

Pest Alert

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**The Pest Alert is now found on the World Wide Web at
<http://www.colostate.edu/programs/pestalet>**

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JUNE 21 VEGNET REPORT

During June of 2000, rainfall varied from less than 0.65 inch to zero throughout all of Colorado, western Nebraska, eastern Wyoming and western Kansas. Temperatures continue to be in the 80s and 90s at most sites. The regional weather forecast predicts average rainfall and above average temperatures for the next week. There are still no reports of foliar disease problems on sugar beet, onion or bean at this stage.

Continued warm, dry conditions will reduce the threat from early-season fungal and bacterial pathogens during the vegetative stages of plant development. However, this week may bring more variable temperatures and more moisture, so follow an aggressive scouting program to detect early signs of pest problems.

Please share sightings of pest problems by calling the CSU VegNet Team at 970-491-6987 (Howard Schwartz), 491-7846 (Mark McMillan), or 491-0256 (Kris Otto).

POTATO

A few samples of Alternaria blight (not Early Blight) have been brought in from the Front Range area, and should be managed with protectant fungicides such as the EBDCs; Bravo has not been very effective against this species of Alternaria in the past.

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

The potato foliar disease model was complicated by the mid-May freeze, which caused partial to complete death of emerged potato foliage. If one uses a May 1 emergence date, the early blight model (threshold of 300) is averaging 270 throughout the Front Range and northeastern Colorado; however, if one uses a May 15 emergence (regrowth) date, then the early blight model is averaging 210. The late blight model (threshold of 18) remains below 3 at all reporting sites in Colorado, regardless of the early or mid May emergence date. Since not all potato plants were frozen back in every field, it is probably better to use the earlier emergence date to schedule aggressive scouting calendars to detect the first signs of early blight before initiating your fungicide program as row closure approaches.

DRY BEAN

The bean rust model is showing that there is low potential for disease development based upon scattered outbreaks of light rust late in the 1999 season, no evidence of infected volunteer bean plants this spring, widespread planting of rust-resistant varieties, reduced bean acreage, high temperatures and dry conditions this spring, and forecasts for continued hot, dry conditions.

If these high temperature periods persist throughout the vegetative and flowering periods, common bacterial blight will probably be the most common foliar disease threat this season; especially if storms and/or contaminated irrigation water move the bacterium within and between bean fields. The early to mid-season copper-based bactericide program initiated during the vegetative period (preferably with a ground-rig) can reduce common blight severity later during flowering and pod-set.

The hot, dry conditions this spring have contributed to recent reports of high thrips populations on dry bean plants in northeastern Colorado and surrounding region. Thrips are small, active, cigarette-shaped, yellow-to-brown insects. Onion thrips are most commonly associated with furrow irrigated beans grown in close proximity to winter wheat. Infestations commonly occur as the wheat matures and the onion thrips disperse in search of new food sources. Onion thrips feeding results in leaf cupping and distortion that is made severe by plant stress (low moisture and high temperature).

Consider treatment (Orthene, Disyston, Lannate, etc) if there are more than 15 thrips per plant and damage is observed. Tap the plant on white cardboard or in a white container and then count the thrips that have been knocked off. Onion thrips infestations and damage are often more severe at field edges so be sure to assess the entire field before making a treatment decision. Western flower thrips feed in developing flowers and can cause flower and pod abortion. Five flower thrips per blossom can reduce the number of pods per plant.

ONION

Onion transplants continue to bulk up rapidly with the warm growing conditions and lack of storm damage. Maintain the copper-based bactericide program, tank-mixed with an EBDC product on a 7 to 10 day interval to reduce problems with bacterial diseases and any fungal diseases (Purple Blotch, Botrytis Blast) that could develop as the plants continue to develop and mature in the next few weeks.

Most seeded fields are growing vigorously but still at the pre-bulb stage and should not require a bactericide/fungicide application. There are a few early seeded fields that are at the

pre-bulb or early bulb stage, and these fields may benefit from the protection as plant canopies create more favorable microclimates and as the plants become more susceptible physiologically.

