Cooperative Extension: Colorado State University, Fort Collins, Colorado 80523

Pest Alert

Vol. 18 No. 09 July 12, 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. (Check out our complete web site!)

POTATO UPDATE

July 9, 2001 UPDATE: Earlier in June, Potato Late Blight Models exceeded the threshold level of 18 Severity values at various locations across northeastern Colorado. However, there are no confirmed reports of the disease in our region, presumably due to clean seed pieces and/or hot dry conditions after the threshold was crossed. See Pest Summary at http://www.csuag.com

Potato Early Blight Models are above the threshold level of 300 at most 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.

ONION UPDATE

July 9, 2001 UPDATE: There are still NO reports of Downy Mildew on transplanted or seeded onions, but a fungicide program may be beneficial if the threat and cooler and/or moister weather conditions occur during 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 as their warmer and drier averages persist.

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 to improve plant coverage. If there is a history of bacterial soft rot or other bacterial diseases in your fields or area, you may want to include a copper-based bactericide (Champ, NuCop, Kocide, ManKocide, etc) plus EBDC and adjuvant as older transplants begin to bulk up. Bacterial soft rot and Xanthomonas Leaf Blight have been detected in the Arkansas Valley, and may threaten transplant onions and seeded onions after bulbing. Bacterial soft rot and slippery skin have been observed in the Front Range area, especially on fields with some storm damage. As onions bulb and begin to bulk up, the bacterial disease complex will become more prevalent.

DRY BEAN UPDATE

July 9, 2001 UPDATE: The May and June weather data from COAGMET illustrate that 2001 was 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 survey to northwestern Nebraska detected volunteer beans, but no signs of overwintered rust in fields that were infected in 2000. When rust is confirmed in new crop fields this year, fungicide options include Maneb/Manex (30 day preharvest interval), Bravo (14 day interval), and Tilt (28 day interval); Tilt will have a Section 18 label for 2001 in Colorado until August 31.

Use sanitation (cultivation, plowing) and selective herbicides to remove overwintered sources of beans and 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. Initiate or continue copper sprays on hail-damaged fields of beans; wait a few days if more than 50% of the canopy was stripped by storm damage to allow new growth to emerge and benefit from the protection. Do not use sulfur-based products as curatives for wounds, sulfur will just burn tissue and act as a defoliant at high rates; wounded tissue will dry out naturally and not be a further disease threat to surviving tissue.

KARNAL BUNT UPDATE

Texas

Seed sampling and testing continues in the north central Texas quarantined areas. No new counties have been reported but an elevator in Knox County, outside the quarantine area that had received grain from Thockmorton County was found contaminated.

To date in Texas there are 20 fields (10 producers, less than 2000 acres) tested positive for bunted kernels. Harvest is complete now except for a few positive fields left standing awaiting the grower's decision.

Totals to date
16 positive fields in Young County
1 positive fields in Throckmorton County
2 positive field in Archer County
1 positive field in Baylor County

Arizona

The vast majority of wheat from the 2001 harvest season in Arizona quarantined areas were harvested by June 25th. Four fields of decorative wheat and one Arizona State University plot remain standing until fall for harvesting and testing for seed. These are the only seed samples that will be tested from Arizona regulated areas in the 2001 harvest season.

The 92-KB positive fields in Arizona represent 4080 acres of wheat. The 310 fields of negatively tested wheat represent 13,915 acres.

New Mexico

Harvesting in New Mexico was completed on July 5th and the nine regulated fields planted with wheat were sampled and all tested negative. This represents 175 acres and none were harvested for seed.

California

The main grain harvest in quarantined areas of California was completed by June 16th. The three fields that tested positive represent 142 acres, or 1,050,000 pounds from one producer. None were to be used for seed.

National survey

The results from the National Survey are in for five states: Georgia, Louisiana, Mississippi, South Carolina, and Tennessee. All were negative. The following states are partially complete and all have reported negative to date: Illinois, Kansas, Oklahoma, and Texas. For more information on karnal bunt, see the new USDA-PPQ Karnal Bunt Website at: http://www.aphis.usda.gov/ppq/emergencyprograms/karnalbunt/

The new Karnal Bunt Fact Sheet and Question and Answer sheets are available at: http://www.aphis.usda.gov/oa/kbunt/karnbunt.html
(Brown)

WHEAT STRIPE RUST IN COLORADO-WHAT HAPPENED!

