PLANT PEST Newsletter

MINNESOTA EXTENSION SERVICE UNIVERSITY OF MINNESOTA

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ALFALFA

REGROWTH OF INSECTS— Fields that have recently been cut should be checked closely for normal regrowth. Specifically, alfalfa weevil larvae and or adults can still be a problem this year.

As the regrowth continues to develop, alfalfa fields should also be scouted for potato leafhopper (PLH). Although other green leafhoppers have been present this spring, the PLH has arrived, and infestations have been increasing (Dakota Co.). A similar pattern has been observed in souther Wisconsin over the past weekend. Although there is no conclusive way to identify PLH without examining the male genitalia, female PLH will have a distinctive row of six white spots behind their head.

For more information regarding the Plant Pest Newsletter contact Extension Plant Pathology at 612-625-6290

UNIVERSITY OF MINNESOTA, U.S. DEPARTMENT OF AGRICULTURE, AND COUNTIES COOPERATING

Alfalfa / continued

Degree-day watch:
Minnesota degree-day (heat-unit) summary for Alfalfa Weevil and European Corn Borer as of June 7, 1994.*

Location	Alfalfa (Base = 48° F)	E. Corn Borer (Base = 50° F)
Alexandria	*605.6*	*526.1*
Cambridge	*559*	*481*
Faribault	*611*	*530*
Mankato	*693*	*607*
Morris	*674*	*589*
Rochester	*609*	*525*
Rosemount	*707*	*615*
St. Cloud	*577*	*498*
Waseca	*687*	*601*
Winona	617	534
Comparative degree-day accumulations based on 30-year temperature average		
Faribault	*455*	*376*
Rochester	*447*	*368*
Rosemount	*413*	*339*
St. Cloud	*410*	*338*
Waseca	451	372

*Based on double-sinewave method.
Weekly temperature data provided by Dave Bartels, Department of Entomology.

— Bill Hutchison
Extension Entomologist

ARMYWORM

Carlyle Holen, Area IPM Educator, reports a peak flight (87) of armyworm adults on the night of June 3 and averages of between ten to 15 adults per night beginning the Memorial Day weekend. Dan Palmer of DeKalb Genetics,Olivia, reports captures of 85 (June 6) and 166 (June 7) armyworm moths per night. These are enough adult migrants to lead to larval populations high enough to cause crop injury, provided soil and crop conditions are of a quality to permit egg and larval survival.

In any event, those of you monitoring small grain and corn should begin to see 1/2- to 3/4-inch larvae by the week of June 13, and visible defoliation the week of June 20 should the risk be high. A sweep net in small grain is a very efficient method for determining early on which fields are candidates for later closer observations. You cannot get accurate numbers of armyworm through this method but presence and absence can be easily ascertained.

By calendar date this is a fairly late armyworm flight, but with small grain planting delayed somewhat, the match to crop phenology may be good enough to create a greater risk for larval establishment.

— Dave Noetzel, Extension Entomologist
— Carlyle Holen, Area IPM Educator

BARLEY THRIP (BT)

Carlyle Holen, Area IPM Educator, reports Bt in barley ranging from two to nine adults per stem. Using the sequential sampling table provided by Barb Bates, NDSU the nine thrips is treatable, or very close thereof. I believe we may have placed an action level of ten (total of nymphs and adults) in some of our literature and with higher value

barley one might wish to treat a little below that level. Some of you have asked about Bt action levels for wheat. I'm quite sure that we had reduced yields in wheat due to Bt injury during the last major Bt outbreak. My inclination would be to use the Bt action level in barley for wheat as well this time around.

— Dave Noetzel, Extension Entomologist
— Carlyle Holen, Area IPM Educator

COLORADO POTATO BEETLE (CPB)

Adult feeding has been in progress since potatoes have emerged. In local spots in the Big Lake-Andover areas, nearly complete defoliation on field borders has occurred in some fields. Although we would like not to see insecticides applied for adults, clearly yields will be affected with this level of defoliation. Even so, apply as little adult control as is reasonably possible.

We observed the beginning of egg hatch in the Anoka Sands and in fields south of the Twin Cities on June 3 and 4. The biologicals (M-Trak and Novodor) should probably begin to be applied the week of June 6 to achieve maximum efficacy. I suspect the egg hatch will be over a much shorter interval than in 1992-93 and we may see better performance of these two products.

Again, where growers know that a product is virtually ineffective against CPB it makes no sense, economic or otherwise, to use the product. The grower obtains no benefit at all from the product's use. All they do is maintain the high level of insecticide resistance to that product in the CPB population.

We have heard nothing yet on the labeling of Admire, the chloronicotinyl compound, produced by Miles. I would proceed with a CPB control program with the (effective) tools we now have available. Do not apply insecticide unless there is a need. Later in the season, when CPB populations are very low, it would be good management to reduce insecticide use as much as is absolutely possible. You may have to continue routine fungicide use but don't throw in insecticide unless necessary.

