

# Pest Alert

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WATCH FOR POTATO/TOMATO PSYLLID  
EXPECT APHID SURGE ON SHADE TREES AND SHRUBS  
CICADAS

WANTED: THE MULTICOLORED ASIAN LADY BEETLE  
NO NEED FOR WHEAT LEAF RUST SPRAYS IN EASTERN COLORADO  
WATCH FOR LEAF BLIGHT CAUSING TURF DAMAGE  
MUSHROOMS IN LAWNS MOST LIKELY NOT FAIRY RING

## WATCH FOR POTATO/TOMATO PSYLLID

There are indications that tomato/potato psyllid could occur in above average numbers this season. Some psyllids already have been detected along the Front Range, infestations are quite high in the southern wintering areas from which they migrate, and the recent cool weather should have favored migrants remaining and reproducing.

This insect is one of the most destructive pests of potato and tomato, and injures plants in a unique manner. Via its sucking mouthparts it does remove some fluids, but damage is much more related to the toxic saliva that is injected in the process. This can result in a wide range of unusual disorders, collectively described as "psyllid yellows". Above ground symptoms can include foliar discoloration, sometimes a brilliant yellowing on russet potatoes. (Purpling symptoms are typical on red potatoes and tomatoes.) Enlargements of the internodes are common on potato, sometimes progressing to aerial tubers. Newer growth slows and plants may prematurely stop growing and senesce.

However, the effects of the systemic psyllid toxin on fruit and tubers is particularly dramatic. Tubers not only are reduced in size, but have roughened skin, flabby texture and often prematurely sprout. This latter effect may result in "chain tuber" formation. The primary effects on tomatoes are reduced fruit size and a mealier texture.

The potato/tomato psyllid is a small insect, roughly aphid sized, and can be difficult to detect. Nymphs are flattened, somewhat scale-like, and are attached to the underside of leaves. Pale brown during early stages, older nymphs are green. In all stages one of the more unique features is their excrement ("lerps") that appears as granulated salt or sugar that collects on leaves beneath the feeding psyllid. Adults are banded black and white and resemble miniature cicadas. They also jump.

Colorado State University, U.S. Department of Agriculture and Colorado counties cooperating.  
Cooperative Extension programs are available to all without discrimination.

As potato/tomato psyllids are annual migrants, their appearance between seasons can be irregular and routine treatment is not recommended. However they should be regularly scouted. In potatoes I recommend using a sweep net to detect if adults are present. With further confirmation that they have established in the area, by checking for the presence of nymphs on potatoes or indicator plants (garden peppers are good for this) treatment is probably advisable unless the crop is very near harvest. For psyllid control on potatoes my experience suggests that treatments most effective are somewhat in the order of Provado>Monitor, Thiodan>Asana, Pounce/Ambush. Applications must be made to cover the under surfaces of lower leaves, where the insect concentrates.

For garden plants, check for the presence of the characteristic salt/sugar-type excrement on leaves. Also check to see if there are any psyllid nymphs on the leaves of peppers, then look for them on tomatoes and potatoes. Diazinon and dusting sulfur are probably the best alternatives available to gardeners. (Cranshaw)

### **EXPECT APHID SURGE ON SHADE TREES AND SHRUBS**

A surge of aphid activity can be expected on many shade trees and shrubs, at least in northern Colorado. The warm fall weather last year allowed for an extended period for overwintering eggs to be laid and relatively mild winter conditions contributed little to subsequent mortality. Aphids were already doing well on many plants when unusually cool, wet weather came into the picture. This weather pattern seems to suppress activity of many natural enemies of aphids, which tend to develop at a relatively slower rate than their prey under cool conditions. Furthermore, honeydew has regularly been washed off, denying lady beetles, lacewings and other beneficial insects this important food stuff.

With warming weather, the annual battle between aphids and their natural enemies can be expected to renew, with vigor. (Cranshaw)

### **CICADAS**

Cicadas are the largest Colorado insects in the order Homoptera, which includes other sap-sucking groups such as leafhoppers, aphids, and spittlebugs. Twenty-six species occur in the state with the largest, the "dog-day cicadas", being stout-bodied insects over two inches in length.

Although frequently abundant, cicadas are far more often heard than seen. Male cicadas make a variety of sounds to attract females. Most commonly heard are loud, often shrill, buzzings, sometimes with several individual insects synchronizing in song. Other cicadas may make clicking noises. (Currently Putnam's cicadas, which make a song like two clicking dimes, are quite active.)

