

Pest Alert

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**The Pest Alert is now found on the World Wide Web at
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WHEAT UPDATE

Samples of wheat are picking up. So far, with the exception of the one soil borne mosaic sample from Stratton, only wheat streak mosaic (WSMV) has been detected. While we have been expecting to see a lot of barley yellow dwarf (BYDV) because of the high aphid populations last fall, we have yet to detect it. Part of the reason for this may be because of the cool spring we are having to date. BYDV symptoms show best as the temperatures begin to rise.

Presently the major problem appears to be moisture. Sounds familiar. This is just where we were last year when we did our annual tri-state wheat survey with pathologists from Nebraska and Wyoming. If this kind of weather continues we will see

dry land root rot begin to develop. This disease caused by 2 stress driven fungi, *Fusarium* and *Bipolaris* (formerly *Helminthosporium*) spp. is fairly nonspecific, occurring at different times as root and foot rots, leaf spots and seedling blights. The disease is stress dependent and in the dryland root rot form, symptoms show as a decay and brown discoloration of the stem, crown, sub-crown internode and roots. Diseased plants will occur randomly or in patches in the field. The causal fungi are cosmopolitan, occurring in all soils but only expressing themselves under drought conditions. Over the years many seed treatment studies have been conducted (we have some out now) and while emergence counts have shown significant differences, the final yields reflected that no one material was better than the others. The major management approaches have been breeding for resistance and stress management cultural practices such as minimum till. It is interesting to note in this respect, that we have sampled the long-term minimum tillage studies of Dr. Petersen and Dr. Westfall (Dept. of Soil and Crop Sciences, CSU) for over 5 years. While we can consistently recover the *Fusarium* fungus from roots and crowns, we have yet to recover the *Bipolaris* fungus or observe symptoms of dryland root rot.

Leaf rust is developing in the states to the south east of Colorado at a rapid rate. During the 3rd week of April it was severe in susceptible varieties in Texas east to the Florida panhandle but still light in north Texas fields (see map). The mild winter and rainfall in late March and early April contributed to rust development.

Also, according to the national rust lab in Minnesota, leaf rust was light in Oklahoma and south central Kansas. In central Oklahoma 10-30% severities were observed in some places on the lower leaves. Only light levels of leaf rust appear to have overwintered in Kansas. It is noted that this is about the same situation there as in 1998 and 1999.

Fig. 1. Leaf rust severities in wheat fields on April 25, 2000



In California and the Pacific Northwest both leaf rust and stripe rust of both wheat and barley are reaching very high levels on susceptible varieties. At this point leaf rust does not appear to be significant enough in southern Nebraska and Kansas to cause Colorado concern. Even in years when we had fairly high levels of leaf rust in eastern Colorado there has not been enough to make fungicide applications economical. This would be especially true in a year like this when wheat prices are less than exciting. But there is still a need to keep an eye on the fields and the prices. The weather can still change the market situation dramatically and the current drought to the east of Colorado could have wide implications. (Brown)

WATCH FOR SPOTTED WILT VIRUS IN GREENHOUSES

Spotted wilt virus disease of ornamentals and vegetables can be found occurring in some Colorado greenhouses. Nationally this virus has been a major production problem over the last few years in some areas. There are 2 strains of the virus that are named after the first plant they were found on but both have wide host ranges. Tomato spotted wilt (TSWV) and impatiens necrotic spot (INSV also called TSWV, 1 strain in the past) go to a wide range of greenhouse plants including astroemeria, begonia, chrysanthemum, cyclamen, geranium, gloxinia and impatiens. The two viruses do not go to roses. Many vegetables such as lettuce, tomato and pepper are also affected. Homeowners should be cautious about buying their transplants and obtain them from reliable traditional outlets that stand behind the plant materials they sell. In the past we have seen even entire commercial fields of peppers and tomatoes wiped out from spotted wilt brought in in infected transplant sets.

The viruses are carried by species of Thrips. The most common is the western flower Thrips (*Frankliniella occidentalis*). Infection is most common by the Thrips but the virus can easily be transmitted in cuttings during propagation of vegetatively reproduced ornamentals.

Symptoms vary depending on host, environmental conditions and which of the viruses is attacking the plant. There can be necrotic spots, streaking, ring spots, stem purpling and wilting. Diagnosis based on symptoms alone is difficult and a laboratory serological test is the most dependable.