Pink root and Fusarium basal plate rot affected plants are being observed in many fields this year, and probably the incidence is due in part to the early-season high temperature stress. Avoid additional stress from root pruning (during cultivation and/or lay-by applications of fertilizer). (Schwartz)

BUG-B-GON - AN EXAMPLE OF THE PERILS OF TRADE NAMES

Currently there is commonly running on television advertisements for an insect control product known as "Bug-B-Gon". The advertisement itself is very obnoxious with the basic punch line being that they don't care what the insect is, they just want it and every other killed. Bug-B-Gon comes to the rescue.

Well what is Bug-B-Gon, a trade name used by Ortho? I just completed a survey of Ft. Collins nurseries and came to the conclusion that it apparently can be almost anything.

Most commonly available were various **diazinon**-containing products including "Ortho Ready-to-Use Bug-B-Gon Insect Killer", "Ortho Bug-B-Gon Ready Spray", and "Ortho Lock n' Spray Bug-B-Gon Multi-Purpose Insect Killer", all liquid products. However, an alternative liquid formulation contains the pyrethroid **esfenvalerate**, "Ortho Concentrate Bug-B-Gon Multi-Purpose Insect Killer".

It gets even more confusing when you move over to the garden dusts. At WalMart and Home Depot, next to each other on the shelf you can find a bag or shaker of "Ortho Bug-B-Gon Multipurpose Garden Dust". However, some of the bags contain **permethrin**; others contain **carbaryl** (Sevin). The bags are almost identical, with only very minor differences in the small print.

These four Bug-B-Gon products all have a different range of potential effective uses - and hazards. I doubt that very few people going to the store to get some of this highly advertised product would be able to observe/appreciate the label distinctions. Prior to this I always thought that the most confusing use of trade names in garden products was the Ortho "Isotox" line, which used to seem to change every year. (Isotox has apparently settled down to only including Insect Killer Formula IV, an Orthene/Vendex combo). But Ortho has taken this one step further with the concurrent marketing of four different Bug-B-Gon products. (Cranshaw)

FACTS ABOUT PILLBUGS/A.K.A. "ROLY-POLYS"

The common pillbug goes by the scientific name *Armadillium vulgare*. It is a non-native species, apparently of European origin. Close relatives include the "sowbugs", also introduced into North America. Two species are common, *Porcellio scaber* and *P. laevis*. The most obvious difference between pillbugs and sowbugs is that the latter can not tightly curl into the defensive "pill" form. Sowbugs also possess "tail-like" appendages.

Sowbugs are land adapted crustaceans (Order: Isopoda), more closely related to shrimp and crayfish than to insects. Physical features include having seven pairs of legs and two pairs of

antennae, one pair much more prominent than the other. They breathe through specialized gills that must remain moist to function.

Several aspects of their life history are rather unusual. Overwintering stages are adults, that in spring become active and mate after which the female produces eggs that she carries in a special pouch, known as a "marsupium". The eggs hatch in this pouch and the newly hatched young remain within it for several weeks. Typically it takes about 6 weeks from the time eggs are laid until the young leave the marsupium. About two dozen young are reared at a time and there may be two brood per year.

Perhaps the most odd aspect is their molting process, which occurs in two stages. First the anterior half is "shed"; 2-3 days later the posterior half is then shed. This can give them the "two-toned" color around the period of a molt. During the summer molting may occur about every two weeks. However, older pillbugs (and they typically live for two years) molt less regularly after 20 or so weeks of life.

Pillbugs are scavengers, primarily feeding on moist, decaying plant matter. Sometimes they will feed on tender garden seedlings, but rarely cause any significant injury and are considered to be minor pests of region gardens. Moreover, in some settings they are very useful in recycling plant nutrients by shredding dead plant material so that it may be broken down. Feeding usually occurs at night, spending the day under cover. However, they are often seen during the day, particularly after rains.

