



Vol. 18 No. 08

# Pest Alert

June 29, 2001

**NOTE: BEGINNING JANUARY, 2001, PEST ALERT WILL ONLY BE AVAILABLE ON THE WEB. FOR ELECTRONIC NOTIFICATION, PLEASE EMAIL YOUR ADDRESS TO [bspm@lamar.colostate.edu](mailto:bspm@lamar.colostate.edu). (Check out our complete web site!)**

**POTATO UPDATE (P 1)  
ONION UPDATE (P 1)  
DRY BEAN UPDATE (P 2)  
KARNAL BUNT UPDATE (P 2)  
IS THERE RISK OF KARNAL BUNT ESTABLISHMENT IN COLORADO? (P 4)  
EDUCATION AND TREE TOPPING (P 5)  
PUBLICATION ON WILT DISEASES OF SHADE TREES (P 6)  
MUSHROOMS IN LAWNS MOST LIKELY NOT FAIRY RING (P 6)  
CEREAL LEAF BEETLE (P 6)**

## POTATO UPDATE

Potato Late Blight Models have exceeded the threshold level of 18 Severity values at various locations across northeastern Colorado. See Pest Summary at <http://www.csuag.com>

Potato Early Blight Models area near or now above the threshold level of 300 at many locations across northeastern Colorado. See Pest Summary. Maintain the protectant fungicide program on a weekly basis with products which include EBDCs (maneb, mancozeb, Penncozeb, Dithane, Polyram), Bravo/Equus, SuperTin, Quadris with an adjuvant if recommended on the fungicide label.

Early spring conditions in eastern Colorado during May and early June provided adequate moisture and cool to moderate temperatures which favored the emergence of volunteer plants from last season's fields where pathogens may have been present. Scout these areas for evidence of overwintering and infection by pathogens such as early blight of potato. Destroy these sources of inoculum, which can be spread by wind, water and implements to new crop fields during June.

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

### **ONION UPDATE**

There are NO reports of Downy Mildew on onion transplants yet, but a fungicide program may be beneficial if the threat and cooler and/or moister weather conditions occur during late June to early July. Purple Blotch forecast models are near or above the threshold level of 300 in the northeastern part of Colorado for fields with an emergence date of April 1, so scout aggressively for early signs of disease. The west slope and Arkansas Valley regions are still below the threshold with their warmer and drier averages.

Effective fungicides include Bravo, EBDC (maneb, mancozeb, ManKocide, penncozeb, Dithane), and Ridomil package mixes (with EBDC, copper, Bravo/Equus). Bravo/Equus, ManKocide and EBDCs are protectants that may have to be applied every 7 - 10 days, while the Ridomil provides protection against Downy Mildew for 14 days or longer in the threat persists. The EBDC and Bravo/Equus products and Rovral are effective against Purple Blotch. Add an adjuvant if recommended on the fungicide label.

If there is a history of bacterial soft rot in your fields or area, you may want to include a copper-based bactericide (Champ, NuCop, Kocide, ManKocide, etc) as older transplants near bulbing. Bacterial soft rot and Xanthomonas Leaf Blight have been detected in the Arkansas Valley, and may threaten transplant onions and seeded onions after bulbing.

### **DRY BEAN UPDATE**

The May and June weather data from COAGMET illustrate that 2001 has been cooler and wetter than experienced in northern and southern Colorado production regions during the 2000 season. The west slope averages are similar to 2000 - warm and dry. Bean rust was confirmed on volunteer beans northeast of Haxtun, CO in early June. A recent survey to northwestern Nebraska detected volunteer beans, but no signs of overwintered rust in fields that were infected in 2000.

The moist May and early June could favor pest development from the 2000 crop debris and volunteers. Scout last year's fields for evidence of overwintering of key pests of bean (rust, Mexican bean beetle, thrips).

Use sanitation (cultivation, plowing) and selective herbicides to remove these overwintered plant sources of pests before they can be moved into new crop fields located downwind or downstream from these infested sites. Aggressively scout new crop fields for evidence of early development by these pests before implementation of pesticide programs. Monitor COAGMET weather patterns and pest forecast models, and share pest sightings with VEGNET personnel.