Sanitation in the greenhouse and elimination of the vector are the only means of controlling the viruses. See Cooperative Extension fact sheet no. 2.947, **Geenhouse Plant Viruses** by Laura Pottorff and Steve Newman for more detail. To get plants tested contact the Jefferson County Cooperative Extension Plant Clinic (303) 271-6620. (Brown)

URBAN SOIL CONFERENCE IN JUNE

A national conference, The Ecology of Urban Soils: Designing and Managing Soils for the Living Landscape, will be held June 11-13, 2000, in St. Paul, MN. This conference is for anyone working with the planning, design, construction and/or maintenance of urban infrastructure and outdoor areas, including engineers, architects, designers, contractors, developers, builders, city planners, arborists, foresters, consultants, scientists, and educators. CEU's are available. Conference information (including speaker abstracts) can be found on the APSnet at www.scisoc.org/opae/shortcourse or contact Cindy Ash at APS headquarters for a registration brochure and further information. Cindy's e-mail address is, cash@scisoc.org, her phone is 651-454-7250. (Brown)

INSECTS AND MILD WINTERS

Coming out of an unusually mild and dry winter, many people are expecting to have more insect pest outbreaks than normal. As usual, however, "it depends on the species". I find it useful to divide our insects into three rough overwintering categories:

1. **Insects well adapted to our conditions and generally unaffected by winter.** The best example of this group is the grasshoppers. Most grasshopper species overwinter as very cold tolerant eggs in the soil. Winter conditions have little to do with grasshopper abundance in the following growing season.
2. **Insects well adapted to our conditions and whose survival is influenced by winter severity.** This group contains many of our common field crop insects, including alfalfa weevil, army cutworm, greenbug, and Russian wheat aphid. We can expect significant activity this year from this group.

I look at winter severity as a combination of temperature and moisture. For example, army cutworm and Russian wheat aphid would do very well during a mild, dry winter and poorly during a mild, wet winter.

- Insects that do not overwinter here and migrate from the south for each growing season.** Good examples of these include corn earworm and southwestern corn borer. Since a mild winter would allow these species to overwinter closer to Colorado, I would expect them to appear earlier, have more time to reach damaging population densities, and move further north than normal.

To complicate matters, keep in mind that these are not just pest categories. For example, the C-7 lady beetle belongs to group 2. It has already completed one spring generation in Fort Collins and second generation adults are seeking out infestations of aphids that did well over this mild winter.

It takes more than good winter survival to reach pest status. Natural enemies and adverse spring weather can be major obstacles. The bottom line is, however, that it is a good year to keep your eyes open for lots of insect activity. (Peairs)

ALFALFA WEEVIL

It looks as if the mild winter has brought us some significant alfalfa weevil activity. Alfalfa weevil damage starts as small holes in new leaflets and progresses to heavy skeletonizing of the terminals. Heavily infested fields take on a grayish or frosted appearance and may have a 30-40% yield loss. Losses vary with the intensity of the infestation, growth stage and condition of the crop. Detailed loss studies from Oklahoma State University indicate that an infestation of two larvae per stem can result in a total first and second cutting loss of 1/3 ton per acre.

Alfalfa weevil larvae are green or yellow in color, with a black head and a white stripe down the back. These should not be confused with the cloverleaf weevil, which is similar in appearance but has much less damage potential. Alfalfa weevil larvae are smaller when full grown (1/3 inch vs. 1/2 inch) and have a distinct white stripe along the back, while the clover leaf weevil stripe is yellowish-white and edged in red.

Alfalfa weevil management currently relies on either early harvest or on insecticide treatments based on one of several action thresholds. If the crop has reached the bud stage consider cutting early. Large infestations may not be controlled completely unless the crop is green-chopped. Survivors may delay regrowth significantly. If the crop is cut early and fails to "green up" normally, it is likely that it is being held back by weevil feeding. An insecticide treatment should be considered at this point since delayed regrowth can result in further yield loss and promote weed establishment.

If early cutting is not feasible then treatment should be considered if there are more than 1/3 damaged terminals; or if sweep net counts exceed 20 larvae per 180E sweep; or if larvae average more than 2-3 per stem in a 30-50 stem sample. Details on stem sampling, determining the need to treat based on expected losses per larva per stem, and registered products are found in "High Plains Integrated Pest Management Guide for Colorado-Montana-Nebraska-Wyoming" (Available from CERC, 115 General Services Building, Colorado State University, Fort Collins, CO 80523-4061 970-491-6198, Fax -2961). The alfalfa section of the guide is also found at http://scarab.msu.montana.edu/hpipm/alfalfa_toc.htm.