Periodically pillbugs wander into homes, a habit that is most common in spring and fall following periods of wet weather. However, because the humidity in homes is low, pillbugs rarely survive for more than a day or two.

Because of their ability to roll into a tight ball, pillbugs are commonly known as "roly-polys". In some areas they are also known as "potato bugs", although they have no special association with potatoes.

Rearing Pillbugs and Sowbugs: Pillbugs and sowbugs can be maintained for extended periods and will even reproduce well in captivity. Basic environmental needs are sufficient moisture and appropriate food.

Rearing containers should have a base of moist soil or sand, covered with a layer of decaying leaves or old bark. The soil should be kept moist as these animals are very sensitive to drying, but avoid waterlogging. Flakes of fish food and pieces of vegetables or fruit (potato, carrot, apple) are good choices for foods but these need to be cleaned out frequently because of problems with molds in the humid environment. (Cranshaw)

TOMATO/POTATO PSYLLID FLIGHT HAS BEEN LIGHT

What a difference a year makes. In 1999 there was one of the most intensive migrations ever, of potato/tomato psyllid into eastern Colorado. So far, 2000 has some earmarks indicating it may be one of the lightest years in recent memory.

A brief review of seasonal habits of this insect is in order. Tomato/potato psyllid overwinters in areas along the extreme southern border of Texas, New Mexico and Arizona along with adjacent areas of Mexico. Most survive on certain perennial shrubs, but winter potatoes and,

in Mexico, winter tomatoes can be alternative hosts. Annual migrations northward begin when hot temperatures force them out of overwintering sites; high temperatures (above 90F or so) are unfavorable to the species and can cause them to be temporarily sterile. The intensity of the migration is determined by how many leave the wintering areas and on weather patterns that shape the flight paths. Other weather conditions may affect whether psyllids will stay in an area and reproduce or continue migrating; hot temperatures during migration often tend to push the migration further northward. A reverse migration apparently occurs in September and early October.

During the past week I found 1 adult psyllid/500 sweeps in potatoes in Larimer County, 0 psyllids/500 sweeps in Yuma, and 2 psyllids/200 sweeps in tomatoes in Rocky Ford. These numbers are a small fraction of what was being detected at this time last year and I have yet to find any nymphs. (I check pepper plants for the nymphs, an early season host that supports the insect but does not show significant injury symptoms, a.k.a. "psyllid yellows".)

Furthermore, there may be another factor that will work against psyllids this season. At this early date an insider for "Bug of the Year" are onion thrips which are being found in very high numbers on foliage of a wide range of broad-leaved crops - potatoes and tomatoes included. On the latter the thrips cause little, if any, significant damage - just a bit of leaf scarring. However, the thrips are hosts for a number of general predators such as minute pirate bugs, bigeyed bugs and damsel bugs. These insects are currently developing in large numbers on plants and may well have a spillover effect as they also readily feed on psyllids - should they arrive. (Cranshaw)

MULTICOLORED ASIAN LADY BEETLE - A NEW INSECT TO WATCH

The multicolored Asian lady beetle, *Harmonia axyridis*, is a lady beetle species purposefully introduced by the USDA several decades ago for biological control of various fruit and nut tree pests. After an extended period during which it was not thought to have established, it apparently adapted and since then has increased greatly in many areas of the US. Currently it is well established in most of the states east of the Mississippi and also in the Pacific Northwest.

The multicolored Asian lady beetle has proved to be a voracious predator of aphids, primarily on trees and shrubs. However, it has a "dark" side - large numbers of them enter buildings for winter shelter, a habit similarly engaged by such familiar insects as boxelder bugs, elm leaf beetles, and cluster flies. Indeed in some areas of the country it is far and away the #1 call received at Extension offices regarding nuisance-invading insects. (The lady beetles are harmless and don't reproduce in homes, but being a "bug" of any type in the home, they are not appreciated by many.)

