



Vol. 17 No. 06

# Pest Alert

May 12, 2000

**The Pest Alert is now found on the World Wide Web at  
[www.colostate.edu/programs/pestaalert](http://www.colostate.edu/programs/pestaalert)**

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## **DIFFUSE KNAPWEED MANAGEMENT IN COLORADO**

Infestations of diffuse knapweed (DK) are spreading rapidly in Colorado, particularly along the Front Range. Now is the time to begin managing this weed.

Biocontrol insects can be used to combat DK infestations. Best DK population reduction is achieved by using insects that feed on rosette roots although (e.g. diffuse knapweed root beetle; *Sphenoptera jugoslavica*), seed feeding insects deter weed spread. For information concerning insect availability, call the Colorado Department of Agriculture at (303) 239-4140.

DK also is controlled by several herbicides including Banvel at 2 pt/A; Banvel plus 2,4-D at 1 pt + 1 qt/A; Curtail at 2 qt/A; Transline at 0.5 pt/A (**roadside/non-crop only**); and Tordon at 1 pt/A. These herbicides should be applied in spring to DK rosettes. Research by CSU Weed Science found that handpulling or mowing of diffuse knapweed doubled weed density. Soil disturbance caused by mowing or handpulling stimulated diffuse knapweed seeds to germinate, which caused the increased weed density. Mowing in particular is a poor choice to control diffuse knapweed because the increased density in response to mowing remained doubled the year following mowing, whereas density in the handpulling treatments returned to previous levels the year after treatment.

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

Revegetation is an essential step in DK management to insure long term success. Fall is the best time to seed perennial grasses in Colorado. For additional information see CSU Service-in-Action No. 3.110 (Beck).

### **MUSK THISTLE MANAGEMENT**

Musk thistle is a biennial and only reproduces from seed. The key to successful musk thistle management is to prevent seed set. Musk thistle plants currently are in the rosette growth stage. This is a good time to locate infestations and begin treating with herbicides such as Banvel (dicamba), 2,4-D, Tordon 22K (picloram), Transline (clopyralid), and Curtail (clopyralid + 2,4-D). Musk thistle susceptibility to 2,4-D, Banvel, or Tordon decreases as the weed begins to bolt. When infestations are sprayed with one of these herbicides after bolting begins, and particularly when flowering, typically the plant dies but sheds viable seed. Thus, the infestation is perpetuated. Data are mixed as to whether musk thistle sets viable seed when sprayed with clopyralid after the weed is in the bolting growth stage, but Transline or Curtail will consistently control musk thistle when applied during the rosette growth stage.

Cooperative research conducted by Colorado State University and the University of Nebraska indicates that Escort (metsulfuron) will eliminate seed set when musk thistle is sprayed up to the bud growth stage. We found that 0.3 oz ai/A (0.5 oz of product per acre) was very effective. A good agricultural surfactant must be used (0.25% v/v or 1 qt per 100 gallons of spray solution) or good control will not be achieved. We also suspect that late treatment with Escort may be compatible with the musk thistle seed head weevil by separating the herbicide treatment and insect activity in time. That is, allow the first few musk thistle heads to mature and time herbicide application around the later developing lateral heads when they are in the bud growth stage. The seed head weevil will complete its life cycle in the first developing heads and destroy seeds. The later herbicide application may not harm the insect because it will complete its life cycle and exit the plant. In this way, a management system combining biological and chemical control can be used.

For additional information refer to Colorado State University Service in Action 3.102, Musk Thistle: Biology and Management. (Beck).

### **CANADA THISTLE MANAGEMENT IN PASTURES AND NON-CROP AREAS**

Canada thistle is ready to be managed. Be sure to integrate control methods into a management system and always consider seeding the infestation with perennial grasses in fall as a final management step. It usually is best to exert control measures for two consecutive years then seed perennial grasses in the fall. Also, a good grass population may accompany Canada thistle infestations and reseeding may not be necessary. Carefully examine the grass population to determine if reseeding is required.

Two biocontrol insects are available to *help* manage Canada thistle. *Ceutorhyncus litura*, attacks Canada thistle rosettes and a seed head fly, *Urophora cardui*, lays eggs in flowers causing the formation of huge galls and reducing seed set. These are available from the Colorado Department of Agriculture.

Tordon at 1 qt/A or Tordon + 2,4-D at 1 qt + 1 qt/A are very effective herbicides to control Canada thistle and can be applied anytime during the growing season. Other effective

herbicide treatments include Banvel at 2 qt/A applied in spring to rosettes or in fall; Telar at 1 oz/A (non-crop only) applied in prebloom to bloom growth stages; and Transline (non-crop only) at 0.67 to 1 pt/A or Curtail at 3 qt/A applied in spring after all Canada thistle has emerged. For additional information, call George Beck at (970) 491-7568 or see CSU SIA 3.108. (Beck)

### **CEREAL VIRUSES DEVELOPING INTO MAJOR PROBLEMS**

Wheat streak mosaic virus (WSM) and barley yellow dwarf (BYD) are developing into serious problems throughout the High Plains and adjacent areas to the southeast. Last week BYDV was called the number one problem in the state this spring. The BYD was reported as being the most serious in southeast and south-central Kansas.

In Colorado so far, WSM appears to be the major problem in the northeast and reports of BYD from the southeast are coming in. We are attempting to get a better understanding of the extent of the problem.

