

Colorado Coalition for School IPM Newsletter

May 2018

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CCSIPM Spotlight: Denver Public Schools Step Up Asthma

May is National Asthma and Allergy Awareness Month. According to the National Heart, Lung, and Blood Institute, more than 25 million people in the United States have asthma, including 7 million children. Asthma is a chronic lung disease that inflames and narrows the airways, causing wheezing, breathlessness, chest tightness and coughing. It affects people of all ages but most often starts in childhood.

Although people with asthma always have the disease, they only experience symptoms or an asthma attack when a trigger irritates their lungs.

Severe asthma attacks may require emergency care and can be fatal. There is no known cure for asthma, but knowing and avoiding the triggers can help manage it.

The following article details some of the efforts that are underway in Colorado Schools to make school environments more asthma friendly for students and staff living with asthma.

Creating Asthma Friendly Schools in Colorado: The Colorado Step Up Asthma Program

Melanie Gleason, MS, PA-C, Manager Colorado Step UP Asthma Program, Children's Hospital Colorado

Donna Shocks, MSN, RN, CNS, Manager Nursing and Student Health Services, Denver Public Schools

The fact that asthma is a significant health issue for nearly one of every 10 children in the United States makes it a major concern in the classroom as well as the clinic. It is the cause of 36,000 school absences each day and has the potential to negatively impact school performance and academic achievement. Moreover, morbidity and mortality rates are disproportionately higher among urban and minority children, many of whom already face educational disadvantages.

Beyond the increased emergency department visits and hospitalizations associated with asthma is the heightened risk of premature death: 185 children die annually from asthma-related complications. The Colorado Step Up Asthma Program led by Children's Hospital Colorado in partnership with Denver Metro school districts, the Region 8 EPA and other community partners is answering a need to provide a circle of support for children with asthma and thus reduce asthma morbidity and achieve better outcomes.

The Colorado Step Up Asthma Program

The seeds of today's Step Up program were planted a decade ago when Stanley J. Szeffler, MD, Director of the Pediatric Asthma Research Program at Children's Colorado, partnered with Denver Public Schools (DPS) to identify high-risk students. The program identified schools most severely impacted by asthma with students at risk of health disparity due to race/ethnicity factors and high rates of poverty. DPS is committed to being a full participant, contributor, and driver because of their recognition of the importance of asthma in the school setting. They are committed to the success of all students and know the outcome first hand of poor asthma control. The leadership in the Department of Nursing & Student Health Services, Donna Shocks, RN,

MSN, provided immense insight and guidance for addressing school asthma management while adhering to polices and regulations. She established buy-in from key leaders in the district including the superintendent, department of technology, department of risk management and the facility director.

Collaborative effort produced the four-component program now in place:

1. Assessment and monitoring

- Validated survey tools to monitor asthma control
- Close monitoring of students with severe asthma by the school nurse
- Asthma “check up” visits with an asthma counselor 3-4 times per year
- Feedback to families and healthcare providers

2. Asthma education and self-management training

- Open Airways for Schools – grades 3-5
- Kickin’ Asthma – grades 6-8

3. Care coordination

- Linking access to care
- Referrals to address social determinants of health
- Communication among the school nurse, step up team, family and health care provider

4. Support of “asthma-friendly” school environment

- EPA tools for school – Indoor Air Quality Management Program
- Tailored approach to eliminating environmental triggers in the home environment
- Professional development for school nurses through a technical assistance program
- Asthma education for faculty, staff, and teachers

Improving indoor air quality:

While, case identification, care coordination and standardized school-centered asthma management is critical to the success of the program, the direct benefits through these measures are mainly limited to children with asthma participating in the program. However, through the environmental component of this partnership, the benefits of improved indoor air quality has the potential to reach thousands of students, teachers, staff and visitors each year.

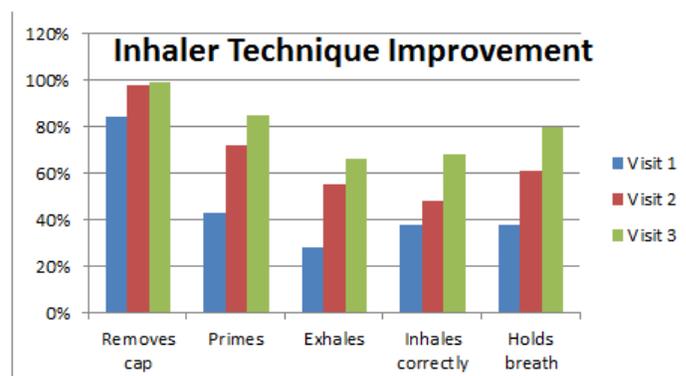
Children spend up to a 1/3 of their day at school and are at risk for coming into contact with multiple asthma triggers. The cornerstone of our trigger reduction program is through adoption of the EPA, Tools for Schools Quality Indoor Air Management program. Denver Public School District partnered with the local EPA office to improve indoor environment in Denver schools, including an extensive integrated Pest management program that has significantly reduced the use of pesticides in schools. Under the DPS Integrated Pest Management program, the use of rodenticides for the management of mice has been reduced by 75%. and pest complaints in schools reduced by as much as 90%. In addition, only low-risk human exposure pesticides are used in Denver’s schools.

