



KENTUCKY PEST NEWS

ENTOMOLOGY • PLANT PATHOLOGY • AGRONOMY

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Number 873

March 6, 2000

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ANNOUNCEMENT

The IPM Training School is scheduled for Wednesday, March 15, at the UK Research Center in Princeton. Program starts at 9 AM. Advance registration is not needed and the meeting is free. The program has been accredited for 5.5 CEU's for Certified Crop Advisors.

ALFALFA

EARLY WEEVIL DEGREE DAY ACCUMULATIONS By Lee Townsend

Degree day accumulations (base 48° F) are important in anticipating alfalfa weevil development. The accumulation of 190 degree days (beginning Jan 1) is the time when we can look for the first signs of feeding activity in alfalfa tips. By this point, some of the fall-laid eggs are beginning to hatch. We have reached this level in much of the southern portion of the Commonwealth. Selected degree day accumulations as of March 5 - Bardstown 186, Bowling Green 199, Covington 104, Glasgow 235, Lexington 138, Princeton 260, Somerset 185.

Keeping track of degree days over the next few weeks will be important in preventing surprises from alfalfa weevils. It is a mistake to treat too early- especially at the first sign of feeding in a field. Most of our potential feeding damage comes from spring- laid eggs that will hatch considerably later than those laid in the fall.

Follow the degree day charts and use the 30 stem sampling technique for accurate decision-making information.

The first chewing damage seen on alfalfa tips is often caused by clover leaf weevils. They spend the winter as partially grown larvae and are active very early in the season. These small, legless grubs have a distinct white stripe, lined with red, running down the middle of their back. Often, they are responsible for the first tip feeding of the spring.

TOBACCO

CONSIDERATION FOR DISEASE CONTROL IN TOBACCO TRANSPLANT PRODUCTION SYSTEMS - 2000 CROP by William Nesmith

An adequate supply of healthy disease-free transplants is an important first step to having a successful tobacco crop in 2000. Infectious diseases can be a limiting factor to successful transplant production. Inadequate transplant supplies can result from epidemics of blue mold, Pythium, Rhizoctonia, and bacterial blackleg. Furthermore, diseased transplants are prone to additional attacks in the field and they can serve as important sources of pathogen introduction to the field and community. During the 1990's, field epidemics of blue mold, black shank, Pythium blight, Rhizoctonia root rot/soreshin, and tomato spotted wilt were directly related to setting diseased transplants.

Tobacco transplant production in Kentucky occurs mainly in float systems (either in greenhouses or outside float beds) and in traditional ground beds. The potential for infectious diseases is especially high in the float systems, as currently operated, because of contamination from sloppy sanitation and predisposition of the seedlings from water-saturated root systems, excessive watering, poor ventilation/circulation, fertilization mistakes, crowded plantings, and frequent wounding of plants. Unfortunately, there are not legal options to eliminate diseases in transplants after infections have occurred.

Carefully growing your own transplants is the best assurance against bringing someone else's disease problem onto your farm. However, the tobacco industry is relying more and more on commercially produced transplants. In general, commercial producers often provide a better transplant, because the commercial firms are paying more attention to the details associated with disease control than are most tobacco farmers. The tobacco community needs to recognize the increased risk associated with introducing pathogens from outside the community and the increased potential for sharing of diseases from farm to farm resulting from the promiscuous nature of current seedling production.

Control of transplant diseases is achieved through aggressive sanitation measures, careful management of the production environment, controlling insect vectors, avoiding plant stress, and timely application of pesticides. Both the incidence and severity of diseases in seedling production can be greatly reduced through chemicals involved with fumigation, sanitation and preventive spray programs. Unfortunately, adequate labeled materials are not available for use in the greenhouse and float systems. Furthermore, many pesticide manufacturers have elected not to label their products for use in tobacco transplant production because of the product liability risks associated with fungicide resistance under such high disease potential.

In June 1998, the EPA re-stated its position concerning pesticide use in the greenhouse. That position is that labels must specifically cite the greenhouse and greenhouse-crop-stage as a site, if the product is to be used in greenhouse production systems. Also, EPA's Regional Office in Atlanta, GA., continues to advise that if the product is to be used in float-beds (within greenhouses or outside), then specific instruction must also be included on the label to either avoid contamination of the float water or guidelines on proper disposal of treated water. In other words, the float-bed is a different site than the traditional ground beds, because of this special requirement of water protection/disposal.

Therefore, the only fungicides labeled for use in all tobacco transplant production systems in Kentucky are Ferbam and Dithane DF, which are covered by special state labels (24-c), because these labels cover all transplant production sites in use. The national labels on Ridomil Gold and Ultra Flourish specifically

prohibit treatment of transplant production sites. Streptomycin, an antibiotic, is labeled only for tobacco beds (traditional ground beds), but is not labeled for greenhouse-use nor does the label cover float-beds.

Based on our interpretation of the labels and EPA rulings, the following control options are available for disease control in Kentucky tobacco transplant production as of March 1, 2000.

Greenhouse and Float-Bed Transplant Production Systems:

Follow the agronomic recommendations for general sanitation, media and tray filling, temperature management and ventilation, fertilization, water quality and clipping.