— Dave Noetzel
Extension Entomologist

CORN

EUROPEAN CORN BORER EMERGENCE UNDERWAY — Captures of adult moths in black light traps have been sporadic until this week. During the last week, however, captures began to increase markedly in the southern third of Minnesota. Last night, I observed moths congregating in grassy action sites such as roadside ditches and waterways. After four to five days newly emerged moths begin laying eggs when evening weather is favorable. Calm, warm evenings (above 55° F) with dew constitute prime egg laying conditions. Nighttime activity such as mating and egg laying are triggered by dew formation.

Corn borer captures should take off this week, with egg laying peaking four to five days later. The corn is certainly advanced enough to support corn borer larvae with minimal mortality from DIMBOA. If other weather conditions favor larval establishment, we could see some significantly infested fields. The prime time for scouting will be the next two to three weeks.

— Ken Ostlie
Extension Entomologist

SUNFLOWER

SUNFLOWER BEETLE (SB) — As we suggested last fall, if we were to pick an insect that had the greatest probability for increase in 1994 we thought SB would be it. We visited fields last week that approached having two adults on every two- to four-leaf plant (two adults/plant is usually treatable). Defoliation was in the 50 percent range. Eggs per plant ranged from five to more than 20.

Although you obviously can't let them consume the entire seedling, try to hold off treating for adults of this insect. If you do treat, this is a case where a band treatment

at the very lowest dosage (0.015 lb AI broadcast equivalent) will be more than sufficient against adults.

Although egg hatch for SB will probably begin this week, larval defoliation will not become noticeable for at least a couple of weeks. I would wait for initial defoliation before treating larvae. In all of our field trials for larvae SB control, we have never demonstrated a statistically significant yield reduction. It is absolutely incredible how well the sunflower plant handles this defoliation.

Finally if you do decide to apply larval controls, Asana XL stands alone in its efficacy. Although I do not have data in hand, I'm sure that one-tenth of the lowest label dosage will handle SB larvae easily. This is one insect against which we obtained only a nickel return for each dollar spent on insecticide in the early 1980s. Let us not repeat that lack of wisdom.

— Dave Noetzel
Extension Entomologist

ORGANIC CONTROLS FOR SUNFLOWER BEETLE — We have received several requests for organic control methods for sunflower beetle. I do not believe that any of the presently permitted organic pesticides (e.g. rotenone, pyrethrin, diatomaceous earth, etc.) are labeled for sunflower insects. We have looked at organics for control of seed insects, the sunflower pests which clearly affect sunflower seed yields, and have not found any effective for that purpose.

In the case of sunflower beetle I doubt any of the acceptable organic methods will affect adult beetles. However, I suspect Pyrenone and possibly Bt *tenebrionis* (M-Trak and Novodor) could provide acceptable larval control, if they were labeled. We will look at them now that we have the opportunity.

All growers should be aware that sunflower beetle rarely reduces sunflower seed yield. The defoliation can be spectacular and not affect seed production. Thus the risk of seed yield reduction from this pest is very low even when there is no control applied.

— Dave Noetzel
Extension Entomologist

CLINIC REPORTS

DIAL U

COUNTY AGENTS: Please Alert Master Gardeners to the Following Items

Fungus-killed flies. We have been receiving a lot of calls about flies that appear to be chewing or sucking on leaves or other plant parts. These flies, also known as seedcorn maggots, are found on every conceivable kind of plants, including apples and other deciduous trees, evergreens, shrubs, vegetables, flowers and weeds. They are about 1/4-inch long, a little smaller than house flies, with small patches of yellow on their abdomen. They characteristically have their legs at funny angles.

If you look closely, you'll discover that these flies are actually dead, killed by entomophagous (feeding on insects) fungi. They are quite harmless to plants; they just happened to land on them before they died. Obviously no control is necessary; any damaged plant parts where flies are resting is coincidental. (In at least one case we know of, someone at a garden center identified a fungus-killed fly as a leafhopper and recommended an insecticide to treat it with.) Extension staff and master gardeners: see also Dial-U brief entitled *Fungus Killed Flies*.

Spittlebugs. Whitish, frothy masses on strawberries, perennials and other plants are the result of immature insects called spittlebugs. Spittlebugs form their 'spittle' by secreting liquids mixed with air. If you remove this froth, one or more small, green spittlebugs are revealed. Fortunately in most cases, there is little damage as only small or moderate numbers are present.

The best control method for the spittlebug is to remove and crush the insect. The spittle mass protects the insects from direct insecticide treatments. If you are experiencing large numbers of spittlebugs, try hosing off the frothy material first and then treat with a product such as insecticidal soap or acephate (Orthene). In most cases if you ignore spittlebugs, there is little lasting injury.

Bed bugs. We have been receiving an increasing number of bed bug samples. Bed bugs are brown, wingless, and about 1/4-inch long with a flattened body. Bed bugs feed on blood, usually at night. They hide in cracks and crevices or behind objects during the day. The bite is usually painless, but the site of the bite can swell and leave a lump.