This species has continued to extend its range and was first detected in Colorado in fall 1998 in Larimer and Prowers counties. Since then it has also been found in Jefferson and Gunnison counties.

We would like to track the spread of this species in the State. Enclosed in this issue of *Pest Alert* is a "Wanted" poster, describing the insect and requesting that suspect samples be sent in for positive identification. One reason for this request is to simply map its spread. Underlying this is a more important desire to track to what degree it displaces native lady beetles. For example, in fairly recent history (late 70s, early 80s) another species of lady

beetle was purposefully introduced into Colorado, the sevenspotted lady beetle (*Coccinella septempunctata*). Within a very short time this species has become the predominant species in much of the State, rivaling the native convergent lady beetle (*Hippodamia convergens*). (Cranshaw)

See the **Poster** at the end of this PestAlert for pictures and a description of the multicolored Asian lady beetle.

THRIPS IN FIELD CROPS

Assefa Gebre-Amlak has reported onion thrips problems in alfalfa and dry beans and Ron Meyer has reported similar problems in dry beans. Onions thrips overwinter in wheat and other grasses. As the wheat and other hosts dry down, the thrips move out and infest adjacent crops. Onion thrips can infest a range of crops but dry beans, millet and onions are more commonly affected in eastern Colorado. These problems are usually sporadic and of limited great concern.

Onion thrips are common, rather small insects and have a wide host range. Thrips eggs are laid on the plant. Then two immature nymph stages feed on plants. The pre-pupal and pupal stages do not feed. Pupation occurs in the soil and new adults appear three to four weeks after egg hatch, under summer conditions.

Our mild winter has resulted in an overabundance of onion thrips and severe infestations in several crops. Alfalfa, dry bean and millet are covered below, but I also have seen reports of problems in potato, soybean and sunflower.

Alfalfa

Damaged leaves are curled and puckered. Regrowth can be delayed. There are no guidelines for treatment that I am aware of. However, we know that delayed regrowth can promote weed establishment and thus shorten productive stand life. Consider treatment if the crop has not greened up within seven days of cutting and soil moisture is adequate.

There are no efficacy data for control of thrips in alfalfa. Whitney Cranshaw has conducted numerous trials in onions in which pyrethroids generally have worked well. Pyrethroids registered for use in alfalfa include permethrin (Ambush, Pounce), cyfluthrin (Baythroid) and lambda-cyhalothrin (Warrior). Warrior has thrips on its list of alfalfa pests.

Proso Millet

The symptoms are yellowing of the leaves in no particular pattern, similar to a virus effect on small grains. If the thrips feeding is severe the leaves will turn brown and die.

Only carbaryl (Sevin and others) is currently registered for insect control in proso millet, but efficacy data are not available.

Dry Bean

Onion thrips can cause leaf cupping and distortion in dry beans, particularly in crops near winter wheat and in flood irrigated or drought stressed fields. Good treatment guidelines are not available for onion thrips, although we have not observed significant losses at less than 15 thrips per plant. However, Stan Pilcher and I did one study in 1985 where yields in treated plots averaged 44% more than the untreated control, with an average of 30 thrips per plant.

Since onion thrips can be present in high densities without damage, treatments should not be made unless both thrips and damage are observed.

Flower thrips, which can cause pod abortion, appear later in the season. Five flower thrips per blossom can reduce the number of pods per plant. Although this is the point where pod loss starts, economic losses may not occur until higher flower thrips densities are reached.

Insecticides registered for thrips control in beans are listed in the High Plains Integrated Pest Management Guide for Colorado, Western Nebraska, Montana, and Wyoming. Onion thrips have not been difficult to control, but flower thrips may prove difficult to reach with contact insecticides. (Peairs)

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

Sincerely,

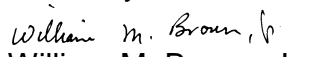

William M. Brown, Jr.
Extension Plant Pathologist



Photo 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, Jefferson, Prowers, and Gunnison 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