This program has not only successfully eliminated asthma triggers caused by cockroach and mice; but also reduced exposure to potentially harmful chemicals for over 92,000 DPS students including nearly 11,000 who have asthma. By ensuring a healthier learning environment in the schools, DPS is creating an environment that fosters academic achievement. When children who suffer from asthma are able to enter an environment where they can function without encountering asthma triggers in the buildings, absentee rates drop, and those children are not left to fall behind in their education due to missed school days.

Program outcomes:

Results for the 2016-2017 school year reflect significant gains in self-management outcomes:

- Correct MDI/Spacer technique improved from 2.30 to 3.99 (scale of 0-5) (Figure 2 below)
- Asthma knowledge scores improved from a mean score of 72% at entry to 87% after intervention



Clinical outcomes included:

- 31% decrease in emergency department/urgent care visits (44% to 12%)
- 8% decrease in hospitalizations for asthma (12% to 4%)
- 29% decrease in asthma-related school absences >5 days (52% to 23%)

Colorado Coalition for School IPM Agency Partner Spotlight: US EPA

Celebrate Asthma Awareness Month

Take Action to Manage Asthma in the School Environment!

Americans spend up to 90 percent of their time indoors, and exposure to indoor allergens and irritants may play a significant role in triggering asthma episodes. The U.S. Environmental Protection Agency (EPA) has developed the IAQ Tools for Schools Action Kit to identify, solve and prevent IAQ problems that may exacerbate asthma symptoms in schools. Conduct a walkthrough of your school buildings using the IAQ Tools for Schools Action Kit checklists to help identify potential asthma triggers. If triggers are found, develop and implement a remediation plan.

Visit www.epa.gov/iaq/schools to learn more about asthma triggers and ways to reduce exposures in schools.

School-Based Health Centers as Leaders in the Environmental Management of Asthma

By Anne Kelsey Lamb, M.P.H.

Director, Regional Asthma Management & Prevention (RAMP)

If you are reading this, you may know that asthma threatens children's health and education. According to the Centers for Disease Control and Prevention, children ages 5–17 with asthma missed 13.8 million days of school in 2013. Children who miss school because of asthma or attend school but are tired from being up at night with asthma symptoms simply cannot learn and thrive.

You also may know that school-based health care is a powerful tool for addressing asthma and reducing health disparities, and that school-based health centers (SBHCs) play a key role in this work. Throughout the country 2,315 SBHCs are serving an ethnically diverse population of more than 2 million children, primarily in low-income areas. Nearly 90 percent of these SBHCs offer chronic disease management, including asthma management, and research shows that SBHCs are already leaders in the clinical management of asthma. SBHC users are less likely to go to the emergency department (ED) or be hospitalized for asthma, have asthma-related restricted activity days, or miss school as a result of their asthma.

RAMP believes SBHCs have an opportunity to be leaders in managing the environmental factors that make asthma worse. (See information about environmental asthma triggers here.) Even children with the best medically managed asthma will continue to suffer from asthma exacerbations if their homes, schools and outdoor environments contain environmental asthma triggers. With support from EPA, RAMP and our partners at the California School-Based Health Alliance and National School-Based Health Alliance work to increase SBHC engagement in the environmental management of asthma. Our core belief is that SBHCs provide an ideal setting to incorporate environmental components into chronic disease management programs because of their role as a strong link between the student, school and home.

One of RAMP's first activities was to develop the Asthma Environmental Intervention Guide for School-Based Health Centers, which has been shared with more than 3,000 SBHC staff. We also have conducted national trainings, as well as state trainings in four states, reaching 300 SBHC staff.

For more information on Best Practices for Sustainable Asthma Management Strategies and Care, attend a free webinar on May 22, 2018. Register for the webinar [here](#).

Featured Pest of the Month: European Paper Wasp

The European paper wasp, *Polistes dominula*, is a newly established insect now abundant in many areas of Colorado. The paper nests of this wasp are commonly observed in yards and gardens and the wasp is involved in stinging incidents. The European paper wasp develops as a predator of caterpillars and some other insects, populations of which have probably been affected by the establishment of this new wasp.

The European paper wasp is a generally black insect marked with yellow. They are fairly slender-bodied insects with a distinct constriction of the body between the thorax and abdomen.

The European paper wasp is superficially similar to and commonly mistaken for various yellowjackets (*Vespula* spp.). Several yellowjacket species are native to Colorado and these historically have been the most significant stinging insects of the region. A somewhat blunter, more compact body form distinguishes yellowjackets from the European paper wasp. Also, the long hind legs of paper wasps tend to trail below when the insects are in flight.



Figure 1. European paper wasp.



Figure 2. Western yellowjacket, the most common species mistaken for European paper wasp.