There are several species of bed bugs encountered in Minnesota. The most common is the bat bed bug which is associated with bats. To control bed bugs, it is important to seal cracks and crevices and remove objects, such as

pictures, that may serve as hiding places. If the bed bugs are associated with bats, it is necessary to expel the bats from the building. Supplement this with a residual insecticide such as chlorpyrifos, permethrin, or diazinon applied to cracks and crevices and other places where bed bugs may hide. See AG–FS–1022, *Bed Bugs*.

Four-lined plant bugs. These garden pests are active now. They attack a wide variety of plants including chrysanthemums, chinese lantern, shasta daisy, coreopsis, basil, and mint. Damaged leaves usually show small, round, brownish, sunken areas where the bugs were feeding. Adults are about ¼-inch long, yellowish green with black stripes and have wings folded over their back. Nymphs are smaller, with a bright red body and wingless. Tolerate small numbers of four-line plant bugs when possible. If control is necessary, spray a labeled insecticide such as acephate (Orthene) or malathion as soon as damage is noticed. Use insecticidal soap on herbs.

Maple problems continue. Silver and red maple seem to have more than their share of black blotches and spots this season. The blackened areas of the leaf may be mostly along the edges and the cause is most likely due to environmental stress, especially hot windy weather or possibly a bacterial blight. Otherwise, black spots or blotches could indicate insects, mites or disease. If the spots and blotches are present in the inner and lower parts of the tree, then a fungal leaf spot or anthracnose is likely. If the spots and blotches are found throughout the tree, then insects, mites or perhaps environmental conditions are responsible. Insects, mites and diseases generally cause minimal damage to the leaves of healthy trees, and control is not necessary. The very best thing to do is to provide extra water during dry periods.

Puffy plum pockets plentiful. Enlarged bladder like plums are the result of a fungal infection earlier this spring. Small white blisters develop on the very young fruits and enlarge to produce misshapened, bladder-like, light green "fruits." The centers of the "pockets" are hollow, and the outside may become covered with a powdery gray fungal growth. Eventually the infected fruits turn light brown, wither and fall off the tree. Fortunately, plum pockets is seldom more than an oddity, but if necessary, it can be prevented by applying Bordeaux mixture in the spring before the flower buds open.

Trees, trees, trees. We're getting samples with herbicide injury now (we've had some very windy weather lately), along with samples of winter injury. Many trees are flexible and have green tissue below the bark on their twigs, but simply have not leafed out. Others bloomed or leafed out, then have dried up later. (Also discussed in last week's newsletter)

What to do? If the herbicide injury isn't too severe and the tree is not a young one with more than only a few years in the landscape, chances are good that the tree will put out a bit of normal growth yet this summer, then leaf out again next spring. If it is a young tree or heavily damaged, new growth may continue to be distorted.

If you accidentally get herbicide on foliage (trees or other plants), rinse it off immediately with a forceful stream of water. If you don't know about it till symptoms show up a day or two later, there's little you can do but "baby" the tree to limit additional stress.

Water soil thoroughly beneath the branches anytime we go a week or so in hot weather without good rainfall. Water more often on sandy soil; less often on heavy, clay soil. This is also good advice for winter-injured plants. Don't fertilize them. The extra fertilizer will only add to the stress.

Spring flowering bulbs. Hard to believe, but we're already getting catalogs offering good deals on spring-flowering bulbs to plant next autumn. Actually, this is an excellent time to assess your spring bulb display and decide which bulbs should be replaced and how many more will be needed to fill in bare areas.

After the greens yellow, you may dig spring bulbs and sort them by size. Keep only the large ones to replant or store till fall; discard the tiny bulbs that have divided up into small pieces.

Evergreens. It's okay to prune evergreens now. Where new growth comes on "candles," as in pines and spruce, you can shorten each candle to as little as two-thirds of its original length. Yews, junipers and arborvitae continue to put on new growth all season and can be sheared back several times if necessary. Stop pruning evergreens the second half of July to allow the plants to harden off for the following winter.

Creeping charlie. Finally, what *Plant Pest Newsletter* would be complete without some mention of creeping charlie? It's definitely a plant people love to hate. As we get into hotter weather, keep in mind that herbicides will be most effective against this and other broad-leafed weeds in the autumn when the plants are storing carbohydrates in their roots.

If the creeping charlie is so thick there's little grass visible, it can be killed with glyphosate (Round Up), then the area sodded or re-seeded. There's no point in using

broad-leaf herbicides when there isn't much grass to protect in the first place.

Bats in homes. Bats can be excluded from the home by simply locating the entrance/exit crevice and repairing it with caulking material or any other product such as wood or metal. Locate the crevice at dusk by standing around the area of the home you believe to be inhabited by bats. After spotting the first bat, wait about 30 minutes for the others to leave, then repair the crevice. One consideration in bat removal is the presence of young until early fall. Removing bats in mid-August or later will reduce the chance of trapping young in the home.

Other calls. Common calls we've received include questions on transplanting trees, shrubs, perennials; fertilizing same, identifying weeds and wildflowers, carpenter ants, maple bladder galls and other insect and mite galls, and ash plant bugs and their damage.

— Cynthia Ash, Plant Pathology
— Deborah Brown, Horticulture
— Jeffrey Hahn, Entomology
— Julie Wermerskirchen, Wildlife

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