It is most important to prevent and minimize the introduction and build up of pathogens in these wet systems through the following steps:

* **Sanitize Trays** - The two most available methods in Kentucky are washing/bleaching/fumigation and gas-fumigation with methyl bromide. With the bleaching method, trays should be thoroughly washed, dipped in a fresh 10 percent chlorine bleach solution, and *immediately* enclosed in a fumigation chamber overnight, then aerated several days until the chlorine odors have disappeared. Before using, however, the excess chlorine and chlorine salts will need to be removed by rinsing the trays with clean water and allowing them to air dry to remove chlorine salts. If gas-fumigation is used, the trays should also be washed then gassed with methyl bromide. Stack trays loosely (cross-wise), enclose with plastic and seal, and release from the top of the stack 3 pounds methyl bromide per 1,000 cubic feet of treated space. **Warning:** This can operation is dangerous and more difficult than for normal plant bed fumigation. The methyl bromide should only be applied out-of-doors and not in a confined space such as a greenhouse. **Read, understand, and follow all instructions and precautions on the methyl bromide label!**

* **Regular Protective Fungicide Sprays** - Seedlings need to be sprayed weekly with a protectant fungicide to control blue mold, anthracnose, Botrytis, and damping-off. Only two products are labeled in Kentucky for this use - Ferbam and Dithane.

FERBAM at 1.5 - 3.0 lbs/100 gallons of water. Spray preventively twice weekly starting when seedlings have the first true leaf or immediately after plugging with the plug-and-transfer system. Apply as a fine spray to the point of run-off, using 3 gallons of spray material per 1000 sq ft when seedlings are small increasing gradually to 6 to 12 gallons as plants increase in size and the canopy increases. The label has a specific restriction to avoid contamination of the float-water. This use is labeled under a 24-C in Kentucky, which expires June 16, 2000.

DITHANE DF at 0.5 lbs/100 gallons of water (one teaspoon/gallon). Spray preventively on a 5-7 day schedule starting when plants are about the size of a dime and continue until transplanting to the field. This

chemical can cause serious injury if applied to smaller seedlings or at high rates. [Note the rate is lower for greenhouse and floats than in the outdoor soil plant beds.] Use 3 gallons of spray material per 1000 sq. ft. while plants are small, but increase gradually to 6 to 12 gallons as plant size and canopy increase. Be sure sufficient water is used to wet the base of the stems with run-off to increase the control potential of damping off. Avoid contamination of the float-water during applications. This use is labeled under a 24-c in Kentucky, which expires June 16, 2000.

Note: Ridomil Gold EC and Ridomil 2E are **NOT** registered for and should not be used in greenhouses or float beds.

In addition, avoid wetting foliage or allowing high humidity in the greenhouse. Make sure the greenhouse is equipped with a proper ventilation system and that the system is operating to keep leaves as dry as possible. A horizontal air flow system is recommended for this purpose. Add heat at night to drop humidity within the greenhouse. Avoid overtop application of water and fertilizer to keep leaf surfaces dry.

In Kentucky tests, Dithane DF has caused damage to seedlings under certain conditions (especially if the float-water becomes contaminated), but it clearly has provided superior control of blue mold in the outdoor float-beds compared to Ferbam. In greenhouse plantings, significant differences have not been observed in the control of blue mold given by Ferbam and Dithane, but Ferbam was superior to Dithane in Botrytis control at the concentrations labeled.

* For control of Tobacco Mosaic Virus in susceptible varieties avoid using home-grown or manufactured tobacco products in the system. Avoid contact with horsetail (bullnettle), ground cherry, and tomatoes while working with transplants. Wash hands often (15-30 minutes) in a 1% phosphate detergent solution, especially before entering and after breaks. Although it is messy, using milk products can be helpful, as whole or skim milk at 5 gals /100 gallons water or dried milk at 5 lbs/100 gallons water per 100 sq. yds. of plants). Spray plants 1 to 24 hrs before handling them. This treatment has also been used successfully prior to clipping of large plants, but it can be very messy unless the system dries well following the application. It should combined with washing the hands at 15 minute intervals either in the clean milk solution or a phosphate detergent.

* Growing other plants in the house with tobacco greatly increases the risk of introducing viruses into tobacco. It is specially important to avoid flowering plants and perennials because of tomato spotted wilt and related viruses transmitted by thrips.

Outdoor Plant Beds:

To reduce disease potential, locate the bed sites in sunny areas and where they have excellent air circulation, avoiding shady areas and old tobacco fields, barns, gardens, and vegetable and insure the bed

site has good drainage within and around beds. Follow recommended agronomic practices for fertilization and irrigation, and practice good weed and insect control within and around the bed sites. Fumigation of the bed site, sanitation of the bed site, and regular fungicide/bactericide sprays are important tools in disease control.

Fumigation - To control soil-borne pathogens the site should be fumigated. Fumigant options include: gases, liquids, and granules.