Introduction of European paper wasp to Colorado

The European paper wasp is the common paper wasp of Europe. It was first found in North America in the 1970s in the Boston area. Since then it has spread rapidly to much of the northern

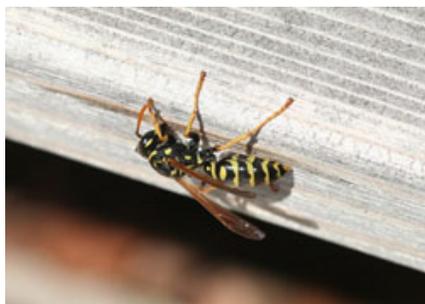


Figure 3. European paper wasp gnawing on weathered wood.

half of the United States and British Columbia. The first Colorado record for the species is August, 2001 from Larimer County, and it likely entered eastern Colorado shortly before 2000. The first Utah record dates from 1995, suggest western Colorado may have been colonized earlier. Wherever it has established, the European paper wasp has usually become a common species within a few years. Currently it is now considered very abundant in every urbanized county in eastern Colorado and the three western Colorado counties of Mesa, Montrose, and Delta. Presently it is not thought to occur in much of the higher elevation counties, but is known in Steamboat Springs.

Life History and Habits

The European paper wasp is a social insect that produces an annual colony in a paper nest. Individual colonies are established anew each spring. The overwintering stage are females (queens), only slightly larger than the wasps typically observed during summer. Female wasps that were fertilized the previous fall survive winter in protected sites in and around a yard. When they emerge from overwintering shelters, they may be seen on warm days as they seek sites to establish new nests. Earliest activity is sometimes seen in the first half of March.

Nests are constructed of paper, produced from chewed wood fibers of weathered fences, porch decks and similar sites. Initially, a few hexagonal paper cells are formed and eggs laid in the cells. Upon hatch, the wasp larvae are fed crushed insects, usually caterpillars that the overwintered queen discovers in foraging trips among nearby plants. When full grown the larvae then seal over the cell and pupate. Development of the wasps to the adult form is usually completed in 3 to 4 weeks after eggs are laid. The new wasps assist in colony activities of nest construction, foraging, and caring for young. The original queen increasingly remains restricted to the nest as new workers take over colony activities.

The colony continues to grow through the summer and may contain several dozen individuals by the end of summer. The nest is continuously expanded and reconstructed through the summer and may contain a hundred or more cells by fall. A few of the wasps produced later in summer are males and increasing numbers of the females become sexually mature at that same time. Mating occurs and the mated females are the surviving overwintering stage. Males and non-reproductive females do not survive winter and the nest is abandoned by late fall.

The fertilized overwintering females seek protected sites for shelter during the cold season. Often they find winter shelter outdoors but occasionally they will find suitable areas behind walls or in other areas of the house. These wasps sometimes will move about during warm periods and may find themselves within the living space. Such wintertime encounters do not indicate the presence of an active nest, only that some wasps have found some pocket of winter shelter within the building. Overwintered females emerge from these areas in spring and search out sites to establish nests in the neighborhood.

Nests are almost always established in new locations each year and several kinds of nest sites are particularly favored (new nests sometimes are established at the same site the following year). Dark cavities are often used, including those found in outdoor grills, large bells, pipes, rock cavities, and hollow spaces behind walls. Nests are also commonly attached to wood on the underside of porch decks, eaves of homes or other overhangs. Nests are almost always attached to either wood, roughened metal surfaces, or rock.



Figure 4. Developing wasp larvae and capped pupae.



Figure 5. European paper wasp at nest.

Paper wasp nests are not covered with a surrounding envelope of paper. Paper envelopes that surround a nest are characteristic of yellowjackets (*Vespula* spp.) and hornets (*Dolichovespula* spp.), the other social wasps found in Colorado. Yellowjackets nest underground or, occasionally, behind walls; hornets make conspicuous football-sized nests attached to branches or under eaves.

The European paper wasp is capable of stinging. Among the stinging insects found in the state European paper wasp is relatively non-aggressive, and somewhat



Figure 6. European paper wasps nesting in clothes line.

less likely to sting than are most yellowjackets and bumble bees. Stings from European paper wasp occur almost exclusively when nests are accidentally disturbed.

European paper wasps rear their young on live insects. They do not produce nuisance problems around outdoor dining that characterize scavenging species, such as the western yellowjacket. European paper wasps will sometimes feed on sweet materials, including honeydew produced by aphids. On rare occasions, they also may feed and damage ripe fruit. This habit is particularly notable in cherries and some other well-ripened stone fruits grown on the West Slope, where they may be serious pests.

European paper wasps have become one of the most important natural controls of many kinds of yard and garden insects. Most commonly they feed on caterpillars, including the larvae of hornworms, cabbageworms, and tent caterpillars. Sawfly larvae are also commonly taken prey.

European paper wasps can be encouraged to nest in nest boxes. Artificial nest sites can be useful if one wants the benefits of these insects with a known nest location so accidental disturbances can be avoided. A typical nest box would be made of wood and at least 4-in x 4-in x 4-in, open at the bottom. They should be mounted several feet above ground on a solid post.



Figure 7. A nest box designed to house European paper wasp.



Figure 8. European paper wasps in nest box.

