

Colorado Coalition for School IPM Newsletter

September 2018

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Joint Statement on Improving Asthma Management in Schools

IPM Programs are Making Schools Environments Healthier for Students and Staff

By Clyde Wilson, Assistant School IPM Coordinator (SEE) – EPA Region 8

Integrated Pest Management strategies is an important tool in mitigating pest, and reducing the excessive use of Pesticides in our schools. With Asthma being one of the leading health concerns in U.S. schools, it is important to address ways to eliminate student and staff exposure to asthma triggers while they are in our school facilities.

Since both pest and pesticides are potent asthma triggers, it is more important than ever that sound practices such as the use of Integrated Pest Management (IPM) be considered to make our schools safer and healthier places for both students and Staff.

The American Lung Association and a host of Health, Education and School based organizations recently released a Joint Statement on Improving Asthma Management in Schools, that should be of importance

to all school districts. The American Lung Association has given its permission to the Colorado Coalition for School IPM to reprint this article in its entirety in this month's issue of the CCSIPM newsletter.

This information is central to helping our school districts to provide school environments that will enhance their ability to achieve academic excellence for all students, while creating a healthier environment for students and staff who are living with asthma.

Enjoy the Read!

Joint Statement on Improving Asthma Management in Schools

This statement outlines best practices and proven, effective strategies for a comprehensive approach to asthma management in schools. The following health and school-based organizations support the recommendations outlined below: American Association of School Administrators, American Lung Association, Asthma and Allergy Foundation of America, Center for Green Schools at USGBC, Healthy Schools Campaign, Merck Childhood Asthma Network, Inc., National Association of School Nurses, National Association of State Boards of Education, National Education Association Health Information Network.

Schools are responsible for providing a healthy learning environment that supports the academic success of all students. In the United States, over 7 million children have asthma.¹ Of the absences caused by chronic conditions, asthma is one of the biggest contributors, causing over 10 million missed school days annually.² In a classroom of thirty, an average of three students will have asthma. When a child's asthma is well controlled, he or she stays in class, performs better academically, parents can remain at work and the community can benefit as a whole.

The Environmental Protection Agency has compiled data that shows how student performance is enhanced when children learn in a healthy school environment.³ Students and school personnel face a

host of issues directly related to asthma – potential asthma emergencies, absenteeism, decreased student and teacher productivity, increased visits to the school health office, access to life-saving emergency medications, and indoor and outdoor air quality to name a few. Schools must be prepared to manage these issues, creating a school environment that will promote student learning and wellbeing.

In 2009, the American Lung Association convened a multi-disciplinary group of stakeholders to review current literature and identify policy strategies that would have the greatest impact on the burden of asthma in the U.S. The findings from this group were vetted by a broad range of experts and led to the release of the National Asthma Public Policy Agenda, which focused policy recommendations for schools, workplaces, homes, healthcare systems and financing, public health infrastructure and surveillance, and outdoor air. Within the school category, two primary areas of focus were outlined: (1) supporting comprehensive asthma management for students and (2) addressing the entire school environment.

The following policy strategies will promote healthier, asthma-friendly learning environments for students:

All school systems should adopt and implement a comprehensive plan for the management of asthma that is based on current research and best practices.

- Identify and monitor all students with a diagnosis of asthma.
- Obtain individualized Asthma Action Plans for all students with asthma to monitor and manage symptoms and reduce exposure to potential asthma triggers.
- Establish well-communicated, step-by-step standard emergency protocols for students without Asthma Action Plans as well as undiagnosed students with respiratory distress.
- Educate all school personnel (especially health service professionals, teachers, physical education teachers, and coaches) about asthma, including how to handle an asthma emergency.
- Provide a full-time registered nurse in every school, every day, all day.
- Ensure students with asthma know the policies and procedures to self-carry, self-administer and have access to quick relief medications (i.e., albuterol inhaler).

- Ensure that students whose asthma is not well controlled are provided with self-management education and case management.

All school systems should adopt and implement an environmental assessment and management plan that addresses environmental asthma triggers.