A number of effective insecticide products are available for alfalfa weevil control. We have tested some of these for several years as summarized in the following table.

Performance of insecticides against alfalfa weevil larvae in small-plot, replicated trials in northern Colorado, 1984-99.

PRODUCT	RATE	% CONTROL AT 2 WK*
BAYTHROID 2E	0.025	97 (6)
FURADAN 4F	0.25	86 (10)
FURADAN 4F	0.50	92 (18)
LORSBAN 4E	0.75	94 (13)
LORSBAN 4E	1.00	96 (6)
LORSBAN 4E	0.50	83 (10)
PENNCAP M	0.75	86 (10)
PERMETHRIN **	0.10	67 (7)
PERMETHRIN **	0.20	80 (4)
WARRIOR 1E	0.02	98 (10)

* Number in () indicates number of years included in average. ** Includes both Ambush 2E and Pounce 3.2E.

(Peairs)

RUSSIAN WHEAT APHID

Russian wheat aphid has the potential for a very serious infestation this year, if weather conditions remain conducive. Unless you planted a resistant variety (Halt, Prairie Red, Prowers 99, Yumar), the only management option at this point for Russian wheat aphid is an insecticide application based on scouting and established action thresholds.

To determine the infestation level, walk a diagonal or zigzag pattern across the field, stop 10 times and collect 10 tillers **at random** at each stop. (A more efficient sampling procedure is described in *Sampling Russian Wheat Aphid in the Western Great Plains*,

Great Plains Agricultural Council Publication 138.) Examine the tillers and count the number that contains RWA. This number is the percent infested tillers and can be compared to the economic threshold calculated with the following formula:

$$ET = \frac{CC \times 200}{EY \times MV}$$

where:

ET = Economic threshold or the percent infested tillers above which an insecticide application will be cost effective.

CC = Control cost per acre (insecticide plus application)

EY = Expected yield per acre

MV = Market value per bushel

After flowering substitute 500 for 200 in the numerator of the formula. If the calculated ET is lower than the percent infested tillers observed, a treatment should be cost effective. There probably is no benefit from insecticide applications made after the crop has reached the soft dough stage.

Performance of registered insecticide treatments is summarized in the following table.

Control of Russian wheat aphid with hand-applied insecticides in winter wheat, 1986-1999*.

PRODUCT	LB (AI)/ACRE	TESTS WITH > 90% CONTROL	TOTAL TESTS	% TESTS WITH > % CONTROL
LORSBAN 4E	0.50	20	36	56
DI-SYSTON 8E	0.75	13	38	34
DIMETHOATE 4E	0.375	6	30	20
DI-SYSTON 8E	0.50	2	10	20
PENNCAP M	0.75	3	18	17
LORSBAN 4E	0.25	4	17	24
THIODAN 3E	0.50	1	4	25
WARRIOR 1E	0.03	1	10	10

*Includes data from several states.

Insecticides can be selected just on the basis of Russian wheat aphid efficacy and cost. In some cases, however, choice might be influenced by the presence of another pest. For example, Warrior would be a good candidate if you needed to control pale western cutworm and Russian wheat aphid.

It is important to buffer spray solutions to a neutral pH, since several of these products have short half-lives under alkaline conditions. Also, insecticide performance generally improves above 50F.

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

There is still some opportunity to include an insecticide with herbicide applications. Our general experience has been that this should be avoided in stressed wheat. Also, since the crop will recover most of its yield potential if aphids are treated before boot stage, it may be better to hold off on an insecticide decision until it is clear that weather conditions are not going to keep the aphid below economic levels.

More details on Russian wheat aphid and other small grain pests can be found in "High Plains Integrated Pest Management Guide for Colorado-Montana-Nebraska-Wyoming" (Available from CERC, 115 General Services Building, Colorado State University, Fort Collins, CO 80523-4061 970-491-6198, Fax -2961). The small grains section of the guide is also found at

http://scarab.msu.montana.edu/hpipm/smallgrains_toc.htm.
(Peairs)

WEED MANAGEMENT IN SEEDLING ALFALFA

Several herbicides are registered to control weeds in seedling alfalfa. Balan (benefin) and Eptam/Genep are effective against warm season grasses and some annual broadleaves such as pigweed and lambsquarters. These herbicides should be applied preemergence to weeds and must be incorporated immediately after application to prevent herbicide loss from volatility. Be sure to know field soil texture because application rate for these two herbicides is influenced by the clay and organic matter content in soil.

