LYGUS IN WESTERN LANDSCAPES: PACIFIC NORTHWEST

Doug Walsh[1]

The Pacific Northwest is divided by the Cascade mountain range. The westside of the Cascade range receives abundant rainfall (>40 inches annually) and winter and summer temperatures are moderated by proximity to the Pacific Ocean. Areas east of the Cascade range are covered by a rain shadow that is created by the mountains. This primarily semi-arid landscape can receive as little as 3 inches of rainfall in some locations. However, rainfall typically increases with increased distance east of the mountains. Some areas in Eastern Washington State and Western Idaho can receive up to 30 inches of rainfall.

Washington State produced approximately $5 billion in agricultural products in 1997. Roughly 80% of the agricultural production is in the semi-arid regions of eastern Washington State. With the exception of dry beans, lentils, and some grain crops (wheat and barley) most of the agricultural production east of the Cascade mountains depends on irrigation. It is within these areas that Lygus bugs are a pest in the Pacific Northwest

Table 1 details the crops on which Lygus bus are considered a agronomic pest in the Pacific Northwest. (DeAngelis et al. 1999). Lygus in the Pacific Northwest have an extensive host range of both introduced and exotic plants and weeds (Table 2). Lygus overwinter as adults in plants and plant debris. Russian, thistle, Kochia, smotherweed, mullein, horseweed, sweetclover, wild mustards, ragweed, and sagebrush are among many plants that persist in the Pacific Northwest that serve as good overwintering hosts for Lygus. Overwintering Lygus adults become active as temperatures warm in spring. They mate soon after emerging and mated females begin laying eggs several days hence. A phenology model (Pickel et al. 1990) that proved effective at predicting subsequent Lygus generation cycles in California has been tested in the eastern Washington. The model has proven relatively accurate at predicting the first generation hatch of Lygus in spring in Eastern Washington. However, the model loses predictive accuracy as spring progresses (Dan Mayer, personal communication). Lygus bug populations typically will complete 3 generations per year in Eastern Washington, Eastern Oregon, and Western Idaho. Insecticide resistance has been documented in Lygus populations infesting alfalfa and vegetable seed crops.

In limited field surveys conducted during summer of 2000 we observed a greater abundance of Lygus in field sites with established stands of exotic flowering weedy plants then in sites comprised mainly of native bunch grasses (Walsh and Wight 2000). Human influence though plant introduction and irrigation has increased Lygus bug Populations in the Pacific Northwest.

[1] Extension Entomologist, Washington State University.

Table 1. Crops with chemical controls recommended for Lygus suppression in the Pacific Northwest Insect Control Handbook.

Dry beans	Lima beans	Snap beans
Lentils	Potatoes	Sugar beets
Strawberries	Caneberries	Spinach
Apples	Pears	Forage crop seeds (alfalfa)
Prunes	Plums	Several vegetable seed crops
Apricots		

Table 2. Common weed hosts for Lygus in the Pacific Northwest

Wild radish	Mustards	Chickweed	Filaree
Redmaids	Shepherdpurse	Lupines	Burclover
Canada thistle	Curly dock	Smart Weed	Knotweed
Lambsqurters	Pigweed	Common groundsel	Pineappleweed
Kochia	Mullien	Russian thistle	Sage
Ragweed	Pepperweed	Rabbit brush	horseweed

REFERENCES

DeAngelis and others. 1999. Pacific Northwest Insect Control Handbook.

Pickel, C., D.B. Walsh, & N.C. Welch. 1990. Using degree-days to time insecticide sprays for Lygus control. Santa Cruz County Extension Publication. pp. 6

Walsh, D., & R. Wight 2000. Riparian Buffer Zones, Field Studies Summer 2000. Agrichemical and Environmental News. Issue No. 174. http://www2.tricity.wsu.edu/aenews/ November 2000