Bacterial disease management with copper-based bactericides such as Champ, Kocide, NuCop should be initiated as a preventive program at 30, 40 and 50 days post-planting. Add an adjuvant if recommended on the bactericide label. (Schwartz)

### **KARNAL BUNT UPDATE**

APHIS has a web page that gives daily updates. As of June 28, 2001 they were reporting the status of Karnal bunt (KB) in the quarantine areas. In Texas, KB had been found at a grain facility in Ft. Worth and another one in Wichita Falls, Texas. Grain is continuing to be sampled and tested for the presence of KB. The grain in these facilities has not been

permitted to be moved until APHIS determines if a connection with an infected facility in Baylor County exists. No additional KB has been found.

**Status of testing (Young, Throckmorton, Archer, Baylor, and Knox Counties):**

There are 17 fields that tested positive for KB. These represent 7 growers on 1500 acres. The harvest is complete except for some positive fields left standing waiting for grower's decision on what to do with the grain.

Total positive fields by county:	Young County	16
	Throckmorton County	1

<u>Samples</u>	<u>Positive</u>	<u>Negative</u>	<u>Total</u>
Field	16	181	197
Elevators(bins)	43	142	185
<b>Totals</b>	<b>59</b>	<b>323</b>	<b>382</b>

**Status of facilities (Young, Throckmorton, Archer, and Baylor Counties):**

The following facilities have tested positive for KB:

<u>County</u>	<u>#Facilities</u>	<u>#Bins</u>	<u>#Bushels</u>
Young	1	2	75,000
Throckmorton	1	1	10,000
Archer	2	6	30,000
Baylor	4	8	201,000
<b>TOTALS</b>	<b>8</b>	<b>17</b>	<b>316,000</b>

**Facilities in cities that received and/or tested positive for bunted kernels:**

<u>County</u>	<u>#Facilities</u>	<u>#Bins</u>	<u>#Bushels</u>
Ft. Worth	1	5	75,000
Wichita Falls	1	2	1,000,000
<b>Totals</b>	<b>2</b>	<b>7</b>	<b>1,075,000</b>
<b>GRAND TOTALS</b>	<b>10</b>	<b>24</b>	<b>1,391,000</b>

On 6/27/01 APHIS reported that there were 24 certificates issued for grain movement making a total of 385 certificates issued to date. There also have been 34 certificates issued for movement of cleaned/disinfected harvesting equipment outside the regulated area.

The good news, APHIS reports that they have received no inquiries regarding the Karnal bunt situation from concerned trading partners.

For those of you interested in the procedures for collection of grain samples for the National Karnal Bunt Wheat Grain Survey, the specifics can be found at:

<http://ceris.purdue.edu/napis/pests/kb/news01/kb01plan.txt>

There is concern as well about cattle movement and how the Karnal bunt situation affects grazing, feeding, and the movement of cattle outside the regulated areas. Research has shown that animals can move the KB pathogen and thus infest new areas. Therefore there is considerable discussion on this subject as well. This could be an important avenue for movement of KB into Colorado.

For more information on Karnal bunt, see the new USDA-PPQ Karnal Bunt Website at:

<http://www.aphis.usda.gov/ppq/emergencyprograms/karnalbunt/> (Brown)

## **IS THERE RISK OF KARNAL BUNT ESTABLISHMENT IN COLORADO IF INTRODUCED?**

There has been a lot of discussion about whether or not Karnal bunt (KB) could become established and subsequently become a threat to Colorado wheat production. We have continually maintained that Karnal bunt is not really a production problem but rather a political and marketing problem. In fact I frequently have stated that even if it was introduced into the state, that with our high temperatures and general lack of rain during flowering, it would not become established and subsequently a problem.

Well I said the same about late blight of potatoes and wheat stripe rust! And many of you know what is happening to us with the late season epidemic of stripe rust we are having this year. And of course late blight has come and is still around and a potential problem as well. So I decided to take a second look at what some others are saying. Boy was I surprised.

On the APHIS web site (see above) there is an interesting article by Marlene Diekmann titled, ***Assessing the Risk of Karnal Bunt Establishment in New Areas Based on Climate Data***. Risk assessment is a specialized area of study and procedure that takes numerous facts about a pest/disease problem and analyzes them to determine if there is actually a risk if introduced into a new area. Such a procedure was used to help get China to drop its dwarf bunt against U.S. wheat. In Dr. Diekmann's study she took climate data from locations where Karnal bunt is reported to occur and compares them with areas where wheat is grown but the disease is not reported. The basic observations she used were the differences between:

- mean daily maximum and mean daily minimum temperature in the month of planting
- mean daily minimum temperature in the coldest month, and
- mean daily maximum temperature in the month of flowering.

