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Alfalfa aphid problems noted in central Illinois

Abstract

Cowpea aphids are a recent addition to the alfalfa fauna of Iowa with our first damaging populations found in northwestern Iowa in late July 2002. Since then they have sporadically caused damage, mostly during dry conditions, but no damage has been widespread across the state. This year Kevin Black, agronomist with GROWMARK, Inc. in Illinois, reports large populations of this insect, plus pea aphids, in numerous fields along the Interstate 70 corridor.

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Insects and Mites

Alfalfa aphid problems noted in central Illinois

by Marlin E. Rice, Department of Entomology

Cowpea aphids are a recent addition to the alfalfa fauna of Iowa with our first damaging populations found in northwestern Iowa in late July 2002. Since then they have sporadically caused damage, mostly during dry conditions, but no damage has been widespread across the state. This year Kevin Black, agronomist with GROWMARK, Inc. in Illinois, reports large populations of this insect, plus pea aphids, in numerous fields along the Interstate 70 corridor. It does seem too early this spring for cowpea aphid problems, but the situation in south-central Illinois should serve as a warning for alfalfa producers in southern Iowa to watch for this pest. Mark Carlton, field specialist—crops, reported that pea aphids were abundant (25–50 per sweep) in Monroe County, north of Albia, but no cowpea aphids were present. Pea aphids prefer cooler temperatures and are therefore more common in the spring.

No studies have been conducted on the cowpea aphid in Iowa, so the information we have comes mostly from California. The following is a brief summary on cowpea aphids developed by University of California entomologists Charlie Summers and Larry Godfrey.

Identification

Cowpea aphid is readily distinguishable from other aphids inhabiting alfalfa because it is the only black aphid found infesting the crop. It is a relatively small aphid, and the adult is usually shiny black, whereas the nymph is slate gray. The appendages are usually whitish with blackish tips.

Hosts

Cowpea aphid has an extensive host range. In addition to alfalfa, it infests many other legumes, as well as shepherds purse, lambsquarters, smartweed, and curly dock.

Damage

Cowpea aphid has been a longtime resident of alfalfa in California. Although frequently present in low numbers, it has rarely, if ever, reached population levels that cause damage. In winter 1999, cowpea aphid was found stunting the alfalfa and causing serious injury. As temperatures warmed and the alfalfa resumed growth, plants failed to grow because of heavy aphid populations. This aphid produces a considerable



Cowpea aphids on alfalfa stems. (Marlin E. Rice)

amount of honeydew upon which sooty mold grows. The honeydew also makes the alfalfa sticky, which causes problems with harvest.

Resistant varieties

There are no known alfalfa varieties that are resistant to cowpea aphid.

Biological control

This aphid is susceptible to the usual complement of aphid predators, including lady beetles, lacewings, damsel bugs, and syrphid flies.

Monitoring

Aphid infestations in a field are typically patchy, especially an early infestation. Stems on alfalfa plants in infested areas are often completely covered with aphids, whereas plants in other areas of the field may seem aphid-free. Currently, no monitoring guidelines or sampling strategies are available for cowpea aphids in alfalfa. It is suggested that, as with all monitoring, several areas in the field be observed for the presence of the aphid.

Management decisions

The University of California Pest Management Guidelines state, “Aphid infestations in a field are typically patchy, especially an early infestation. Stems on alfalfa plants in infested areas are often completely covered with aphids whereas plants in other areas of the field may appear aphid-free.

“Monitor cowpea aphid by randomly selecting five to six stems from four locations in the field. Shake the stems onto a large piece of white paper or other surface so that they can be counted. On dormant alfalfa, pay close attention to plants as they begin breaking dormancy. If shoots are failing to grow normally and cowpea aphid is present, consider control measures.

“No guidelines or economic threshold levels have been established for cowpea aphid in alfalfa.”

Until economic thresholds are developed for the cowpea aphid, use the following thresholds, which were developed for the blue alfalfa aphid:

Plant Height	Pea Aphids	Cowpea Aphids
Under 10 inches	40 to 50 per stem*	10 to 12 per stem
Over 10 inches	70 to 80 per stem*	40 to 50 per stem
Over 20 inches	100 + per stem*	40 to 50 per stem

Note that the threshold is considerably higher for pea aphids than cowpea aphids. Also, the University of California recommends that lady beetle populations be considered before the field is sprayed.

*Do not treat if the ratio of lady beetles to aphids is equal to or exceeds the following:

No. of Lady Beetles per Sweep	No. of Pea Aphids per Stem
On Standing Alfalfa	
1 or more adults	5 to 10 pea aphids
3 or more larvae	40 pea aphids
On Stubble	
1 or more larvae	50 pea aphids



Adult cowpea aphids are black, while nymphs are slate gray. Green aphids are probably pea aphids. (Marlin E. Rice)

In Iowa, labeled insecticides (amount of active ingredient per acre) for use against aphids in alfalfa include the following: Ambush[®] (6.4–12.8 oz), Baythroid[®] 2E (1.6–2.8 oz), dimethoate (see label), Furadan[®] 4F (0.5 pt), Lorsban[®] 4E (0.5 pt), Mustang Max[®] (2.24–4.0 oz; label states aphid control may be variable depending on species present and host plant relationships), PennCap-M[®] (2–3 pt), Pounce[®] 3.2EC (2–8 oz), and Warrior[®] (2.56–3.84 oz).

In Iowa, cutting of alfalfa would be another option for controlling cowpea aphid.

Marlin E. Rice is a professor of entomology with extension and research responsibilities in field and forage crops.