Other Paper Wasps of Colorado

Three other species of paper wasps are native to the state—*Polistes fuscatus* (golden paper wasp), *Polistes apachus* and *Mischocyttarus flavitarsus* (western paper wasp). There is no evidence that the new species has significantly affected their activities. In rural areas, away from buildings and human structures, these native paper wasps are the

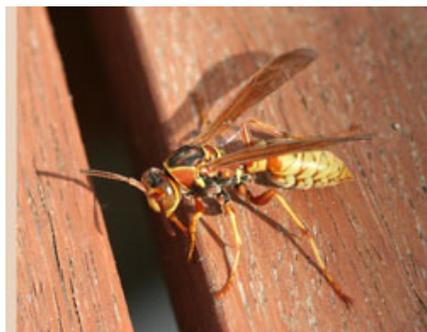


Figure 9. Golden polistes, *Polistes fuscatus*.

predominant species of paper wasp one will likely find. All of these other paper wasps have generally similar biologies to the European paper wasp.



Figure 10. *Polistes apachus*, a native species of southeast Colorado.

within capped cells during spraying. These usually survive and later will emerge. It is also recommended that after a nest is removed the area also be washed with a jet of water to eliminate colony odors. These practices will inhibit surviving wasps, not present on the nest when it was destroyed, from attempting to reestablish a nest upon return.

There are no traps or lures that can be used to control this species. Commercially available 'wasp traps' are designed to attract certain kinds of yellowjackets and contain baits such as fruit juices, fresh meat, or heptyl butyrate (found in many retail wasp lures). None of these are attractive to the European paper wasp. There has not been any type of trap identified as effective for this species. (Large numbers of the native western yellowjacket, *Vespula pensylvanica*, and prairie yellowjacket, *V. atripilosa*, are captured by these traps.)

Source: W. Cranshaw, Colorado State University Extension entomology specialist, and professor, bioagricultural sciences and pest management

Control of European Paper Wasp

If nests are not in a location where they are likely to be disturbed, it is usually best to leave them in place. The nests will be abandoned at the end of the season and they then can be safely removed.

Individual nests can be destroyed. Insecticides are often used for this purpose and a wide variety of "wasp and hornet" marketed products are effective. If nests are treated it is recommended to apply treatments in the evening. At this time most of the wasps have returned to the nest so that they can be killed and, after dark, flying activities are greatly reduced.



Figure 11. Western paper wasp, *Mischocyttarus flavitarsus*.

After the nest has been killed it should be removed and destroyed. This will eliminate larvae that were

Current Pests: What Are You Seeing?

Arapahoe, Douglas, & Elbert Counties

Miller moths: Flights into areas often begin in early May.

Tick season: The next two months are the peak season for tick activity and spread of Colorado tick fever.

Spider mites: Clover mite populations should be peaking and may begin natural decline.

Sod webworms, cutworms: Damage to lawns by webworms and cutworms begin at this time.

Hackberry psyllid: Adults return to trees and lay eggs on the emerging leaves.

Brownheaded ash sawfly: Pinhole feeding wounds indicate early stage infestations.

Honeylocust plant bug: Check trees for newly emerged nymphs.

Elm leaf beetle: Adults return to trees and chew holes in leaves.

Southwestern pine tip moth: Egg-laying occurs when new needles emerge on pines.

Walnut twig beetle: Overwintered adults in trunk bark move to branches and begin tunneling.

Honeylocust plant bug: Nymphs have hatched and begin to damage new growth.

Peach tree borer: Larvae causing peak injury to bases of trees at this time

Tent caterpillars: Larvae may be seen making tents on various fruit and shade trees. Forest tent caterpillars are also active.

Slugs: Slugs may cause peak damage to seedlings during cooler weather.

Cooley spruce gall: Eggs hatch and young nymphs move to feed on new growth. Galls are initiated.

Pine needle scale: Egg hatch may begin during warm seasons.

Zimmerman pine moth: Period ending during which larval control is possible.

Miller moths: Peak flights typically occur at this time.

Honeybee swarms: Many honey bee colonies produce swarms during sunny days

Emerald ash borer: Adult emergence begins

Douglas-fir tussock moth: Egg hatch may begin. Monitor infested trees.

Brownheaded ash sawfly: Peak period of injury in most seasons.

Pine needle scale: Crawler emergence typically begins around mid May, about the time of lilac peak bloom. Check infested plants.

Oystershell scale: Crawler emergence typically occurs in late May. Check infested plants.

Bronzed cane borer/rose stem girdler: Adults emerge from caneberrys, currant, rose.

Oak borers: Preventive treatments should be made at this time at high risk sites

Fruittree leafrollers: Leafrolling may begin to be observed on many trees/shrubs.

Hackberry psyllid: Current season galls begin to be visible as small eruptions on leaves.

Cooley spruce gall: Current season galls are readily visible upon close inspection. Small nymphs are present in chambers of the gall.

Rabbitbrush beetle: Peak feeding injury by larvae.

Pinyon tip moths: Larvae start to tunnel into terminals.

Leafcurling aphids: Aphids curl the new growth of many plants at this time.

Currantworm: Larvae chew leaves of current and gooseberry. Damage starts in the interior of shrub.

Codling moth: Sprays after petal fall can help control the first generation. Monitor flights with pheromone traps.

Honeylocust plant bug: Injury usually peaks towards end of month.

Seedcorn maggot: Early planted beans, corn, and melons are susceptible to seedcorn maggot damage.

Currantworm: Larvae chew leaves of current and gooseberry. Damage starts in the interior of shrub.

Strawberry injuries: Millipedes and slugs tunnel the ripening berries.