Assuming that Dr. Diekmann estimated the planting and flowering months correctly, a risk based on weather data station records was perceived for areas near Phoenix and Denver. On the other hand she stated that Houston, Chicago, Kansas City, St. Louis and especially Seattle would not have the climatic conditions conducive to the establishment of the Karnal Bunt pathogen.

Now many of us are somewhat skeptical of mathematical risk assessment models, but as Paul Harvey would say, "here is the rest of the story". Dr. Diekmann's study was conducted before the 1996 outbreaks in the U.S. And of course it was in the Phoenix area that the Karnal bunt pathogen was first found.

Now that gives us a little food for thought. (Brown)

## **EDUCATION AND TREE TOPPING**

Curt Swift (Coop Extn., Grand Junction) prepared this report for their list serve this week and I thought it was relevant to pass on to those of you that do not access that list serve. Tree

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topping is a continuing problem in many Front Range and High Plains communities. In some communities there are local ordinances against the topping of trees. The following review by Dr. Swift of a paper by:

**Close, D.D., Groninger, J.W., Mangun, J.C., and Roth, P.L. 2001. Homeowners' opinions on the practice and effects of topping trees. *Journal of Arboriculture* 27 (3):160-165,** provides the science to show how damaging topping is to trees. (Brown)

"Topping is recognized by professional arborists to negatively impact tree health, and detract from the "aesthetic beauty of trees". This practice, however, continues to be a serious issue for urban foresters, professional arborists, and extension educators.

Topping is often associated with utility line clearance particularly in communities lacking protective tree ordinances. The majority of those who experience utility topping are excluded from the decision to have their trees topped. According to this research article more than 65% of homeowners with utility-topped trees were dissatisfied.

The authors also conducted a survey of homeowners who voluntarily had their trees topped (for non-utility line purposes). The highest level of education attained and annual income was included in this survey. Fifty-one percent of these homeowners erroneously believed topping would enhance the life span of a tree, and 67% of these homeowners were satisfied with the results of the topping.

This research indicates homeowners satisfied with the results of topping had an overall lower level of education than those that were dissatisfied or neutral with the results. In other words, topping appears to be attractive to homeowners with lower levels of educational attainment. These findings are consistent with a previous research report (1) that found topping was more common among older, less educated, and less affluent members of society.

Trees and tree care "is cloaked in easy myths and comfortable traditions". "Professionals know changes will occur in their professions and will continue to better themselves against the darkness of ignorance" (2). It appears that some tree trimmers still live in this dark world, especially when it comes to topping trees. Otherwise, topping would not occur.

It would be interesting to conduct a survey of the educational status and formal training of tree trimmers who recommend and perform the practice of topping". (Curt Swift)

#### Citations

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1. Fazio, J.R., and Krumpke, E.E. 1999. Underlying beliefs and attitudes about topping trees. *J. Arboric.* 25(4):193-199.
  2. Coder, K. 2001. Keeping Science. *Arborist News* 10(3):3. Dr. Coder is Professor of Forest Resources, University of Georgia, and president-elect of the International Society of Arboriculture.

## **PUBLICATION ON WILT DISEASES OF SHADE TREES**

The American Phytopathological Society is publishing a 275-page reference on Shade Tree Wilt Diseases. This book is a compilation of research and applied information based on a recent national conference on this topic.

Dutch elm and oak wilt diseases are covered along with other wilt problems. A discussion of this book along with a detailed table of contents is available at <http://shopapspress.org/shadtrewildi.html>

You can order this book on line at the above web address for \$69 + \$6 for shipping and handling for a total of \$75. (Curt Swift)

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

With the abundance of rain we had earlier and now heavy watering because of the hot dry weather we are experiencing we are starting to see mushrooms "popping" up in lawns. Most of these are not associated with fairy ring or other turf diseases but are just part of the turf ecology. Most are not known to do any damage to the lawn and are not harmful to pets.