- Develop and implement indoor air quality (IAQ) management plans that address dampness problems, mold contamination, maintenance and repairs, cleaning, integrated pest management, and other factors as detailed in the [Environmental Protection Agency's IAQ Tools for Schools](#).
- Require schools, grounds, facilities, vehicles and sponsored events to be 100 percent tobacco-free.
- Establish a protocol to minimize student exposure to outdoor air pollutants, including days with unhealthy levels of air pollution as well as pollution caused by bus and car idling.

By taking proactive steps to diminish the impact of asthma in the classroom, schools can reduce the number of asthma-related absences, reduce the number of asthma emergencies, and help safeguard students, faculty, and staff. More importantly, an asthma-friendlier atmosphere creates a healthier environment for all people, not just those affected by asthma.

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¹Centers for Disease Control and Prevention. National Center for Health Statistics. National Health Interview Survey Raw Data, 2011. Analysis performed by the American Lung Association Research and Health Education Division using SPSS and SUDAAN software.

²Centers for Disease Control and Prevention. [Asthma Prevalence, Health Care Use, and Mortality: United States, 2005-2009](#). National Health Statistics Reports; Number 32. January 12, 2011.

³Environmental Protection Agency. IAQ Tools for Schools. Improved Academic Performance: Evidence from Scientific Literature. http://www.epa.gov/iaq/schools/student_performance/evidence.html.

Partner Agency Spotlight: CDPHE



Dedicated to protecting and improving the health and environment of the people of Colorado

Lead Testing in Public Schools Grant

The Colorado Department of Public Health (CDPHE) Public School Lead Testing Grant program recently awarded grants to 11 applicants for a total funding amount of approximately \$42,000. An additional 51 grants totaling \$255,000 are still available and will be issued on a first come, first serve basis, with testing needing to be completed no later than June 30, 2019. The application process is relatively simple and technical assistance is available. For more information on this grant program, please visit the CDPHE website at <https://www.colorado.gov/pacific/cdphe/lead-school-testing-grants>, or email cdphe_wqcd_lead_grant@state.co.us.

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Featured Insect of the Month: Lady beetles

Lady Beetles: Insect friends of man

Lady beetles, also known as “ladybugs” or “ladybird beetles”, are familiar insects. Some 70 species are native to Colorado and about 10 to 12 additional species have established during the past century.

Overwhelmingly, habits of lady beetles are highly beneficial to human interests. Both the adult lady beetles and the grub-stage larvae have chewing mouthparts and are voracious predators of other insects. Although each type of lady beetle has preferences for what they will eat (e.g., aphids, scales, spider mites, mealybugs, etc.), they tend to have fairly broad tastes and feed on almost any small arthropods (insects, mites) or insect eggs that they can successfully attack and ingest.



Figure 1: Convergent lady beetle.



Figure 2: Twospotted lady beetle.

In general, most commonly observed Colorado lady beetles (the genera *Hippodamia*, *Coccinella*, *Harmonia*, *Coleomegilla*, *Hyperaspis*) feed primarily on aphids. Very small lady beetles in the genus *Stethorus* are important predators of spider mites, although they are not commonly observed. The genera *Exochomus*, *Coccidophilus* and *Chilocorus* specialize in scale insects.

Although lady beetle larvae are strictly predators, adult lady beetles may occasionally supplement this diet by feeding on pollen, nectar, or honeydew. One species of lady beetle, known as the Mexican bean beetle (*Epilachna varivestis*), feeds solely on plants and is an important pest of beans.

Life History and Habits of Lady Beetles

Most adult lady beetles are easily identified, broadly oval in shape and often brightly colored. Most species are spotted, and the amount of spotting usually is characteristic of the different species.

However, there are some important exceptions. For example, the smaller lady beetles that feed on mites (*Stethorus*) or scales



Figure 3: Sevenspotted lady beetle.

(*Coccidophilus*, *Scymnus*) usually are uniformly black or dark brown. A few lady beetle species are even striped.