Despite their large size, cicadas cause very little injury. The immature stages (nymphs) develop slowly underground and their feeding on roots cause no detectable harm to the plants. Greatest injury occurs when large number of certain cicadas, such as the Putnam's cicada, insert eggs into stems of trees and shrubs. This **oviposition injury** can cause some twig dieback.

Cicadas are sometimes improperly called "locusts", a term that is appropriately used to describe certain migratory grasshoppers. This error originated when early European settlers encountered large emergences of periodical cicadas in the Northeast. As they had not previously ever seen such cicada outbreaks they likened them to the locusts described in the Bible.

## Life History and Habits

Nymphs of cicadas develop underground feeding on sap of roots of various trees and shrubs. The nymphs are generally pale brown, rather hunch-backed, and have stout forelegs that are used for digging through soil. The life history of cicada species found in Colorado is poorly understood, but development likely takes between two to five years to complete.

(Periodical cicadas, *Magicicada* species, such as the 17-year and 13-year "locusts", are the longest lived cicadas. They emerge during synchronized periods, often in spectacular numbers, every 17th or 13th year, respectively. Periodical cicadas are largely restricted to areas east of the Mississippi and do not occur in Colorado.)

When full-grown, the nymphs emerge from the soil. They crawl up a nearby plant or wall, and the nymphal skin splits along the back. The adults pull themselves from the old nymphal skin and hang from the plant for several hours, pumping blood to extend the wings. The new exoskeleton hardens and darkens rapidly and the insects then fly away, leaving behind their "cast" nymphal skins.

The male cicadas attract females by their characteristic songs. Most cicadas have a pair of domed, drum-like organs on the sides of the abdomen, known as *tymbals*. By means of alternately contracting and releasing muscles the tymbal resonates. A large air sac in the abdomen with a thin exterior eardrum acts as an "echo-chamber" that greatly amplifies the sound.

However, one group of common Colorado cicadas lack tymbals. They instead produce sounds by clicking together the wings, somewhat similar to some sound-producing grasshoppers and crickets.

Adults are present for about four to six weeks following emergence. After mating, the adult females begin to lay eggs in slits in the twigs of various hosts. Upon hatching, nymphs drop to the ground, burrow beneath the soil surface, and spend the next two to five years feeding on the roots of plants.

## Natural Enemies of Cicadas

Cicadas have several natural enemies, many of unusual habits. Perhaps most spectacular are the cicada killer wasps (*Sphex speciosus*) that have a general appearance of huge yellowjackets and attack the large dog-day cicadas. Other hunting wasps attack the smaller cicadas, using paralyzed cicadas similarly to provision nests dug in soil.

Another insect enemy found in eastern Colorado is the large (approximately one-inch) cedar beetle, *Sandalus niger*. These develop as parasites of cicada nymphs, the adults emerging in summer. Also, the Mississippi kite, a large predatory bird normally found along the Gulf Coast, has expanded its summer range into the Arkansas Valley of Colorado where it subsists almost entirely on cicadas.

## Control

No effective controls for Colorado cicadas have been developed nor are any likely necessary. Control of other cicadas with insecticides has been ineffective since the adult cicadas are highly mobile and are present over an extended period (weeks). Very high value plants, particularly

younger trees that are still getting established, may be protected by covering with netting to exclude the adults.

### Some Common Cicadas of Colorado

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Common Name	Scientific Name	Comments
"Dog-day" cicadas	<i>Tibicen dorsatus</i> , <i>T. dealbatus</i>	The largest species in Colorado, primarily restricted to the southeastern areas of the state. <i>T. dealbatus</i> , a native of forested areas along riverways, has adapted well to landscape plantings and has become common in many towns and cities, particularly along the Arkansas Valley. Cottonwood and maples are common hosts for the nymphs. The adult males produce a loud, shrill call during the midsummer 'dog-days'.
Putnam's cicada	<i>Platypedia putnami</i>	The most common species statewide, being particularly abundant in shrublands of Gambel oak or mountain mahogany or in pinyon/juniper habitat. However, Putnam's cicada is also now found in irrigated landscapes. Some oviposition/egg laying wounding can occur on plants such as maples, crabapple, and honeylocust. Males make a soft clicking call, similar to that produced by striking together two coins.
Cactus dodger	<i>Cacama valvata</i>	A large gray/black species associated with areas of cholla cactus. Males produce a very piercing shrill song.
Mountain cicada	<i>Okanagana bella</i>	A black and red species often common in montane areas of aspen intermixed with conifers. Males make a long, shrill song that often lasts one to two minutes.

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(Cranshaw, Kondratieff)

### WANTED: THE MULTICOLORED ASIAN LADY BEETLE

Included in this newsletter is a Wanted poster for a new insect that is becoming established in Colorado, the multicolored Asian lady beetle. I have been expecting this insect for quite awhile as it has steadily been spreading from several points all around us and last Fall it was first observed in Larimer and Prowers counties. It has successfully wintered in the Ft. Collins area and is building in numbers.