Narcissus bulb fly: Adult stages emerge and lay eggs on narcissus, daffodils, and hyacinth.

Flea beetles: Adults are present on cabbage, radish and related plants.

Slugs: Slug injury should continue at high levels

Denver Metro Area

Miller moths: Flights into areas often begin in early May.

Tick season: The next two months are the peak season for tick activity and spread of Colorado tick fever.

Spider mites: Injury by banks grass mite increases. Clover mite populations should be decreasing.

Brownheaded ash sawfly: Continue to monitor ash for evidence of infestations.

European elm flea weevil: Adults chew emerging leaves and egg laying may begin

Hackberry psyllid: Adults return to trees and lay eggs on the emerging leaves.

Honeylocust podgall midge: Adults begin laying eggs on new growth. First generation begins.

Pine needle scale: Crawler emergence typically begins around mid May, about the time of lilac peak bloom. Check infested plants.

Elm leaf beetle: Adults return to trees and chew holes in leaves.

Southwestern pine tip moth: Egg-laying occurs when new needles emerge on pines.

Honeylocust plant bug: Nymphs have hatched and begin to damage new growth.

Peach tree borer: Larvae causing peak injury to bases of trees at this time

Tent caterpillars: Larvae may be seen making tents on various fruit and shade trees. Forest tent caterpillars are also active.

Slugs: Slugs may cause peak damage to seedlings during cooler weather.

Cooley spruce gall: Eggs hatch and young nymphs move to feed on new growth. Galls are initiated.

Pine needle scale: Egg hatch may begin during warm seasons.

Miller moths: Peak flights typically occur at this time.

Brownheaded ash sawfly: Peak period of injury in most seasons.

Pine needle scale: Crawler emergence typically begins around mid May, about the time of lilac peak bloom. Check infested plants.

Oystershell scale: Crawler emergence typically occurs in late May. Check infested plants.

Bronzed cane borer/rose stem girdler: Adults emerge from caneberrries, currant, rose.

Oak borers: Treatments should be made to high risk sites.

Fruittree leafrollers: Leafrolling may begin to be observed on many trees/shrubs.

European elm flea weevil: Leafmting of larvae begins

Elm leafminer: Egg laying by adults may be expected.

Hackberry psyllid: Current season galls begin to be visible as small eruptions on leaves.

Cooley spruce gall: Current season galls are readily visible upon close inspection. Small nymphs are present in chambers of the gall.

Rabbitbrush beetle: Peak feeding injury by larvae.

Pinyon tip moths: Larvae start to tunnel into terminals.

Douglas-fir tussock moth: Egg hatch may begin. Monitor infested trees.

Leafcurling aphids: Aphids curl the new growth of many plants at this time.

Currantworm: Larvae chew leaves of current and gooseberry. Damage starts in the interior of shrub.

European elm scale: Overwintered females feed intensively and begin to produce large amounts of honeydew.

European elm bark beetle: Adults emerge and feed on twigs. Most new transmission of Dutch elm disease occurs at this time.

Codling moth: Sprays after petal fall can help control the first generation. Monitor flights with pheromone traps.

Seedcorn maggot: Early planted beans, corn, and melons are susceptible to seedcorn maggot damage.

Currantworm: Larvae chew leaves of current and gooseberry. Damage starts in the interior of shrub.

Strawberry injuries: Millipedes and slugs tunnel the ripening berries.

Narcissus bulb fly: Adult stages emerge and lay eggs on narcissus, daffodils, and hyacinth.

Flea beetles: Adults are present on cabbage family (crucifer flea beetles) and nightshade family (potato flea beetle) plants.

Eastern Plains Counties

Miller moths: Flight sometimes begin in early May.

Millipedes: Cool wet, weather may trigger migrations of millipedes from lawns

Spider mites: Injury by banks grass mite increases. Clover mite populations should be decreasing.

Hackberry psyllid: Adults return to trees and lay eggs on the emerging leaves.

Honeylocust podgall midge: Adults begin laying eggs on new growth. First generation begins.

Elm leaf beetle: Adults return to trees and chew holes in leaves.

Southwestern pine tip moth: Egg-laying occurs when new needles emerge on pines.

Honeylocust plant bug: Nymphs have hatched and begin to damage new growth.

Peach tree borer: Larvae causing peak injury to bases of trees at this time

Tent caterpillars: Larvae may be seen making tents on various fruit and shade trees. Forest tent caterpillars are also active.

Ash sawfly: Early feeding injury should be present. Optimum time for treatment in most seasons.

Slugs: Slugs may cause peak damage to seedlings during cooler weather.

Cooley spruce gall: Eggs hatch and young nymphs move to feed on new growth. Galls are initiated.

Pine needle scale: Egg hatch may begin during warm seasons.

Seedcorn maggot: Early planted beans, corn, and melons are susceptible to seedcorn maggot damage.

Flea beetles: Larvae chew small holes in many garden plants and may kill seedlings.

Strawberry injuries: Millipedes and slugs tunnel ripening berries.

Miller moths: Peak flights typically occur at this time.

Pine needle scale: Crawler emergence typically begins around mid May, about the time of lilac peak bloom. Check infested plants.

Oystershell scale: Crawler emergence typically occurs in late May. Check infested plants.