Figure 4: Pink lady beetle feeding on Colorado potato beetle eggs.

Lady beetles, as all beetles, develop in a pattern known as 'complete metamorphosis'. This involves eggs, mobile feeding-stage larvae that molt four times as they develop, transition-stage pupae that undergo changes to the final form, and ultimately the familiar adults.

Most lady beetle eggs typically are spindle-shaped and yellowish or orange-red in color. They are laid in clusters on leaves or other surfaces near aphids and other prey. Lady beetle eggs are distinctive and easily separated from most other insect eggs. However, a few species of leaf beetles produce egg masses of generally similar form—such as the Colorado potato beetle, cottonwood leaf beetle and elm leaf beetle. Small differences in size and color differentiate these from lady beetle eggs. In addition, these leaf-feeding insects restrict their egg laying to the few plants on which they develop; whereas lady beetle eggs can be laid wherever there is nearby insect prey. As with all insects, the development rate depends on temperature and the lady beetle egg stage typically lasts five to seven days. Shortly before eggs hatch, the color changes to more greyish.



Figure 5: *Coccidophilus atronitens*, a predator of pine needle scale.

Lady beetles that feed on scale insects or spider mites do not lay their eggs in masses. Instead, eggs are laid singly on leaves or under the cover of the scale insect.

Most lady beetle larvae are elongated in form and slightly pointed at the rear. Their legs stick out prominently from the sides, giving the appearance of being somewhat bow-legged. Overall color is



Figure 6: Twospotted lady beetle with newly laid egg mass.

gray or black, but most have some distinct spotting of yellow, orange or blue. Fleishy projections extend from the bodies of some lady beetles, notably the twice-stabbed lady beetle and multi-colored Asian lady beetle. The larvae of lady beetles that feed on aphids found in dense colonies of

curled leaves, and those that feed on mealybugs, often are covered with waxy strands and appear similar to mealybugs.

Larvae complete their development in three stages (instars), each separated by molting that typically occurs over the course of 10 to 14 days. After lady beetle larvae finish feeding, they attach themselves to a solid surface by the hind end, head down. They remain motionless and shrink in form, appearing more compact. This stage, called the prepupa, lasts for a couple of days before the insect molts to the pupal stage.



Figure 7: Lady beetle egg mass in greenbug aphid colony.

Lady beetle pupae usually are round in shape, attached to a surface by their hind end. The old split skin of the previous larval stage may still partially cover the pupa or, more often, slough off around the base of the pupa. Lady beetle pupae usually are dark orange or red, often with spots. Although the pupa is fixed to the surface at its base and does not crawl or feed, it is not completely immobile and often reacts with a jerk if disturbed. During summer, development of the pupa typically may take about five to eight days.

After the adult emerges from the pupal skin, it is light colored and soft (teneral adult). Over the course of a day or two, the beetle wing covers harden and darken.

Most lady beetles have two to three generations annually and occur throughout the growing season. However, previous to irrigation many common lady beetles are thought to have only one generation per year, synchronized with the flush of aphid populations occurring in spring.

At the end of the season, or when food runs out, adult lady beetles move to winter quarters. This typically is protected sites such as under plant debris, behind bark flaps or walls of homes. During this period (which may last six months or more) the development of the beetle is temporarily suspended, a condition known as diapause.



Figure 8: Young lady beetle larva.

Some lady beetles also may migrate for winter cover and travel long distances. This habit is particularly notable among the convergent lady beetle, *Hippodamia convergens*. This species may make summer migrations to the mountains

where they spend the winter. Often they will aggregate in large groups, usually around prominent points and often at high elevations, above 9,000



Figure 9: Convergent lady beetle larva.

feet. Such mass aggregations annually occur in several Front Range locations in Colorado. Interestingly, they are not observed in the state west of the Continental Divide.

Lady beetles that have only one generation per year live about one year. However, some lady beetles (*Stethorus* species) are known to occasionally go into diapause and survive a second year. A small number of species spend the winter as larvae. Perhaps the most common example is *Coccidophilus atronitens*, a predator of pine needle scale.