We are interested in tracking the spread of this insect and am asking assistance in this. One reason for interest is that in many locations it has proved to be very well adapted and a particularly effective predator of aphids on trees and shrubs. Indeed it has sometimes outcompeted preexisting lady beetles, notably the seven-spotted lady beetle, itself an introduced insect that came into Colorado during the late 70s and early 80s.

The other aspect of this insect is a dubious one - they overwinter in homes. These interior migrations can number in the hundreds, rivalling such long established nuisance invaders as boxelder bugs, conifer seed bugs, and elm leaf beetles.

The enclosed sheet has a description of the insect and information on how to report sitings. (Cranshaw)

### **NO NEED FOR WHEAT LEAF RUST SPRAYS IN EASTERN COLORADO**

I surveyed fields in north eastern Colorado for with leaf rust over the last few weeks and the wheat field day team (including V. Velasco) just finished a Springfield to Julesberg wheat days program. In the Burlington area, Ron Meyer (Coop. Extn., Burlington) reported some leaf rust earlier. Over the last 2 weeks it has developed to high levels from Burlington south on susceptible varieties like TAM 107.

While rust can look serious, the actual leaf area covered must be more than 70% to be economically significant and the flag leaf heavily infected. Even in the Burlington area and farther south it will not have much impact. Remember that 70% of the flag leaf must be covered with rust at or before early milk for an economic impact will develop. It is way beyond that growth stage and reports are not that serious.

#### **Do not spray fungicides for leaf rust in dryland wheat.**

Bayleton 50 (at 4-8 oz/acre) can be used on wheat up to 21 days prior to harvest but it is very doubtful that it will help a grower's bottom line. Tilt can not be used after Feekes 8 (pre-boot just as flag leaf shows) and the wheat is beyond that. The best thing to do now is count on the dry weather. (Brown)

### **WATCH FOR LEAF BLIGHT CAUSING TURF DAMAGE**

While there is an abundance of Helminthosporium leaf spot around, Ascochyta leaf blight, caused by fungi in the genus Ascochyta (there are more than 20 species that attack turf grasses) is also causing damage in Front Range turf. While we have seen some Ascochyta leaf blight off and on over the years, it is generally more of a curiosity than a problem. 1990 was the first time that it assumed any importance and even then was just in localized situations.

#### **Symptoms**

Large areas of turf may develop a straw colored blighted appearance. In some instances it may cover major parts of a bluegrass landscape or be localized and produce a patchy appearance. Close examination will show healthy leaves and infected leaves interspersed.

Common leafspot and dollar spot may also sometimes occur to some extent with the Ascochyta leaf blight. Ascochyta Infected leaves have a bleached appearance from the tip of the leaf blade extending toward the leaf base. The margin between the diseased leaf area (lesion) and apparently healthy tissue is somewhat diffuse in color but develops an abrupt pinched appearance. This symptom is very diagnostic. Infection usually begins at the tip and progresses down the leaf blade. Other leaf spotting fungus diseases do not have this die back appearance. In some instances an infection may begin along the leaf blade and continue across the leaf blade. These can sometimes be confused with dollar spot or Septoria leaf spot. The former occurs at higher temperatures and the latter will have small black fungus structures (pycnidia) in the spot. Pycnidia of Ascochyta are smaller and usually at the base of the plant or on dead tissue in the thatch.

First symptoms are small individual purplish to brown leaf spots. These spots expand becoming tan and ultimately straw colored to bleached appearing. On older dead leaves, very small, dark, fly speck-sized fungus fruiting bodies (pycnidia) form. These can be confused with Septoria leaf spot, which has pycnidia that are twice as large, readily seen, and form on lesions that may or may not be on still living leaves. Refer to the following table to differentiate the common turf leaf spots.

