THE BLUE ALFALFA APHID
A New Insect Pest on Alfalfa

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What Is It?

The blue alfalfa aphid is a bluish-colored aphid, closely related to the pea aphid, which commonly occurs on alfalfa throughout the Pacific Northwest. It is nearly identical to the pea aphid in size and coloration, and is of concern because it causes injury to alfalfa at much lower numbers than the pea aphid. Even light populations of blue alfalfa aphids can stunt plants and cause terminal dieback.

History

The blue alfalfa aphid is believed to have been introduced into California from Japan in 1975. In the past 3 years it has spread throughout much of the western United States and has been reported from Nevada, Utah, Arizona, New Mexico, Kansas, Oklahoma, Nebraska, Washington, and Oregon. It is present in southwestern Oregon and in certain portions of central and eastern Oregon. Collections have been made from alfalfa and sweet clover in Wasco, Crook, Lake, Jackson, Josephine, Harney, Grant, Morrow, Umatilla, Gilliam, and Wheeler counties in 1977 and 1978. In the spring of 1978 it was reported causing damage to alfalfa fields grown for hay in the Medford and Grants Pass areas. This aphid may become a serious pest of alfalfa throughout Oregon and the Pacific Northwest within the next few years.

Description

In the field the blue alfalfa aphid is nearly indistinguishable from the common pea aphid. However, as its name implies, the blue alfalfa aphid has more of a bluish coloration than the pea aphid. Also, the third antennal segment of the pea aphid shows a narrow, dark band at the tip. This can be observed using a good (10x) hand lens. This same segment is uniformly brown on the blue alfalfa aphid. Additionally, the thorax appears a dark, blackish-brown on the blue alfalfa aphid and a very light brown on the pea aphid.

The blue alfalfa aphid shows a preference for the rapidly expanding terminal growth of the alfalfa plant. In contrast, the pea aphid is usually found at random on the stems and leaves.

Damage

There are no established injury levels for the blue alfalfa aphid in Oregon, as it is a new pest. Observations by entomologists in Arizona and California over the past 3 years indicate that the blue alfalfa aphid can cause damage at lower numbers than the pea aphid. As few as 20 aphids per stem have caused measurable damage. Apparently, this is because the blue alfalfa aphid injects a toxin into the alfalfa plants along with its saliva, during the feeding process. The evidence for this is that certain symptoms such as short internodes, yellow color, and deformed leaves occur after small populations of the aphids begin feeding on the plants.

Outlook

In May of 1978 the blue alfalfa aphid caused severe damage to alfalfa grown for hay in southwestern Oregon. Mixed populations of the pea aphid and the blue alfalfa aphid can occur and may cause moderate to severe damage. Heavily infested plants appear stunted and may show white flagging.

Growers and fieldmen should keep a close eye on alfalfa, both for signs of damage and for large aphid populations. None of the commercial vari-
eties of alfalfa that are grown in Oregon for seed or for hay are known to have resistance to the blue alfalfa aphid. Plant breeding programs are screening certain plant materials for resistance to it. This aphid appears to be a cool-weather-adapted species, with the highest populations occurring in late winter or early spring in the southwestern states. The southwestern Oregon damage was reported in May but in the Prineville area, under central Oregon high temperature conditions, it occurred in August.

Control

Insecticides registered for control of the pea aphid have given satisfactory control of the blue alfalfa aphid. These materials include Disulfoton, demeton (Systox), malathion, parathion, diazinon and dimethoate. It is important to observe label restrictions, rates, and cutoff dates between application and harvest. Plan to control other pests that occur at the same time as aphids when making the decision to control aphids on hay. If large numbers of the blue alfalfa aphids are present immediately before harvest, cut the hay early. The reduced amount of leaf surface area on which to feed and the increased temperatures that result from the cutting will help to control populations of the blue alfalfa aphid environmentally. When weather remains cool or the stubble is lush in growth, however, it may be necessary to spray the aphids that are left on or about the crown. Carbofuran (Furadan) and methidathion (Supracide), which are excellent for alfalfa weevil control, will also give control of the blue alfalfa aphid.

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