Purchase of Lady Beetles

A great many nurseries and garden catalogs offer lady beetles for control of garden pests. Essentially all those sold are the convergent lady beetle, *Hippodamia convergens*. This insect is field collected from mountainous areas of the West Coast states where the beetles periodically migrate and aggregate in large masses when their normal prey are absent in the lower elevations.

Unfortunately, the record for effective use of lady beetles released in a garden is typically poor. One reason for this is that the beetles are highly dispersive, poised to migrate long distances from their collection areas. With few exceptions, expect released lady beetles to fly away from gardens where they have been introduced. Furthermore, these field-collected lady beetles usually are in a state known as reproductive diapause, during which time they do not produce eggs. Only after feeding for several weeks after release do they resume egg laying.

Another concern raised about field-collected lady beetles is that a proportion of them contain a natural enemy of the convergent lady beetle. A small wasp, *Perilitus coccinellae*, develops as an internal parasite of these lady beetles. Their presence is evident when the larva completes development and subsequently pupates within a cocoon underneath the



Figure 11: Sevenspotted lady beetle larva.

lady beetle.



Figure 10: Multicolored Asian lady beetle larva.

Protecting and Encouraging Native Lady Beetles



Figure 12: A lady beetle associated with leafcurling aphids.

Far more beneficial than purchasing lady beetles can be steps taken to conserve and enhance the activity of native species. Lady beetles require food for themselves and their young and an important way to encourage lady beetles is to have a source of aphids or other preferred prey for them to feed

on. Since lady beetles are actively moving about and seeking food during most of the growing season, they will eventually find your garden.



Figure 13: Pupa of a lady beetle.

Adult lady beetles may also feed on other foods, such as pollen and nectar. A garden environment that provides these is also important. Lady beetles most often visit and use shallow flowers that are accessible to their mouthparts, such as dill, coriander or alyssum. Artificial foods, such as sugar-water sprays or mixtures of sugar/water/yeast, are sometimes used to retain lady beetles in a garden.

Sometimes the efforts of lady beetles are inhibited and we can take actions to eliminate these limiting factors. Ants that 'tend' aphids and collect their honeydew will often attack and drive off lady beetles and other predators. By controlling ants, lady beetle activity can increase in many cases.



Figure 14: Multicolored Asian lady beetle.

Of course, use of insecticides in and around gardens can also greatly affect lady beetles, which are susceptible to many garden insecticides. Certain selective insecticides, such as *Bacillus thuringiensis*, soaps, horticultural oils, pyrethrum, and neem are largely compatible with lady beetles.

The Multicolored Asian Lady Beetle

Since the late 1990's, the multicolored Asian lady beetle (*Harmonia axyridis*) began to move into and colonize parts of Colorado. Originally introduced to control aphids associated with fruit and nut crops, this insect



Figure 15: Lady beetle with cocoon of the parasitic wasp *Perilitus*.

has steadily expanded its range in North America. The multicolored Asian lady beetle has proved to be an important aphid predator on trees and shrubs in Colorado.

The multicolored Asian lady beetle gets its name because it is highly variable in coloration and patterning. Some beetles are highly spotted, while others entirely lack spotting. The basic color may range from pale orange to a dark red. A white border around the edge of the prothorax also is distinctive. Larvae of this insect also differ somewhat from the “typical” species encountered in Colorado, their body being marked with fleshy spines.

An unfortunate aspect of this insect’s behavior is that it often uses buildings for overwintering shelter. Large masses may be observed in fall, lending to them the popular name “halloween beetles”—a name that reflects both their bright coloration and the time during which they are most commonly encountered. Although they are largely harmless within a home, they can produce a mildly disagreeable odor when disturbed. Fortunately, serious problems with this insect in Colorado have not been reported.