Well, the latter part of the wheat season in Colorado (and elsewhere) was quite unique. As the harvest progresses it is going to be interesting to see what the yields are. The same rains that saved much of the state's wheat also brought the wheat stripe rust disease. Wheat stripe rust is a fungus that attacked the leaves and in some instances the glumes of wheat. It developed in the cool, humid conditions that were prevalent the last of May and early June. Normally not the kind of conditions we expect at that time. As such we have never seen a problem with stripe rust on the plains in wheat. Granted once in a while we could find the disease but never at significant levels.

Early in the season it was seen developing in Texas, then Oklahoma and then in Kansas where it is equally as rare. Normally it would have been stopped by increased temperature and dryness and not progressed further. But not this year. In mid May, when we were doing our tri-state (Wyoming, Nebraska and Colorado) wheat disease survey, there were no diseases of any kind prevalent. The warm temperature had stopped the stripe rust in Kansas and the wheat was in the boot here. But later in May and the first week of June it took off again and moved into Colorado wheat the first week of June during flowering and eventually moved all the way to the Front Range. Irrigated wheats such as Platte were hard hit. This was as much due to the increased nitrogen and higher plant populations in irrigated wheat as it was the susceptibility of the variety.

In looking back over the season several questions have been asked by researchers and growers alike. Bob Bowden in Kansas has addressed these in detail and I am basically quoting his questions and some thoughts here as well as my own experience over 25 years with a similar stripe rust of barley

Where did it come from? The stripe rust fungus does not survive in the US. Normal it survives on green host tissue in Mexico and sometimes Texas. This year it was first noted in mid-March in the area around Uvalde, Texas. In Kansas, according to Dr. Bowden, in April 9-10 and again around April 21, very strong southerly winds traveled directly from the Gulf Coast to Kansas, this probably brought the fungus spores into that area much earlier than would be normal.

How did it develop in Colorado? Wheat stripe rust was first reported in southern Kansas on May 2 at Hutchinson. During the week of May 7, reports of stripe rust were coming from between Dodge City and McPherson and from south of Highway 56 to the Oklahoma border. At this time unusually warm weather from May 14-17 was expected to inhibit further development of the epidemic and Dr. Bowden reported rust lesions on most varieties began to dry.

On May 19, a cool, wet period began which lasted three weeks and the fungus took off again and by May 29, it was in the Goodland, KS area. It was this second burst of spores that got into Colorado and caused our initial infections.

Have we had this problem before? No, we have seen traces of stripe rust on occasion but never at the level seen this year. Dr. Bowden noted that it is pretty much the same in Kansas but that last year there was a small outbreak of stripe rust in central Kansas that caused an estimated loss of 0.05%. When he examined the official USDA rust loss estimates from 1918

to 1976, there was no data for stripe rust losses in Kansas. But in discussing it with staff at the USDA Cereal Disease Lab (formally the national rust laboratory) in Minnesota there were some old reports from 1957 and 1958 of stripe rust epidemics in the Southern Plains that pretty much matched the situation in 2000 and 2001.

Both 1957 and 1958 were unusually cool and wet across the Southern Plains. In 1957, there was a serious epidemic in the Texas panhandle, but only a trace in Kansas and as far as I can find none in Colorado. Bob points out that Texas researchers in 1957 and 1958 tracked the stripe rust source back to higher elevations around the Monterrey, Mexico area. This matches our experience with barley stripe rust as well.

Would fungicides have worked? Yes, foliar fungicides would have worked if applied early enough. Excellent control can be obtained with Tilt when if applied before disease severity on the lower leaves is about 5% at the late boot stage. My work with barley stripe rust in South America also supports Dr. Bowden's observations. If we waited until after 5% disease, fungicide helped very little.

A compounding problem arises in that Colorado, Tilt can not be used beyond boot. At boot we had no rust and it appeared to be stopped in Kansas. At that point with wheat at less than $3 and Tilt at about $12/acre it is unlikely anyone would have sprayed. The rust hit us at flowering and the only alternative was to use Quadris, the new strobilurin fungicide from Syngentia. Here the problem exists that it would have cost between $24-28/acre and even more critical, has a 45-day pre-harvest interval. So effectively we were out of luck.