Gases - include products containing methyl bromide or methyl bromide + chloropicrin. Methyl bromide should be used under a plastic tarp at the rates of 9 to 18 lbs/1000 sq feet of bed (see labels for specific rates on each product). Methyl bromide + Chloropicrin should be applied at 9 - 13 lbs/1000 sq ft depending on the product used. Bed sites should be prepared as if ready to seed then fumigated for best results. Expose the site to fumigant for at least 24 hrs, plus 24-48 hrs of aeration prior to seeding.

Soil temperatures should be above 55 F during the fumigation period and soil moisture should be sufficient to support germination. Fumigant gases are extremely poisonous, so follow safety precautions.

Liquid fumigants - include products containing SMDC (metham sodium) and marketed under such names as Vapam and Sectagon, but other products may also be available in some areas. They should be used at the rate of 1.5 gallons/1000 sq ft of bed, injected into the soil to a depth of at least 4 inches or more, or drenched into the soil with at least 40 gallons of water/1000 sq ft of bed area, then covered immediately with plastic tarp. The tarp should be left in place at least 24-48 hrs, but a long aeration period of 21 days is needed prior to seeding. Light tillage of the soil during the aeration period may be helpful to speed escape of the fumigant. Be sure that tillage equipment is very clean to avoid re-contamination of the soil.

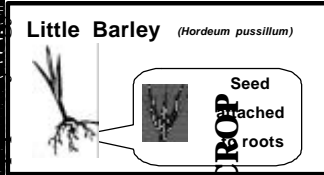
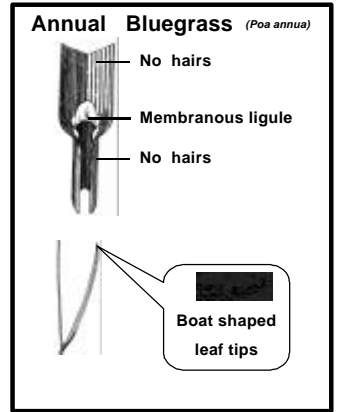
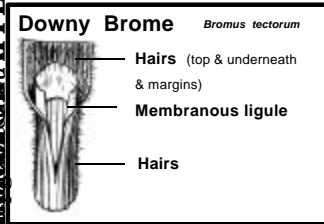
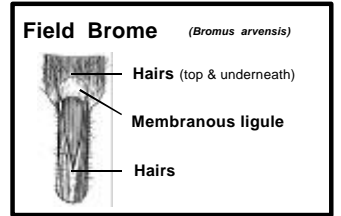
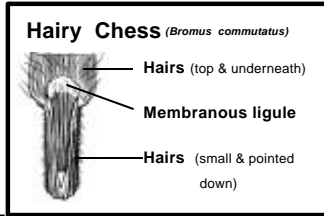
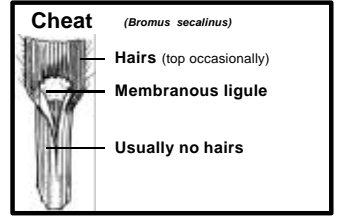
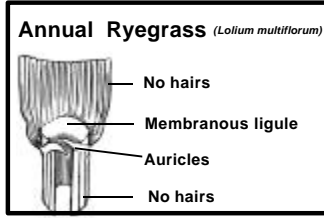
Granule fumigants - are available as dazomet, sold as Basamid, and used at 7.5 lbs/1000 sq ft of bed. The availability of this product is limited in Kentucky currently, but it is an effective fumigant when used correctly. Since it has a very long aeration requirement (14-50 days), its use in the spring in Kentucky is greatly limited. Granules should be spread evenly over the bed site and incorporated to a depth of 8 inches, then the site sealed completely with plastic. Leave the plastic in place at least 5 - 7 days, then aerate the site until it is safe to seed, as determined by use of a germination test.

COPPER DRENCH - Use Bordeaux mixture (bluestone-lime mixture) as a drench to the soil when the plants have emerged and again 10 days later. This treatment will control algae and aid in the control of diseases caused by bacteria (wild fire, angular leaf spot, and blackleg). Follow the label EXACTLY as to mixing instructions, because Bordeaux mixture can be toxic to tobacco seedlings. Do not apply this mixture to large seedlings. The target is actually the soil and not the tobacco plant.

into the...
nearby...
SVD...
tillage

IDENTIFICATION...

WHEAT



FRUIT CROP

FRUIT CROP

Local Responsibility of Weather

Natural Weather

- what is the responsibility of weather? • Commercial weather • Commercial weather • Commercial weather

Three applications of fertilizer are recommended for the lawn. The first application should be made in the fall, the second in the spring, and the third in the summer.

LAWN AND TURF

Application of fertilizer	Application of fertilizer	Application of fertilizer	Application of fertilizer
SPECIAL TOPICS			
Application of fertilizer	Application of fertilizer	Application of fertilizer	Application of fertilizer

REVISED RISK ASSESSMENTS FOR ACEPHATE
AND METHAMIDOPHOS RELEASED; RISK
MANAGEMENT COMMENTS REQUESTED

PESTICIDE NEWS AND VIEWS

<http://everest.ento.vt.edu/~salom/Hndbk558/558.html>

DIAGNOSTIC LAB - HIGHLIGHTS