Source: W.S. Cranshaw, Colorado State University Extension entomologist and professor, bioagricultural sciences and pest management (Fact sheet # 5.594)

Table 1. Some of the More Common Species of Lady Beetles Present in Colorado.		
Common name	Scientific name	Comments
Sevenspotted lady beetle	<i>Coccinella septempunctata</i>	This is the Ladybird, a European species that has become established in Colorado over the past two decades.
Twospotted lady beetle	<i>Adalia bipunctata</i>	A common native species marked with two spots on its reddish wing covers. This species is primarily found on trees and shrubs; less
commonn in gardens.		
Convergent lady beetle	<i>Hippodamia convergens</i>	A native species and the most abundant lady beetle. In parts of the state mass migrations occur during late summer to overwintering sites at high elevation areas. This species is collected from similar aggregation sites in California and are commonly sold by nurseries.
Pink lady beetle	<i>Coleomegilla maculata</i>	A generally pink or reddish species with abundant black spotting. It is an important predator of insect eggs and is common in gardens and agricultural crops.
Multicolored Asian lady beetle	<i>Harmonia axyridis</i>	A species that has recently colonized parts of the state. Appearance of adults is variable, ranging from being highly spotted to having an absence of all spotting. Overwintering adults often move into buildings, sometimes in very large numbers.
Mexican bean beetle	<i>Epilachna varivestis</i>	A plant feeding species that develops on bean foliage and developing pods.

Current Pests: What Are You Seeing?

Statewide

Arapahoe, Douglas, & Elbert Counties

Early September

- Yellow jackets, hornets: Nest size and nuisance problems peak. Large paper nests in trees and shrubs attracting attention.
- Spottedwing drosophila: Peak injury to fruit likely to be noticed.
- Cluster flies, boxelder bugs: Migrations into homes for overwintering increase.
- Spiders, crickets: Movements into homes accelerate greatly with cool weather.
- Large spiders: Cat-face and garden spiders become fully grown and attract attention.
- Large caterpillars: Several species of large caterpillars (cecropia moth, Polyphemus moth, sphinx moth larvae) wander about landscapes when fully grown and attract attention.
- Peach tree borer: Rescue treatments should be applied before soil temperatures become too cool.
- Pearslug: Damage by the second generation occurs during early September.
- Slugs: Garden injuries increase with the return of cool, wet weather.
- Grasshoppers: Migrations to gardens continue, decline
- Bumble flower beetles: Beetles feed on flowers and visit bacterial ooze.
- Nightcrawlers: Tunneling activities increase with cool temperatures and can create lumpy lawns.

Late September

- Millipedes: Movements into homes occurs following wet periods
- Spiders, crickets, root weevils, conifer seed bugs:

- Movements into homes accelerate greatly with cool weather.
- Yellow jackets: Nuisance problems with yellow jackets scavenging on sweets persist, decline.
- Aphids on trees: High populations of aphids may develop on several species (willow, oak, aspen) prior to frost.
- Cooley spruce gall: Winged stages return to spruce and leave overwintering
- stage on tree.
- Yellowjackets, bees: Wasps and bees may be seen visiting trees and shrubs where honeydew producing insects (e.g., aphids, soft scales) are present.

Denver Metro Area

Early September

- Yellow jackets, hornets: Nest size and nuisance problems peak. Large paper nests in trees and shrubs attracting attention.
- Large spiders: Cat -face and garden spiders become fully grown and attract attention.
- Large caterpillars: Several species of large caterpillars (achemon
- sphinx, cecropia moth, polyphemus moth) wander about landscapes when fully grown and attract attention.
- Peach tree borer: Rescue treatments should be applied before soil temperatures become too cool.
- Pearslug: Damage by the second generation occurs during early September.
- Slugs: Garden injuries increase with the return of cool, wet weather.
- Aster yellows: Symptoms are obvious on many garden flowers and vegetables.
- Bumble flower beetles: Beetles feed on flowers and visit bacterial ooze.
- Nightcrawlers: Tunneling activities and associated lawn lumps renew as soils cool.

Late September

- Millipedes: Movements into homes occurs following wet periods
- Spiders, crickets: Movements into homes accelerate greatly with cool weather.

