Japanese Beetle:
Threat and Opportunity in Oregon

IPPM Insect Pest Prevention & Management

Oregon Department of Agriculture

Threat

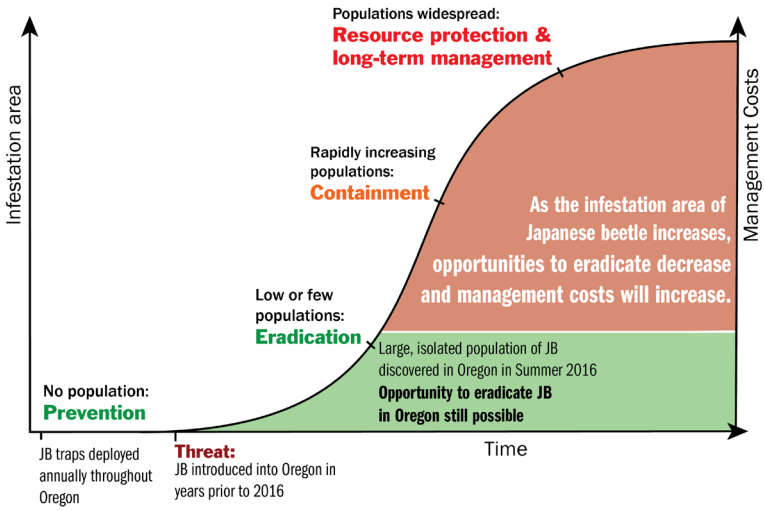
An infestation of Japanese beetle was detected by the Oregon Department of Agriculture in the summer of 2016 in northwest Portland in Washington County, Oregon. The Japanese beetle, a native of Japan, is a destructive garden pest that was first found in the United States in New Jersey in 1916. It has slowly moved across the Eastern United States and is well known for eating the flowers, leaves, berries and fruit of over 300 species of plants. In the last 30 years, Japanese beetle has been detected and successfully eradicated in Oregon several times. The state policy is to eradicate Japanese beetles before breeding populations can establish. This is because this pest is potentially destructive to roses, grapes, orchard fruits, cane berries, corn, hops, outdoor cannabis and urban forest trees. Beetles in nursery stock could also impact exports from the state. The beetles detected in NW Portland were likely from infested plants that originated from the eastern United States and were imported to Oregon in the last few years.

This invasive pest can be destructive in multiple life stages. As an adult, it feeds on leaves creating a pattern known as "skeletonizing" (shown below). The feeding results in the defoliation of the plant. Defoliated plants are more susceptible to disease, stress, and have higher death rates. Roses are highly susceptible to this type of damage. As an immature "grub" it feeds on the roots of grasses, limiting the plant's ability to acquire water, creating dead areas of grass or turf. When plants are defoliated, they not only lose their leaves, but also the ability to photosynthesize. Without photosynthesis, essential ecosystem services such as purifying air, maintaining water quality along streams and rivers, and mitigating extreme temperatures (via shading) are affected. Wildlife habitats can be degraded and biodiversity may be affected.

Japanese beetle damage on roses, photographed in Portland, Oregon in the summer of 2016.

Popillia japonica, Japanese beetle adult shown in detail (left) and actual size, and a larvae or "grub" (right) which are found in soil.

Gardens, forests, and agriculture are an essential part of Oregon's character, economy, landscape, and ecological function. If we do not eradicate the current population, it will be much more expensive and difficult to control a much larger population. Additionally, if the beetle were to become widely established, homeowners and crop producers would experience ongoing defoliation events, rising pest control costs, and increased pesticide usage.



Invasive species curve for Japanese beetle (JB) in Oregon, showing the management options as the infestation area increases over time. (Adapted from LeRoy Rodgers, SFWMD.)

Opportunity

Since the Japanese beetle was recently detected in the summer of 2016, we have a unique and small window of opportunity to ensure the population does not become established in Oregon. If we are able to eliminate infestations of Japanese beetle by beginning treatments in 2017, then we can avoid a widespread, established population in Portland.

The invasive species curve (pictured on reverse) helps us to understand the ramifications of an invasive species developing a permanent population. The Japanese beetle infestation is currently at the beginning of the curve, which is why we have a unique and small window of opportunity when resource costs are low. Without eradication, we will be unable to manage the species without significant resource investment.

A science advisory panel consisting of experts across the United States came together in late 2015 to develop a plan for responding to the Japanese beetle in California and other western states. After examining a number of options, they concluded that a single application of the pesticide Acelepryn in late April or early May would be the best option. Acelepryn is a low-risk insecticide that does not present a hazard to humans or domestic animals. This product, a granular formulation that is applied using a seed spreader, is commonly used for pest control on turf and targets turf-dwelling insects such as billbugs, white grubs, and crane flies. It has been used since 2009 in Oregon, Idaho, California, and Utah for Japanese beetle eradication projects. In each case, the beetle has been successfully and safely eradicated. The treatment proposal is subject to approval by the Oregon Department of Agriculture Director and available funding.

For more information:

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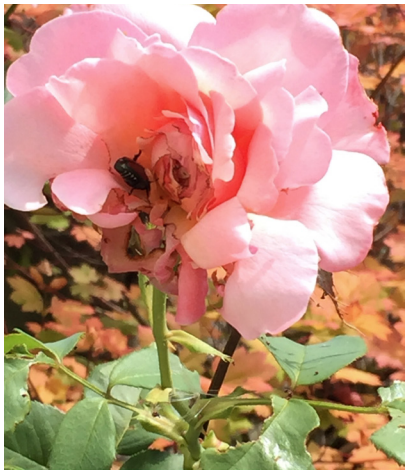

Japanese beetle feeding on a rose, photographed in Portland by ODA during the summer of 2016.

Currently, a coalition of multiple agencies in Oregon are developing a plan of action using the Science advisory panel's recommendations.

Oregon Department of Agriculture will continue to educate and collect information from the public before making a decision as to whether to treat the 1000 acre infestation in NW Portland. The decision to treat will also depend on receiving the needed funding to conduct the ground treatment operation, industry support, and community support.

Get Involved

1. Request a briefing by contacting the Oregon Department of Agriculture to have a specialist come talk to your group about Japanese beetle.
2. Learn more about Acelerypn by visiting the Oregon Health Authority's page at **www.bit.do/oha-jb**
3. Submit your questions and concerns about the project to: **japanesebeetle@oda.state.or.us**
4. For opportunities on how to get involved, check the website at **www.japanesebeetlepdx.info**

References:

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