threshold for thrips damage on Idaho alfalfa crops

### AT A GLANCE

Alfalfa growers experienced yield losses due to thrips feeding. IPM strategies depend on economic thresholds to time control measures.

### The Situation

University of Idaho Extension educators along with Oregon State specialists, crop advisors and hay growers began observing damage from two species of thrips on alfalfa crops in Bingham and Jefferson counties. It was determined that an integrated pest management (IPM) approach to controlling this damage was needed. IPM methods rely on economic impact thresholds to determine the proper timing and implementation of pest control measures. No economic threshold existed for thrips in alfalfa.



Thrips feeding effect on alfalfa yield. Data with the same letter are not significantly different.



Observed feeding damage from western flower thrips on alfalfa. Photo Credit: Reed Findlay.

### Our Response

Our team completed field research over the course of three years to determine the extent and origin of the thrips infestations. The team that worked on this pest issue included educators, specialists, industry representatives and growers. These research projects eventually assisted in the determination of the damage to the plants and the resulting yield losses. The concluding research assisted in the calculation of a current economic threshold for this pest. This threshold pinpoints the timing of pest control measures to maximize profitability in an integrated pest management program. University of Idaho Extension Critical Issues grant monies funded the majority of this research.

Losses associated with thrips damage to alfalfa crops.

Thrips per six stems	Yield loss (tons per acre)	Yield loss (cost per acre)
0	0	0
1	.01	1.84
2	.02	3.69
5	.06	9.22
10	.12	18.45
12	.14	22.14
15	.17	27.67
17	.20	31.36
20	.23	36.90
25	.29	46.12
50	.58	92.24
75	.86	138.37
100	1.15	184.49
150	1.73	276.73
200	2.31	368.98

## Program Outcomes

The results of this team’s work have been shared and presented at local and national educational programs. These include University of Idaho forage schools, Idaho Hay Association meeting, Ag Talk Tuesday (an online Extension crop update forum), in-service trainings for educators and industry field researchers, and the National Association of County Agricultural Agents’ Professional Improvement Conference. Program results have also been published in popular press articles such as “AG Proud,” as well as professional proceedings and journals.

Alfalfa growers are now armed with the economic threshold information and models that will enable them to implement more effective integrated pest management programs aimed at thrips pest populations.

## The Future

New and novel pest issues will be a continuing hurdle to alfalfa production. In the past few weeks, we have become aware of a root and crown nematode attacking alfalfa crops and possibly causing yield losses. We are in the process of evaluating this pest and developing a team to address research and educational needs.

## Cooperators and Co-Sponsors

The Bingham Cooperative field researchers devoted time and resources for the thrips monitoring program in the Blackfoot area. They assisted in the initial discovery of this insect pest issue as well as the dissemination of research results to area hay producers at their grower meetings.

## FOR MORE INFORMATION

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