**Characteristics of some common turf leaf fungus diseases.**

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<u>Disease</u>	<u>Lesion type</u>	<u>Fruiting body</u>
<b>Ascochyta leaf blight</b>	<b>Straw colored from leaf tip toward base</b>	<b>Speck sized, dark pycnidia</b>
<b>Septoria leaf spot</b>	<b>Straw colored random along leaf blade</b>	<b>Pepper grain sized, dark pycnidia</b>
<b>Anthracnose</b>	<b>Yellow to brown spots scattered along leaf blade</b>	<b>Pepper grain sized, acervuli with spines</b>
<b>Common leaf</b>	<b>Lens shaped lesion with dark boarder</b>	<b>None</b>
<b>Dollar spot</b>	<b>Bleached constricted hour glass-shaped, scattered lesions, frequently with dark top/bottomedges</b>	<b>None</b>

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Disease development

Little work has been done on the development of Ascochyta fungi on grasses. It is known that the fungus develops and carries over as mycelium and pycnidia on dead tissue. Pycnidia produce spores (conidia) which ooze out during wet periods. The conidia are splashed or float to newly cut leaf tips or are moved by mowers, other turf equipment and/or shoes. Although the fungi can occasionally enter the leaf blade elsewhere they usually enter freshly cut leaf ends and the disease symptoms progress from tip to leaf base. This symptom is the most useful in separating Ascochyta leaf blight from other leaf spotting diseases. Pycnidia form after the leaf dies.

Frequent irrigation, rain and extended wet periods favor development of the disease. As such the practices of not readjusting sprinkler timers during rain periods contributes significantly to disease development (How many times have you seen sprinklers going full blast during a rain!). Frequent mowing also favors disease development by making new sites for infection.

## Control

"Ascochyta fungi seldom cause extensive damage." Problem here is the fungus didn't read the book. Under normal conditions, good cultural practices are considered sufficient to suppress significant Ascochyta leaf blight development.

### **In reference to Ascochyta management.**

- Mow grass as necessary to maintain height, although mowing favors disease development other diseases could pose more serious problems if grass is not properly maintained.
- Collect cuttings where disease is severe (normally I do not recommend collecting cuttings) because the fungus only sporulates on dead leaf tissue.
- Water in morning or mid day, deeply and as infrequently as possible without creating stress, i.e., turn the sprinklers off during the rain.
- Avoid excessive applications of nitrogen which cause more growth, thus more tender leaf tissue that needs to be cut more often, hence more fresh infection sites!
- When disease is severe, use fungicides. Use the broad spectrum fungicides such as mancozeb formulations (ie Fore, etc.), chlorothalonil (Daconil 2787), anilazine (Dyrene) and iprodione (Chipco 26019).

The bottom line is--do a good job on cultural practices. (Brown)

### **MUSHROOMS IN LAWNS MOST LIKELY NOT FAIRY RING**

With the abundance of rain we have experienced there are many mushrooms "popping" up in lawns. Most of these are not associated with fairy ring and are just part of the turf ecology. They appear to do and are not known to do any damage to the lawn and are not harmful to pets.

I recommend that people not eat them as much on general principal as to the diversity of the mushrooms and the people themselves. There is always a risk of getting a toxic one or someone might be more sensitive than other individuals. I recommend against eating them unless you have had lots of experience in mushroom collecting of the same kinds over a long period.

If their appearance is detracting from the lawn just mow them as you mow the regularly mow the grass. In time they will not be noticeable. (Brown)



photos courtesy: Cornell University and University of Kentucky

# WANTED

## Multicolored Asian Lady Beetle

Reports of Colorado sightings of the multicolored Asian lady beetle, *Harmonia axyridis*, are requested. This is a new species to the state, with current records indicating its presence in Larimer and Prowers counties.

The multicolored Asian lady beetle was originally introduced in several locations in the southern and eastern US and since has spread slowly. It has proved to be a very effective predator of aphids, particularly on trees and shrubs. However, it has the unfortunate nuisance habit of entering homes in fall for overwintering shelter, sometimes in tremendous numbers.

**How to recognize the multicolored Asian lady beetle:** There are approximately 80 different kinds of lady beetles in Colorado. Some of the features of this species include:

- 1). average to slightly above average size for a lady beetle;
- 2). pronounced white markings along the side, just behind the head (prothorax);
- 3) black markings on prothorax form a "W" shape;

However, other features can be variable. Color ranges from red to orange to yellow. Most have a very high number of spots on their wing covers; others may be free of any spots.

**Requested action:** The purpose of this message is to help with tracking of this new insect as it colonizes Colorado and to document changes that may result. If you see a suspected Asian lady beetle we request that you report it to the following address or phone. If possible, we would like to get a sample of the insect for confirmation. Please include information on where and when it was collected and your address, so that your assistance can be acknowledged.

**Address:** BSPM – Entomology  
Attn: Asian Lady Beetle  
Colorado State University  
Ft. Collins, CO 80523

**Phone:** (970)491-7554  
**email:** wcransha@ceres.agsci.colostae.edu



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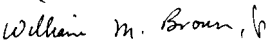
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Where trade names are used, no discrimination is intended, and no endorsement by the Cooperative Extension Service is implied.

Sincerely,

  
William M. Brown, Jr.  
Extension Plant Pathologist