Will stripe rust be a problem next year again? It is unlikely that we will see this kind of a problem again for another long time. If the kind of weather that we saw this spring occurs again and the inoculum gets into Kansas early enough then the possibility does exist. One of our problems is that we have never considered leaf and stripe rust resistance in our breeding programs because they have never been a problem before. Based on 1 year's experience, we will probably not move to change and put more emphasis on them.

As in barley stripe rust when we had problems with that in the early 1900s, there were 4 elements that developed to generate the stripe rust problem in Colorado. These were for the most part really outside of Colorado and were:

- unusually cool, wet weather in Texas helped develop stripe rust early on,
- strong southerly winds transported a heavy spore shower to Kansas in mid-April,
- unusually cool wet weather in Kansas in May allowed the rust to develop to the levels that then served as the inoculum for eastern Colorado, and
- unusually cool, wet weather developed in late May and early June on the High Plains that allowed the fungus to develop once it arrived.

It seems unlikely that we will get all this together again next year. Our best approach is still to follow the development of disease development in Kansas and base our action on what develops there.

Which varieties are susceptible? There is not a lot of information available yet. Earlier I received a list of the reactions of some of the varieties that Kansas researchers had made. I am including them below. We hope to be able to pull together similar evaluations from the Colorado variety trials in the next couple of weeks.

ENT:	BRAND:	NAME:	STRIPE RUST
1	AgriPro	Thunderbolt	MS
2	AGSEC	TAM 110	S
3	Gereral	(W) GM10001	R
4	Gereral	(W) GM10002	MR
5	Gereral	(W) Golden Spike	MR
6	Goertzen	Enhancer	MR
7	Goertzen	Kalvesta	S
8	Goertzen	Venango	MS
9	Polansky	Dominator	S
10	Kansas	(W) Betty	R
11	Kansas	(W) Heyne	R
12	Okla	(W) Intrada	S
13	Kansas	(W) Lakin	S
14	Nebr	(W) Nuplains	S
15	Kansas	(W) Trego	MS
16	Kansas	2137	S
17	Okla	2174	MS/MR
18	Colo	Akron	
19	Nebr	Alliance	MR
20	Nebr	Arapahoe	S
21	Nebr	Culver	S
22	Kansas	Ike	MR
23	Kansas	Jagger	R
24	Kansas	Karl 92	MR
25	Kansas	KS97-PO630 Exp	MR
26	Nebr	Millenium	
27	Kansas	Newton	MS
28	Nebr	Niobrara	S
29	Colo	Prairie Red	S
30	Nebr	Scout 66	MR
31	Kansas	Stanton	MR
32	Texas	TAM 107	S
33	Texas	TAM 302	S
34	Nebr	Vista	R
35	Nebr	Wesley	R
36	Nebr	Windstar	S

Should we not use susceptible varieties next year? Even though is unlikely we will see this kind of situation again it is always a good idea to use a mix of varieties in your fields. There is always the potential for different problems to develop. The major problem in most years is more likely to be Russian wheat aphid. This year we saw susceptibility to stripe rust but is unlikely at this point to over compensate to the stripe rust and risk getting hit hard with another kind of problem.

I am in full agreement with Bob Bowden when he says we need to maintain variety on the plains and keep as much genetic diversity in our wheat as is possible. (Brown)

SEPA TO IMPACT PEST MANAGEMENT IN SCHOOL FACILITIES

The School Environment Protection Act (SEPA) (Senate amendment No. 805) is being reviewed by a Senate/House Joint Conference Committee in the next few days. This bill could significantly impact the way pest management on school grounds and facilities operate. Following is a summary of the bill provided to me.

SEPA Contents

The School Environment Protection Act of 2001 provides basic levels of protection for children and school staff from the use of pesticides in public school buildings and on school grounds. As it stands now, SEPA

- requires local educational agencies to implement a school pest management policy considering sanitation, structural repair, mechanical, biological, cultural and pesticide strategies that minimize health and environmental risks as developed by the state and EPA approved;
- requires universal notification 3 times per year of school pesticide use;
- provides parents and school staff access to health and toxicity information on all pesticides used in schools;
- establishes a registry for parents and school staff to sign-up to receive 24 hour pre-notification of a pesticide application;
- provides information on the pesticide's adverse health effects on the notice provided via the registry;
- requires signs to be posted 24 hours prior to the pesticide application and remain posted for 24 hours;
- exempts antimicrobials, baits, gels, and pastes from the notice via registry and posting requirement;
- requires the area where a pesticide application is to take place be unoccupied;
- requires record keeping of pesticide use and disclosure.
- establishes 24 hour reentry period for pesticide applications made via baseboard spraying, broadcast spraying, tenting or fogging, unless the label specifies a specific reentry interval; and
- does not preempt state or local school from adopting a policy that exceeds provisions of the act.