Bronzed cane borer/rose stem girdler: Adults emerge from caneberry, currant, rose.

Fruittree leafrollers: Leafrolling may begin to be observed on many trees/shrubs.

Hackberry psyllid: Current season galls begin to be visible as small eruptions on leaves.

Cooley spruce gall: Current season galls are readily visible upon close inspection. Small nymphs are present in chambers of the gall.

Rabbitbrush beetle: Peak feeding injury by larvae.

Leafcurling aphids: Aphids curl the new growth of many plants at this time.

Ash sawfly: Peak feeding by larvae often occurs at this time.

European elm scale: Overwintered females feed intensively and begin to produce large amounts of honeydew.

Rose/apple leafhoppers: Peak injury to foliage of rose. Apple leafhopper may damage apple foliage.

European elm bark beetle: Adults emerge and feed on twigs. Most new transmission of Dutch elm disease occurs at this time.

Codling moth: Sprays after petal fall can help control the first generation. Monitor flights with pheromone traps.

Root weevils: Leaf notching of some shrubs and perennials may begin to be observed

Narcissus bulb fly: Adult stages emerge and lay eggs on narcissus, daffodils, and hyacinth.

Crucifer flea beetles: Adults are present on cabbage, radish and related plants.

Apple flea beetle: Larvae are feeding on evening primrose

Striped cucumber beetle: Overwintered adults become active and may damage emerging squash, pumpkins, melons

El Paso & Teller Counties

Miller moths: Flights into areas often begin in early May.

Tick season: The next two months are the peak season for tick activity and spread of Colorado tick fever.

Spider mites: Clover mite populations should be peaking and may begin natural decline.

Sod webworms, cutworms: Damage to lawns by webworms and cutworms begin at this time.

Hackberry psyllid: Adults return to trees and lay eggs on the emerging leaves.

Brownheaded ash sawfly: Pinhole feeding wounds indicate early stage infestations.

Honeylocust plant bug: Check trees for newly emerged nymphs.

Elm leaf beetle: Adults return to trees and chew holes in leaves.

Southwestern pine tip moth: Egg-laying occurs when new needles emerge on pines.

Honeylocust plant bug: Nymphs have hatched and begin to damage new growth.

Peach tree borer: Larvae causing peak injury to bases of trees at this time

Tent caterpillars: Larvae may be seen making tents on various fruit and shade trees. Forest tent caterpillars are also active.

Slugs: Slugs may cause peak damage to seedlings during cooler weather.

Cooley spruce gall: Eggs hatch and young nymphs move to feed on new growth. Galls are initiated.

Pine needle scale: Egg hatch may begin during warm seasons.

Walnut twig beetle: Adults move from overwintering chambers in bark to branches and initiate new tunnels.

Zimmerman pine moth: Period ending during which larval control is possible.

Miller moths: Peak flights typically occur at this time.

Honeybee swarms: Many honeybee colonies produce swarms during sunny days

Brownheaded ash sawfly: Peak period of injury in most seasons.

Pine needle scale: Crawler emergence typically begins around mid May, about the time of lilac peak bloom. Check infested plants.

Oystershell scale: Crawler emergence typically occurs in late May. Check infested plants.

Bronzed cane borer/rose stem girdler: Adults emerge from caneberrys, currant, rose.

Oak borers: Preventive treatments should be made at this time at high risk sites

Fruittree leafrollers: Leafrolling may begin to be observed on many trees/shrubs.

Hackberry psyllid: Current season galls begin to be visible as small eruptions on leaves.

Cooley spruce gall: Current season galls are readily visible upon close inspection. Small nymphs are present in chambers of the gall.

Rabbitbrush beetle: Peak feeding injury by larvae.

Pinyon tip moths: Larvae start to tunnel into terminals.

Leafcurling aphids: Aphids curl the new growth of many plants at this time.

Currantworm: Larvae chew leaves of current and gooseberry. Damage starts in the interior of shrub.

Codling moth: Sprays after petal fall can help control the first generation. Monitor flights with pheromone traps.

Honeylocust plant bug: Injury usually peaks towards end of month.

Seedcorn maggot: Early planted beans, corn, and melons are susceptible to seedcorn maggot damage.

Currantworm: Larvae chew leaves of current and gooseberry. Damage starts in the interior of shrub.

Strawberry injuries: Millipedes and slugs tunnel the ripening berries.

Narcissus bulb fly: Adult stages emerge and lay eggs on narcissus, daffodils, and hyacinth.

Flea beetles: Adults are present on cabbage, radish and related plants.

Slugs: Slug injury should continue at high levels

High Country Counties

Miller moths: Flights into areas often begin in early May.

Tick season: The next two months are the peak season for tick activity and spread of Colorado tick fever.

Spider mites: Clover mite populations should be peaking and may begin natural decline.

Sod webworms, cutworms: Damage to lawns by webworms and cutworms begin at this time.

Hackberry psyllid: Adults return to trees and lay eggs on the emerging leaves.

Western spruce budworm: Overwintered larvae begin to tunnel buds and flowers. Check for early stages of infestations.

Elm leaf beetle: Adults return to trees and chew holes in leaves.

Southwestern pine tip moth: Egg-laying occurs when new needles emerge on pines.