- Aphids on trees: High populations of aphids may develop on several species (willow, oak, aspen) prior to frost.
- Hackberry nipplegall psyllids: Emergence from galls and dispersal of adults to overwintering shelter
- Kermes scale on oak: Watch for emergence of the crawler stage.
- Cooley spruce gall: Winged stages return to spruce and leave overwintering stage on tree.
- Yellow jackets, bees: Wasps and bees may be seen visiting trees and shrubs where honeydew-producing insects (e.g., aphids, soft scales) are present.

Eastern Plains Counties

Early September

Household/Miscellaneous

- Cluster flies: Flies begin to move to buildings seeking overwintering shelter. Seal buildings to avoid later problems.
- Yellow jackets, hornets: Nest size and nuisance problems peak. Large paper nests in trees and shrubs attracting attention.
- Large spiders: Cat-face and garden spiders become fully grown and attract attention. Male tarantulas migrate.

Tree/Shrub Insects

- Large caterpillars: Several species of large caterpillars (cecropia moth, polyphemus moth, sphinx moth larvae) wander about landscapes when fully grown and attract attention.
- Peach tree borer: Rescue treatments should be applied before soil temperatures become too cool.

Garden Insects

- Slugs: Garden injuries increase with the return of cool, wet weather.
- Aster yellows: Symptoms are obvious on many garden flowers and vegetables.
- Bumble flower beetles: Beetles feed on flowers and visit bacterial ooze.

Lawns

- White grubs: Damage by annual white grubs becomes obvious.

Other

- Tarantulas: Mature male tarantulas wander in search of mates.

Late September

Household/Miscellaneous Insects

- Millipedes: Movements into homes occurs following wet periods
- Spiders, crickets: Movements into homes accelerate greatly with cool weather. Male tarantulas migrate.

Tree/Shrub Insects

- Aphids on trees: High populations of aphids may develop on several species (willow, oak, aspen) prior to frost.
- Cooley spruce gall: Winged stages return to spruce and leave overwintering stage on tree.
- Yellow jackets, bees : Wasps and bees may be seen visiting trees and shrubs where honeydew producing insects (e.g., aphids, soft scales) are present.

El Paso & Teller Counties

Early September

Household/Miscellaneous

- Yellowjackets, hornets: Nest size and nuisance problems peak. Large paper nests in trees and shrubs attracting attention.
- Cluster flies, boxelder bugs: Migrations into homes for overwintering increase.
- Spiders, crickets: Movements into homes accelerate greatly with cool weather.
- Large spiders: Cat - face and garden spiders become fully grown and attract attention.

Tree/Shrub Insects

- Large caterpillars: Several species of large caterpillars (cecropia moth, polyphemus moth, achemon sphinx moth larvae) wander about landscapes when fully grown and attract attention.
- Peach tree borer: Rescue treatments should be applied before soil temperatures become too cool.
- Pearslug: Damage by the second generation occurs during early September.

Garden Insects

- Slugs: Garden injuries increase with the return of cool, wet weather.
- Grasshoppers: Migrations to gardens continue, decline
- Bumble flower beetles: Beetles feed on flowers and visit bacterial ooze.

Lawn Insects

- Nightcrawlers: Tunneling activities during spring can create lumpy lawns.

Late September*Household/Miscellaneous Insects*

- Millipedes: Movements into homes occurs following wet periods
- Spiders, crickets: Movements into homes accelerate greatly with cool weather.
- Yellowjackets: Nuisance problems with yellowjackets scavenging on sweets persist, decline.

Tree/Shrub Insects

- Aphids on trees: High populations of aphids may develop on several species (willow, oak, aspen) prior to frost.
- Cooley spruce gall: Winged stages return to spruce and leave overwintering stage on tree.
- Yellowjackets, bees: Wasps and bees may be seen visiting trees and shrubs where honeydew producing insects (e.g., aphids, soft scales) are present.