(Brown)

ENVIRONMENTAL ORGANIZATIONS PUSH FOR REMOVAL OF WOOD PRESERVATIVES

Beyond Pesticides (Jay Feldman et al) has lobbied EPA Administrator Christy Whitman to Immediately Suspend Registration of Wood Preservatives. They cite findings in Florida associated with the use of wood preservatives in playground equipment, leading to park closures. The principal targets are the wood preservatives, chromated copper arsenate (CCA), pentachlorophenol (penta), and creosote. In addition, the group has sent a letter to the Governors of each state, asking them to initiate the phase-out of treated wood products on state lands.

"The fact is that there are currently available alternatives for most applications of chemically treated wood, making CCA, penta and creosote obsolete", says Greg Kidd, Science and Legal Policy Director with Beyond Pesticides. The alternative technologies include recycled steel, composite plastics and concrete for utility poles, construction lumber and railroad ties. "All of the alternatives are economically viable, last longer than treated wood, do not require costly retreatment and do not leach toxic wood preservatives into the environment," points out Mr. Kidd.

In their news release Feldman and Kidd state that “penta, CCA and creosote have been tied to a large number of health problems including cancer, birth defects, kidney and liver damage and death. Penta, classified as a probable carcinogen in its own right, is contaminated with dioxins and furans. Both arsenic and chromium (VI) are known carcinogens. Creosote is actually a toxic soup containing dioxins and various polycyclic hydrocarbons. All of the wood preservatives have been shown to leach out of treated wood”.

Beyond Pesticides have two reports available that address the risks of exposure to wood preservatives. The first report, Poison Poles, examines the toxic trail of the wood preservatives from cradle to grave. The second report, Pole Pollution, focuses on information gleaned from EPA's science chapter on penta, as well as the results of their own survey of utility companies.

Feldman and Kidd note that “EPA calculated that children exposed to soil contaminated with penta leaching out of utility poles face a risk of cancer that is 220 times higher than the agency's acceptable level. Workers who paint penta on to poles in the field face a 100% risk of cancer. Our (i.e., Beyond Pesticides) survey of utility companies reveals that they dispose of poles by either giving them away to the public or throwing them into unlined dumps. Both practices guarantee the exposure of people to harmful chemicals”.

As an additional source of information Robert Cox (Cooperative Extension) has responded to queries regarding inquires about CCA treated wood and raised bed Gardens by providing some web sites to research on the issue. These are:

>http://www.caes.state.ct.us/PlantScienceDay/1999PSD/arsenic99.htm
>http://www.fpl.fs.fed.us/documnts/FPLRP/fplrp582.pdf
(Brown)

CONTRIBUTORS

K. George Beck, Extension Weed Specialist, Perennial and Range (970) 491-7568; gbeck@lamar.colostate.edu
William M. Brown, Extension Plant Pathologist, IPM and General (970) 491-6470; wbrown@lamar.colostate.edu
Whitney S. Cranshaw, Extension Entomologist, Urban and Horticulture (970) 491-6781; wcransha@ceres.agsci.colostate.edu
Sandra McDonald, Extension Specialist, Environmental and Pesticide Education (970) 491-6027; smcdonal@lamar.colostate.edu
Scott J. Nissen, Extension Weed Specialist, Row Crops (970) 491-3489; snissen@lamar.colostate.edu
Frank B. Peairs, Extension Entomologist, Field Crops (970) 491-5945; fbpeairs@lamar.colostate.edu

Howard F. Schwartz, Extension Plant Pathologist, Row and Vegetable Crops (970) 491-6987; hfspp@lamar.colostate.edu
Philip H. Westra, Extension Weed Specialist, Row Crops (970) 491-5219; pwestra@ceres.agsci.colostate.edu

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