Honeylocust plant bug: Nymphs have hatched and begin to damage new growth.

Peach tree borer: Larvae causing peak injury to bases of trees at this time

Tent caterpillars: Larvae may be seen making tents on aspen and various fruit and shade trees. Forest tent caterpillars are also active on aspen and ash.

Cooley spruce gall: Eggs hatch and young nymphs move to feed on new growth. Galls are initiated.

Pine needle scale: Egg hatch may begin during warm seasons.

Oystershell scale: Crawler emergence typically occurs in late May. Check infested plants.

Blackhorned pine borer: Adult emergence and egg laying typically occurs at this time.

Bronzed cane borer/rose stem girdler: Adults emerge from caneberrries, currant, rose.

Fruittree leafrollers: Leafrolling may begin to be observed on many trees/shrubs.

Hackberry psyllid: Current season galls begin to be visible as small eruptions on leaves.

Douglas-fir beetle: Attacks on new trees by overwintered adults may begin.

Oak defoliators: Loopers and leafrollers may begin to defoliate oak stands.

Cooley spruce gall: Current season galls are readily visible upon close inspection. Small nymphs are present in chambers of the gall.

Leafcurling aphids: Aphids curl the new growth of many plants at this time.

Currantworm: Larvae chew leaves of current and gooseberry. Damage starts in the interior of shrub.

Codling moth: Sprays after petal fall can help control the first generation. Monitor flights with pheromone traps.

Cicada: Adult emergence of common species usually occurs at this time.

Slugs: Slugs may cause peak damage to seedlings during cooler weather.

Seedcorn maggot: Early planted beans, corn, and melons are susceptible to seedcorn maggot damage.

Grasshoppers: Eggs may begin to hatch of early hatching species (e.g., clearwinged grasshopper)

Currantworm: Larvae chew leaves of current and gooseberry. Damage starts in the interior of shrub.

Strawberry injuries: Millipedes and slugs tunnel the ripening berries.

Narcissus bulb fly: Adult stages emerge and lay eggs on narcissus, daffodils, and hyacinth.

Flea beetles: Adults are present on cabbage, radish and related plants.

Northern Front Range

Miller moths: Flights into areas often begin in early May.

Tick season: The next two months are the peak season for tick activity and spread of Colorado tick fever.

Honey bee swarms: Honey bee swarming may occur during sunny afternoons

Spider mites: Injury by Banks grass mite increases. Clover mite populations should be decreasing.

Hackberry psyllid: Adults return to trees and lay eggs on the emerging leaves.

Honeylocust podgall midge: Adults begin laying eggs on new growth. First generation begins.

European elm flea weevil: Shotholes appear from adult feeding damage. Eggs are laid at leaf veins.

Southwestern pine tip moth: Egg-laying occurs when new needles emerge on pines.

Honeylocust plant bug: Nymphs have hatched and begin to damage new growth.

Peach tree borer: Larvae causing peak injury to bases of trees at this time

Tent caterpillars: Larvae may be seen making tents on various fruit and shade trees. Forest tent caterpillars are also active.

Slugs: Slugs may cause peak damage to seedlings during cooler weather.

Cooley spruce gall: Eggs hatch and young nymphs move to feed on new growth. Galls are initiated.

Pine needle scale: Egg hatch may begin during warm seasons.

Walnut twig beetle: Overwintered beetles initiate tunnels of first generation.

Miller moths: Peak flights typically occur at this time.

Honey bee swarms: Peak period of honey bee swarming.

Pine needle scale: Crawler emergence typically begins around mid May, about the time of lilac peak bloom. Check infested plants.

Oystershell scale: Crawler emergence typically occurs in late May. Check infested plants.

Emerald ash borer: Adults should begin to emerge and move to leaves to feed.

European elm flea weevil: Leaf mining occurs.

Elm leafminer: Early stages of leafmining.

Bronzed cane borer/rose stem girdler: Adults emerge from caneberrries, currant, rose.

Fruittree leafrollers: Leafrolling may begin to be observed on many trees/shrubs.

Hackberry psyllid: Current season galls begin to be visible as small eruptions on leaves.

Cooley spruce gall: Current season galls are readily visible upon close inspection. Small nymphs are present in chambers of the gall.

Rabbitbrush beetle: Peak feeding injury by larvae.

Pinyon tip moths: Larvae start to tunnel into terminals.

Douglas-fir tussock moth: Egg hatch may begin. Monitor infested trees.

Leafcurling aphids: Aphids curl the new growth of many plants at this time.

Currantworm: Larvae chew leaves of current and gooseberry. Damage starts in the interior of shrub.

European elm scale: Overwintered females feed intensively and begin to produce large amounts of honeydew.

Codling moth: Sprays after petal fall can help control the first generation. Monitor flights with pheromone traps.

Seedcorn maggot: Early planted beans, corn, and melons are susceptible to seedcorn maggot damage.

Currantworm: Larvae chew leaves of current and gooseberry. Damage starts in the interior of shrub.

Strawberry injuries: Millipedes and slugs tunnel the ripening berries.

Narcissus bulb fly: Adult stages emerge and lay eggs on narcissus, daffodils, and hyacinth.

Flea beetles: Adults are present on cabbage, radish and related plants.