High Country Counties**Early September***Household/Miscellaneous*

- Yellowjackets, hornets: Nest size and nuisance problems peak. Large paper nests in trees and shrubs attracting attention.
- Cluster flies, boxelder bugs: Migrations into homes for overwintering increase.
- Spiders, crickets: Movements into homes accelerate greatly with cool weather.
- Large spiders: Cat-face and garden spiders become fully grown and attract attention.

Tree/Shrub Insects

- Large caterpillars: Several species of large caterpillars (cecropia moth, polyphemus moth, sphinx moth larvae) wander about landscapes when fully grown and attract attention.
- Peach tree borer: Rescue treatments should be applied before soil temperatures become too cool.
- Pearslug: Damage by the second generation occurs during early September.
- Aphids: Late season outbreaks are common on aspen, conifers

Garden Insects

- Slugs: Garden injuries increase with the return of cool, wet weather.
- Bumble flower beetles: Beetles feed on flowers and visit bacterial ooze.

Lawn Insects

- Nightcrawlers: Tunneling and associated lawn lumps increase with cool weather.

Late September*Household/Miscellaneous Insects*

- Millipedes: Movements into homes occurs following wet periods
- Spiders, crickets: Movements into homes accelerate greatly with cool weather.
- Yellowjackets: Nuisance problems with yellowjackets scavenging on sweets persist, decline.

Tree/Shrub Insects

- Aphids on trees: High populations of aphids may develop on several species (willow, oak, aspen) prior to frost.
- Cooley spruce gall: Winged stages return to spruce and leave overwintering stage on tree.
- Yellowjackets, bees: Wasps and bees may be seen visiting trees and shrubs where honeydew producing insects (e.g., aphids, soft scales) are present.

Northern Front Range**Early September***Household/Miscellaneous*

- Yellowjackets, hornets: Nest size and nuisance problems peak. Large paper nests in trees and shrubs attracting attention.
- Large spiders: Cat-face and garden spiders become fully grown and attract attention.

Tree/Shrub Insects

- Large caterpillars: Several species of large caterpillars (achemon sphinx, cecropia moth, polyphemus moth) wander about landscapes when fully grown and attract attention.
- Peach tree borer: Rescue treatments should be applied before soil temperatures become too cool.
- Pearslug: Damage by the second generation occurs during early September.

Garden Insects

- Slugs: Garden injuries increase with the return of cool, wet weather.
- Aster yellows: Symptoms are obvious on many garden flowers and vegetables.
- Bumble flower beetles: Beetles feed on flowers and visit bacterial ooze.
- Spottedwing drosophilid: Peak damage to strawberries and raspberries.

Late September*Household/Miscellaneous Insects*

- Millipedes: Movements into homes occurs following wet periods
- Spiders, crickets: Movements into homes accelerate greatly with cool weather.

Tree/Shrub Insects

- Aphids on trees: High populations of aphids may develop on several species (willow, oak, aspen) prior to frost.
- Cooley spruce gall: Winged stages return to spruce and leave overwintering stage on tree.
- Yellowjackets, bees: Wasps and bees may be seen visiting trees and shrubs where honeydew producing insects (e.g., aphids, soft scales) are present.

Pueblo & Fremont Counties**Early September***Household/Miscellaneous*

- Cluster flies: Flies begin to move to buildings seeking overwintering shelter. Seal buildings to avoid later problems.
- Yellowjackets, hornets: Nest size and nuisance problems peak. Large paper nests in trees and shrubs attracting attention.
- Large spiders: Cat-face and garden spiders become fully grown and attract attention. Male tarantulas migrate.

Tree/Shrub Insects

- Large caterpillars: Several species of large caterpillars (cecropia moth, polyphemus moth, sphinx moth larvae) wander about landscapes when fully grown and attract attention.
- Peach tree borer: Rescue treatments should be applied before soil temperatures become too cool.

Garden Insects

- Slugs: Garden injuries increase with the return of cool, wet weather.
- Aster yellows: Symptoms are obvious on many garden flowers and vegetables.
- Bumble flower beetles: Beetles feed on flowers and visit bacterial ooze.

Lawns

- White grubs: Damage by annual white grubs becomes obvious.