Postemergence herbicides registered for use in seedling alfalfa include Pursuit (imazethapyr), Buctril (bromoxynil) and 2,4-DB. These may be applied alone or as a tank-mix. Buctril and 2,4-DB will control many annual broadleaf weeds if applied when weeds are small. Neither is effective against grasses. Pursuit will control many broadleaf weeds and some grasses (e.g. foxtails, barnyardgrass, crabgrass, and suppression of quackgrass) if applied when weeds are small. Use of a methylated seed oil at 1.5-2 pt/A (e.g. Sun-It II) and liquid fertilizer at 1-2 qt/A (e.g. 28% N, 32% N, or 10-34-0) will dramatically improve weed control from Pursuit. When applying Buctril alone or in combination with 2,4-DB, be certain that alfalfa is in at least the 2 to 3 trifoliate leaf stage (5 to 6 trifoliate leaves is better) to avoid injury to alfalfa.

Be certain to read herbicide labels *before* using them to avoid problems related to soil texture, alfalfa growth stage, weed size and growth stage, air temperature, and incorporation. Also, remember that herbicides are only part of good weed management and do not forget cultural aspects to make alfalfa as competitive as possible. (Beck)

DANDELIONS IN ESTABLISHED ALFALFA

Dandelion populations are very high this year in many situations including established alfalfa. Typically, if a dandelion problem is significant in an established alfalfa field, it may need to be rotated to a new crop. Often dandelion population increases are indicative of alfalfa stand decline. However, this year, dandelions seem to be fairing rather well even in good stands of alfalfa.

Pursuit plus 2,4-DB will control dandelion reasonably well. Consult the label for rates and be sure to watch the temperature restrictions for 2,4-DB. It may be too late to control dandelion for the first cutting, but if this weed is a problem in your field, consider spraying Pursuit plus 2,4-DB immediately after the first cutting. (Beck)

COLORADO REGISTRATION UPDATE

Addition pesticide registration have been issued by the Colorado Department of Agriculture since Mach 31, 2000 (See Pest Alert Vol. 17 No. 3)

Two additional, 24(c) Special Local Needs (SLN) has been issued. An applicator must have the 24(c) Supplemental Label in their possession to apply SLN products.

CO-000003 - ACEPHATE PRO 75 as a soil injection for control of aphids and spider mites on ornamental trees.

CO-000004 - ACEPHATE PRO 75 WPS as a soil injection for control of aphids and spider mites on ornamental trees.

Two additional Section 18 Emergency Exemptions have been approved for Colorado. Section 18 of FIFRA authorizes EPA to allow States to use a pesticide for a limited time if EPA determines that emergency condition exist. The uses are requested for a limited period of time (no longer than 1 year), to address the emergency situation only. Section 18 Labels are restricted use pesticides for retail sale to and use only by certified applicators or person under the direct supervision covered by the Certified Applicators Certification. The label must be in the possession of the user at the time of the pesticide application. A permit is required from the Colorado Department of Agriculture in order to use a section 18 product. There is no change for the permit.

Warrior T (lamda-cyhalothrin) for Russian wheat aphid control in barley (expires 7/15/00)

Raptor (imazamox) for nightshade and velvetleaf control in dry beans (expires 7/15/00) (McDonald)

EPA NOTICE OF USE DELETIONS FOR AZINPHOS-METHYL

On April 19, 2000, EPA announced use deletions and registration cancellations for products containing azinphos-methyl. The use deletions and cancellations are consistent with the agreement between EPA and the registrants of azinphos-methyl announced August 2, 1999 under the Food Quality Protection Act (FQPA). EPA is implementing the agreement to reduce risks associated with azinphos-methyl to humans and the environment. Affected uses are cotton in Louisiana and east of the Mississippi River, sugarcane, ornamentals (except nursery stock), Christmas trees, shade trees, and forest trees. As of April 19, 2000, sale, distribution, or use of azinphos-methyl products affected by this cancellation order is only permitted in accordance with the terms of the existing stocks provisions of the cancellation order. Existing stocks of azinphos-methyl already in the possession of growers may be used until depleted, provided the use is in accordance with the container label or the risk reduction agreement. The Federal Register notice providing details of this cancellation is available on EPA's web site at <http://www.epa.gov/fedrgstr>. EPA plans to issue a final rule regarding changes to tolerances for azinphos-methyl in April 2000. For more information, contact Barry O'Keefe, Special Review and Reregistration Division, at 703-308-8035 or via email at okeefe.barry@epa.gov.
(McDonald)

EPA ENCOURAGES "MAKE EVERY DAY EARTH DAY" AROUND HOME

The U.S. Environmental Protection Agency (EPA) is encouraging citizens to "Make Every Day Earth Day" by reducing toxins, protecting children's health and using energy more efficiently in the home.

