

Section VI
Pest of turf and ornamentals

INSECTS FOUND IN GRASS SEED FIELDS IN EASTERN OREGON

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Problems with pest management, specifically arthropods (insects, mites), can be acute in eastern Oregon since many of the pest control strategies developed for more traditional grass seed production areas are inappropriate or ineffective for Columbia Basin conditions. While research the past several years has contributed greatly to the understanding of insect issues, there is still much to learn. The main objective of this research is to survey arthropod pests and beneficials in eastern Oregon to evaluate the role of emerging or new emerging pests such as sawfly incidence or other caterpillars in the area.

Materials and methods

A survey of arthropod pests in seed grass crops was conducted during from 2006-2009 <http://cropandsoil.oregonstate.edu/seed-ext/Pub/2007/18-Rondon.pdf>. Six commercial Kentucky bluegrass fields were included in the 2006 and 2007 survey; three fields were included in 2008 and 2009. Fields were split in replicated plots. Pitfall traps, sweep net and sod samples were taken in each section of each field. Six pitfall traps replicated four times were placed at each location to collect insects that were moving in the field. Ten sweeps replicated four times were taken in each field. Six sod samples 1 ft in diameter by 4 inches deep replicated four times were collected at each location. In all years, arthropods were collected from the traps weekly. In 2008 a handful of species were selected based on their high number, and their role in the grass ecosystem was investigated the following year. Preliminary research showed that millions of

springtails can be present in the grass crop. Growers have indicated their concern regarding those high numbers and the potential effect springtails may have moving diseases in their crops. It remains unanswered if the presence of springtails relates to disease incidence such as ergot or if springtails can cause secondary damage. This concern will guide some future research. Only pit fall trap data from 2006-08 will be presented on this article.

Results

Table 1 shows the average number of arthropods per Order per week (2006-08). The most abundant groups were: springtails, mites, spiders, flies, and various families of beetles. Springtails (Order Collembola) are part of the community of decomposers that break down and recycle organic wastes. Springtails can be identified because they "hop" by snapping their furcula ('tail') against the substrate; they may propel themselves up to 20 cm in the air. The two species identified in eastern Oregon were *Isotoma* and *Sinella*. Information regarding both species is limited. Due to their large numbers in the area, growers are concerned. Springtails have been observed "jumping" all over grass leaves. However, their role in the grass ecosystem is still unclear. Although it is unlikely that they are causing damage to grass plants or are having a detrimental effect on yield; we speculate that they can potentially move disease spores, but this hypothesis needs further investigation.

Spiders (Order Arachnida) are well represented in the grass system with the two families Lycosidae and Linyphiidae being the most abundant. Both families are beneficial. It is rarely useful to apply pesticides to control or eliminate spider infestations although some growers and specially homeowners may disagree on that statement.

Six different families of beetles (Order Coleoptera) were found during our survey. One of the most predominant is the rove beetles (Family Staphilinidae) which occurs in a variety of habitats. Some species are considered beneficial since they feed on insect pests.

Sawflies (Hymenoptera: Cephidae) (Figure 1) are important re-emerging feeding insect pest of wheat and other cereals, but they are also found on a broad range of grass hosts. They attack native and many common exotic species of grass such as smooth brome grass (*Bromus inermis*), timothy (*Phleum pratense*), and quackgrass (*Agropyron repens*). Currently, it is not clear which species of sawflies we have in the region, thus we are in the process of collecting and identifying sawflies in the lower Columbia Basin. Also, damage in the region will be estimated during the following growing season. An extensive mailing list of Columbia Basin grass growers, field representatives, financiers, seed industry representatives, and ag-chemical company representatives has been established and will be updated and used to notify important pest alerts.

Literature Cited

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Table 1. Average number of individuals per Order per week collected with pit fall traps in Kentucky bluegrass in Hermiston OR, 2006 - 2008.

Order	Common name	Average no of individuals/week		
		2006	2007	2008
Acari	Mites	60	163	218
Arachnida	Spiders	75	605	325
Collembola	Springtails	36748	13485	28654
Orthoptera	Grasshoppers	16	4	5
Thysanoptera	Thrips	3	13	8
Hemiptera	True bugs	74	37	41
Homoptera	Leafhoppers	102	120	112
Coleoptera	Beetles	133	858	658
Diptera	Flies	224	229	234
Hymenoptera	Wasps	2	2	2