Other

- Tarantulas: Mature male tarantulas wander in search of mates.

Late September*Household/Miscellaneous Insects*

- Millipedes: Movements into homes occurs following wet periods
- Spiders, crickets: Movements into homes accelerate greatly with cool weather. Male tarantulas migrate.

Tree/Shrub Insects

- Aphids on trees: High populations of aphids may develop on several species (willow, oak, aspen) prior to frost.
- Cooley spruce gall: Winged stages return to spruce and leave overwintering stage on tree.
- Yellowjackets, bees: Wasps and bees may be seen visiting trees and shrubs where honeydew producing insects (e.g., aphids, soft scales) are present.

Southwestern Counties**Early September***Household/Miscellaneous*

- Yellowjackets, hornets: Nest size and nuisance problems peak. Large paper nests in trees and shrubs attracting attention.
- Cluster flies, boxelder bugs, conifer seed bugs: Migrations into homes for overwintering increase.
- Spiders, crickets: Movements into homes accelerate greatly with cool weather.
- Large spiders: Cat-face and garden spiders become fully grown and attract attention.

Tree/Shrub Insects

- Large caterpillars: Several species of large caterpillars (cecropia moth, polyphemus moth, sphinx moth larvae) wander about landscapes when fully grown and attract attention.
- Peach tree borer: Rescue treatments should be applied before soil temperatures become too cool.
- Pearslug: Damage by the second generation occurs during early September.

Garden Insects

- Slugs: Garden injuries increase with the return of cool, wet weather.
- Bumble flower beetles: Beetles feed on flowers and visit bacterial ooze.

Late September*Household/Miscellaneous Insects*

- Millipedes: Movements into homes occurs following wet periods
- Spiders, crickets: Movements into homes accelerate greatly with cool weather.

- Yellowjackets : Nuisance problems with yellowjackets scavenging on sweets persist, decline.

Tree/Shrub Insects

- Aphids on trees: High populations of aphids may develop on several species (willow, oak, aspen) prior to frost.
- Cooley spruce gall: Winged stages return to spruce and leave overwintering stage on tree.
- Yellowjackets, bees: Wasps and bees may be seen visiting trees and shrubs where honeydew producing insects (e.g., aphids, soft scales) are present.

Tri-River Counties**Early September***Household/Miscellaneous*

- Cluster flies: Flies begin to move to buildings seeking overwintering shelter. Seal buildings to avoid later problems.
- Yellowjackets, hornets: Nest size and nuisance problems peak.
- Large paper nests in trees and shrubs attracting attention.
- Large spiders: Cat-face and garden spiders become fully grown and attract attention. Male tarantulas migrate.

Tree/Shrub Insects

- Large caterpillars: Several species of large caterpillars (cecropia moth, sphinx moth larvae) wander about landscapes when fully grown and attract attention.
- Peach tree borer: Rescue treatments should be applied before soil temperatures become too cool.

Garden Insects

- Slugs: Garden injuries increase with the return of cool, wet weather.
- Corn earworm: High levels of injury to corn ears and susceptible fruiting vegetables at this time.
- Sap/Bumble flower beetles: Beetles feed on flowers and visit bacterial ooze.

Lawns

- White grubs: Damage by annual white grubs becomes obvious.

- Nightcrawlers: Production of noticeable “lawn lumps” increases with cooler weather.

Late September

Household/Miscellaneous Insects

- Millipedes: Movements into homes occurs following wet periods
- Spiders, crickets: Movements into homes accelerate greatly with cool weather. Male tarantulas migrate.

Tree/Shrub Insects

- Aphids on trees: High populations of aphids may develop on several species (willow, oak, aspen) prior to frost.
- Cooley spruce gall: Winged stages return to spruce and leave overwintering stage on tree.
- Yellowjackets, bees: Wasps and bees may be seen visiting trees and shrubs where honeydew producing insects (e.g., aphids, soft scales) are present.

Source: <http://bspm.agsci.colostate.edu/outreach-button/insect-information/> (Yard/Garden Insect Calendars)

Credits

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