EPA advocates decreasing the environmental risks children face every day because children are more vulnerable to pollution or contaminants, pound for pound, than adults. Indoor air pollution can be reduced by using such materials as environmentally friendly paints, varnishes, curtains, and floor and wall treatments. Energy saving approaches help reduce pollution and save money every day. EPA encourages consumers to consider purchasing refrigerators, light bulbs, electric fixtures, computers, and televisions with the ENERGY STAR label, the latest generation of energy-saving products. There are other environmentally beneficial options for the home such as recycled-content materials and renewable energy resources, such as solar and wind power to supplement electricity supply.

Gardeners are asked to try to minimize use of synthetic pesticides and fertilizers to reduce pesticide exposure that could be harmful to children and pets. Doing so could also help reduce contaminated water runoff into storm drains.

More information is available at: www.epa.gov/earthday.
(McDonald)

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FIRST AID INSTRUCTIONS REVISED FOR PESTICIDE PRODUCT LABELS

On April 11, EPA proposed to revise the format and content of first aid advice on all pesticide product labels to make them easier to read. While companies can start to use this revision immediately, EPA will accept public comments for 30 days. The revision incorporates recommendations by the medical community and the Consumer Labeling Initiative. Changes to labels will include: section headings labeled *First Aid* instead of *Statement of Practical Treatment*; new format designs; as well as first aid advice for each pathway of exposure through the mouth, skin, inhalation, and eye. The goal is to revise all product labels by October 1, 2001. For more information, please contact Amy Breedlove in the Office of Pesticide Programs at (703) 308-9069, or by e-mail at: breedlove.amy@epa.gov. The notice is available at: www.epa.gov/PR_Notices/
(McDonald)

NEW HOUSEHOLD CHEMICAL AGENCY WEB SITE FOR CHILDREN

EPA has created a new interactive web site, "Learn About Chemicals Around Your House", to teach children about ordinary household pesticide products that may contain harmful chemicals. The web site includes information about toxic substances stored in different rooms of the house, and answers commonly asked questions on safe use and storage of these pesticides and other toxic products. The site also contains educational games, and tells children what to do if accidents occur. The site is available at: <http://www.epa.gov/opptintr/kids/hometour/index.htm>.
(McDonald)

1998-1999 REPORT ON STREAM-LINING REGISTRATION OF ANTIMICROBIAL PESTICIDES

EPA has just released its most recent report on *Streamlining Registration of Antimicrobial Pesticides*. This report, mandated by the Food Quality Protection Act (FQPA), contains information on outreach activities, the reduced backlog of registration applications and accomplishments in the area of antimicrobials during the fiscal years 1999 and 2000.

EPA's Antimicrobials Division (AD) has significantly reduced its backlog of pending actions from a high of 388 in 1996 to 24 as of September 30, 1999. In September 1998, EPA proposed new procedures for the registration of antimicrobial pesticides.

The report, describing these and other actions, is available on EPA's website at:

<http://www.epa.gov/oppfead1/Publications/98-99adrpt.pdf>.

(McDonald)

POLICY PAPER ON ROLE OF USE-RELATED INFORMATION PUBLISHED

On July 14, 1999, EPA published a Federal Register notice announcing the availability of a draft document for public comment-The Role of Use-Related Information in Pesticide Risk Assessment and Risk Management. This paper is being released for a 60-day public comment period, as part of a process developed in conjunction with the Tolerance Reassessment Advisory Committee (TRAC) to ensure that EPA's policies related to implementing the Food Quality Protection Act (FQPA) are transparent and open to public participation. The paper announced in this notice summarizes the types of use-related information used by EPA in risk assessment and risk management, where the data come from, and how the Agency employs these data.

The Federal Register notice includes questions on which EPA is particularly seeking comment. The paper is available through the OPP Docket and on the Internet at: www.epa.gov/pesticides/trac/science/.

Comments can be submitted in person, by mail, or electronically as described in the Federal Register notices. The Federal Register notice is available electronically at www.epa.gov/fedrgstr. (McDonald)

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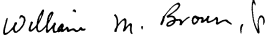
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Sincerely,


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