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

If the mushroom's 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)

## **CEREAL LEAF BEETLE**

Recently, Bob Hammon reported finding cereal leaf beetle in Routt County. Although this is a preliminary observation, it is not surprising, since this pest has been in Utah since 1984 and in Wyoming since the mid-90s. It is too early to tell what the impact on Colorado agriculture will be, but spring grains grown in the northwest, southwest, San Luis Valley and northern Front Range areas of the state are most likely to be affected.

The following information on cereal leaf beetle was taken from the *High Plains Integrated Pest Management Guide for Colorado–Western Nebraska–Wyoming* (<http://scarab.msu.montana.edu/hpipm/>). It has not been updated to include the last 3-4 years of experience with this pest in the western states.

### **Description and Field Biology**

Adult cereal leaf beetles are five millimeters (3/16 inch) long, with a metallic blue head and wing covers, a red pronotum (neck) and yellow-orange legs. Newly laid eggs are elliptical, yellow, and about the size of a pinhead; they reflect light well. Larvae are dark and slug-like in appearance. Their skin is yellow or yellowish brown and covered by amass of slimy, dark,

fecal material. Clusters of adult beetles overwinter in grass stems, grain stubble, cracks, and fenceposts. In the spring the adults emerge when maximum daily temperatures reach about 10°C (50°F). They immediately begin heavy feeding on wild grasses and then move to winter wheat and spring oats and barley if available. Adults prefer spring grains to winter wheat.

Within two weeks the beetles quit feeding and the females begin laying eggs. One female may lay up to 300 eggs, depositing each egg on its side, singly or in rows of three or four. Normally, eggs are placed on the upper leaf surface near the midrib of the leaf. Eggs hatch in four to 23 days, depending on temperature. After feeding for 10 to 14 days, the mature larvae crawl down the plant into the soil to pupate. The entire length of larval feeding can extend beyond two weeks because of extended egg laying and egg hatch. In two to three weeks, a new generation of adult beetles emerge. The newly emerged adults feed on a variety of plants, but prefer succulent grasses, grain, and young corn. After about two weeks of feeding, the adult goes into a period of summer dormancy. As temperatures drop in the fall, the adult beetles search out suitable overwintering sites.

### **Plant Response and Damage**

Most adult damage is easily outgrown by the plant. Larvae have a unique feeding pattern, they eat the upper layer green mesophyll cells, which create the green color and generate plant energy. They feed down to the cuticle, staying between the leaf veins. When viewed closely, elongated slits are apparent following the veins. This feeding pattern gives the leaves a "frosted" appearance when viewed from a distance.

### **Management Approaches**

#### Resistant Varieties

Though resistant varieties are not commercially available; resistance screening indicates that leaf pubescence results in fewer eggs being laid and deters feeding by young grubs.

#### Biological Control

Five species of exotic parasites have been used as biological control agents, including an egg parasite, *Anaphes flavipes* (Forester), and a larval parasite, *Tetrastichus julis* (Walker). The importance of these parasites is not clearly established, but *T. julis* has become established in northwestern Wyoming and Montana where cereal leaf beetle occurs. Parasitism by *T. julis* currently varies greatly (zero to 100 percent of larvae dissected, averaging 26 percent). This high variation may be due to the parasite's recent introduction. In the mid-western states, where cereal leaf beetle and parasites have been present for several decades, these parasites have had great impact on the economic status of cereal leaf beetle.

#### Chemical control

#### Surveying

Eggs near hatching and larvae are the target of insecticide control and are monitored by plant inspection since thresholds are expressed as egg and larvae per plant or per stem/tiller, based on work at Montana State University and USDA-ARS. Examine 10 plants per location and select one location for every 10 acres of field. Count number of eggs and larvae per plant

(small plants) or per stem/tiller (large plants) and get an average number of eggs and larvae per plant or stem/tiller.

### Economic Thresholds

Boot stage is a critical point in plant development and impact of cereal leaf beetle feeding damage can be felt on both yield and grain quality. Before boot stage, the threshold is: three eggs and larvae or more per stem/tiller. Larvae feeding in early growth stages can have a general significant impact on plant vigor. At boot stage feeding is generally restricted to the flag leaf which can significantly impact grain yield and quality. The threshold is decreased at the boot stage to: one larva or more per flag leaf.

These thresholds may need to be modified for malting quality barley because of its higher quality and high grain quality needs. (Peairs)

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Sincerely,

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