Pueblo & Fremont Counties

Miller moths: Flights into areas often begin in early May.

Tick season: The next two months are the peak season for tick activity and spread of Colorado tick fever.

Spider mites: Injury by banks grass mite increases. Clover mite populations should be decreasing.

Hackberry psyllid: Adults return to trees and lay eggs on the emerging leaves.

Honeylocust podgall midge: Adults begin laying eggs on new growth. First generation begins.

Elm leaf beetle: Adults return to trees and chew holes in leaves.

Southwestern pine tip moth: Egg-laying occurs when new needles emerge on pines.

Honeylocust plant bug: Nymphs have hatched and begin to damage new growth.

Peach tree borer: Larvae causing peak injury to bases of trees at this time

Tent caterpillars: Larvae may be seen making tents on various fruit and shade trees. Forest tent caterpillars are also active.

Ash sawfly: Early feeding injury should be present. Optimum time for treatment in most seasons.

Slugs: Slugs may cause peak damage to seedlings during cooler weather.

Cooley spruce gall: Eggs hatch and young nymphs move to feed on new growth. Galls are initiated.

Pine needle scale: Egg hatch may begin during warm seasons.

Seedcorn maggot: Early planted beans, corn, and melons are susceptible to seedcorn maggot damage.

Flea beetles: Larvae chew small holes in many garden plants and may kill seedlings.

Strawberry injuries: Millipedes and slugs tunnel ripening berries.

Miller moths: Peak flights typically occur at this time.

Pine needle scale: Crawler emergence typically begins around mid May, about the time of lilac peak bloom. Check infested plants.

Oystershell scale: Crawler emergence typically occurs in late May. Check infested plants.

Bronzed cane borer/rose stem girdler: Adults emerge from caneberries, currant, rose.

Fruittree leafrollers: Leafrolling may begin to be observed on many trees/shrubs.

Hackberry psyllid: Current season galls begin to be visible as small eruptions on leaves.

Cooley spruce gall: Current season galls are readily visible upon close inspection. Small nymphs are present in chambers of the gall.

Rabbitbrush beetle: Peak feeding injury by larvae.

Leafcurling aphids: Aphids curl the new growth of many plants at this time.

Ash sawfly: Peak feeding by larvae often occurs at this time.

European elm scale: Overwintered females feed intensively and begin to produce large amounts of honeydew.

Rose/apple leafhoppers: Peak injury to foliage of rose. Apple leafhopper may damage apple foliage.

European elm bark beetle: Adults emerge and feed on twigs. Most new transmission of Dutch elm disease occurs at this time.

Codling moth: Sprays after petal fall can help control the first generation. Monitor flights with pheromone traps.

Narcissus bulb fly: Adult stages emerge and lay eggs on narcissus, daffodils, and hyacinth.

Flea beetles: Adults are present on cabbage, radish and related plants.

Striped cucumber beetle: Overwintered adults become active and may damage emerging squash, pumpkins, melons

Southwestern Counties

Tick season: The next two months are the peak season for tick activity and spread of Colorado tick fever.

Spider mites: Clover mite populations should be peaking and may begin natural decline.

Sod webworms, cutworms: Damage to lawns by webworms and cutworms begin at this time.

Hackberry psyllid: Adults return to trees and lay eggs on the emerging leaves.

Western spruce budworm: Overwintered larvae begin to tunnel buds and flowers. Check for early stages of infestations.

Southwestern pine tip moth: Egg-laying occurs when new needles emerge on pines.

Honeylocust plant bug: Nymphs have hatched and begin to damage new growth.

Peach tree borer: Larvae causing peak injury to bases of trees at this time

Tent caterpillars: Larvae may be seen making tents on aspen and various fruit and shade trees. Forest tent caterpillars are also active on aspen and ash.

Slugs: Slugs may cause peak damage to seedlings during cooler weather.

Cooley spruce gall: Eggs hatch and young nymphs move to feed on new growth. Galls are initiated.

Pine needle scale: Egg hatch may begin during warm seasons.

Oystershell scale: Crawler emergence typically occurs in late May. Check infested plants.

Bronzed cane borer/rose stem girdler: Adults emerge from caneberries, currant, rose.

Fruittree leafrollers: Leafrolling may begin to be observed on many trees/shrubs.

Hackberry psyllid: Current season galls begin to be visible as small eruptions on leaves.

Oak defoliators: Loopers, Sonoran tent caterpillars, and leafrollers may begin to defoliate oak stands.

Cooley spruce gall: Current season galls are readily visible upon close inspection. Small nymphs are present in chambers of the gall.

Rabbitbrush beetle: Peak feeding injury by larvae.

Leafcurling aphids: Aphids curl the new growth of many plants at this time.

Codling moth: Sprays after petal fall can help control the first generation. Monitor flights with pheromone traps.

Cicadas: Adult emergence of common species (e.g., Putnam's cicada) usually occurs at this time.

Slugs: A peak period of activity and injury.

Seedcorn maggot: Early planted beans, corn, and melons are susceptible to seedcorn maggot damage.

Strawberry injuries: Millipedes and slugs tunnel the ripening berries.

Asparagus beetle: Adults chew on spears and lay eggs

Flea beetles: Adults are present on cabbage, radish and related plants.

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

Credits

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