Why so much virus, especially BYD, this year? The mild fall and winter allowed the vectors, wheat curl mite for WSM and aphids for BYD, to build up last fall and in some instances, survive through the winter. This of course provided an extended period for transmitting these viruses and we are seeing the results this spring.

Identification sometimes can be difficult. Generally WSM will develop streak-like symptoms (Fig 1) whereas BYD will have a more yellowed (reddish in many wheat cultivars) leaf from the tip back (Fig 2). But there are instances where BYD will look like WSM, developing more of a streak-like mosaic rather than the bright yellow or reddish chevron symptom from the leaf tip down. In some cases, distribution in the field will provide some help. In general, WSM will develop from the edge of the field downwind from volunteers or other severely infected wheat. BYD, on the other hand, may be spottier. Usually the aphid come into the field at different locations (sometimes from the fence line), find a suitable host and multiple in the wingless stage giving a localized spot appearance in the field. Also WSM infected plants will frequently have a spreading appearance like someone stepped on them. BYD will have a stunted more erect appearance.

Figure 1.



Figure 2.



The CSU clinic is set up to provide accurate serological tests for WSM (\$25) but must send the ones for BYD out. We are hoping in the next few weeks to get the materials for BYD as well. The KSU Plant Diagnostic Lab in Manhattan, KS can do BYD for a \$10.00 fee, but there is a surcharge for out of state samples.

I strongly recommend that growers scout their fields and, if extensive damage is apparent, consideration should be given to plowing the fields down and getting a dryland corn, millet or other crop in while we still have time. (Brown)

### **TIME TO PUT TOMATO TRANSPLANTS OUT**

Our weather is doing lots of ups and downs (I even had a fire in the fireplace last night) but we are getting into that time when the temperatures will start to climb. It is a time when people want to start putting out tomato transplants. That's OK, but there are some precautions to take.

In many ways the sooner you get them out the more likely you are to miss potential psyllid, virus (curly top and other aphid vectored) and phytoplasma (aster yellows) problems. The earlier you can plant, the more likely you are to be ahead of the virus vectors and avoid severe infections. If you are going early, consider using water towers or hot caps to protect the plants at night.

Also consider the potential disease problems that do not show until mid-summer but are introduced into the garden on transplant sets. If possible, get tomato varieties with VFN multiple disease resistance.

Ned Tissert in Kansas points out that the trend to plant heirloom varieties could pose a problem because heirloom varieties do not have good resistance to *Verticillium* and *Fusarium* wilts or to root knot nematode (i.e., VFN). These pathogens can survive for long periods in the soils. If the varieties you choose are not resistant, plant them where no tomatoes, peppers, potatoes or eggplant have been grown for the last 2-3 years (i.e., rotation).

Virus diseases can also be carried by transplant sets. There are several viruses of tomatoes that can be spread in this way, the most serious of these is the tomato spotted wilt. The plants are infected in the greenhouses that frequently also have diseased ornamental bedding plants. Frequently the virus is spread in the greenhouse insect (thrips) transmission. Infected transplants may be stunted, have a yellowish or bronze discoloration of the new leaves, and typically have tiny black flecks or rings on the leaves. The most spectacular symptoms though, are often found on the fruit and consist of bright yellow and green concentric rings.

Last year bacterial canker was encountered in a few area gardens. This is another pathogen that is spread in transplant sets and will carry over in the soil on organic matter and debris.

The first, and in some cases the only, line of defense against these and other potential pathogens is to use pathogen free transplant sets. The most reliable place to obtain these is through well-established garden shops that have reliable suppliers and will stand behind their product.

Happy gardening! (Brown)

### **HOME OWNERS FORMULA FOR A WET BAIT FOR GRASSHOPPERS**

Following is a note prepared by Curt Swift (Area Extension Agent (Horticulture)-Tri River Area. I thought I would pass it on. (Brown)

Wheat Bran (free of shorts) - 5 lbs.  
Sevin 27% liquid - 2-1/2 fluid oz.\*  
Water - 1-1/3 quarts  
6 ounces of molasses

Mix the insecticide and water together and apply over the bran, mixing materials together until all bran flakes are wet. Then use about 1/2 lb. of bait distributed over 1000 square ft. of area. Wet bait should be spread immediately.

#### **Dry Bait**

A dry bait, using fuel oil or kerosene instead of water may be used. These will store and keep a little longer but it is more messy and costlier to produce. Reduce amounts of oil to 1/2 that of water.

A commercially prepared dry 5% Sevin bait is available and is quite attractive to grasshoppers, particularly young nymphs.

\*12 ounces of Sevin 50% wettable powder may be substituted for the liquid Sevin.

#### **Use of bait**

For slugs....apply in the evening where slugs are a problem -i.e. strawberry patch.

For cutworms...apply in the evening to vegetable or flower gardens and other areas where the pest exists.

For grasshopper....apply in early morning.

For crickets.....apply in evening.

### Question of the Week

I came across this from something someone forwarded to me. I think that some you may find it interesting.

#### AgWeb.Com Question of the Week Results

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March 31, 2000 to April 7, 2000

Question Category: Crop Protection Costs

"The best way to control crop protection program costs this season is to rely more on:

06% Application rates lower than label recommends

10% Buying cheaper through the Internet

17% Cultivation, with less spraying

30% Self apply, with less custom apps

10% Switch to cheaper products

21% GM crops with broad spectrum post-emerge products

06% Post-emerge products with narrow spectrum

765 Total number of responses\*

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

Sincerely,

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