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INSECT, PLANT DISEASE, & WEED SCIENCE NEWS [No. 90-23] [Sept.14,1990]

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Insect Plant Disease Weed Science NEWS

UNIVERSITY OF NEBRASKA COOPERATIVE EXTENSION • INSTITUTE OF AGRICULTURE AND NATURAL RESOURCES

No. 90-23 Sept. 14, 1990

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We Want to Hear From You

It has been interesting and very helpful to read your responses to the survey printed in the Aug. 31 (No. 90-22) IPW News. You've helped us learn more about what you do, how you use your newsletter, and what would make it more valuable for you. You've made some good suggestions, many of which we can incorporate next season.

I am still a little puzzled, however. Many readers have not returned the survey and I'm not sure why. If it's for lack of a stamp, notice that the return postage is paid. If it's for lack of a typewriter, please don't be formal. Legible handwriting is quite welcome. If you think it's a waste of time, rest assured that each survey is being carefully read, the results will be tabulated and your concerns will be shared among the contributors. This is your chance to tell us what you think so we can better address your interests. Please take a moment now to fill out and return your survey.

Lisa Brown Jasa

INSECT SCIENCE

Furadan Use Expanded For Wheat

The EPA recently granted a 24(C) registration (special local needs) for using Furadan 4F on small grains (wheat, barley, oats) against Russian wheat aphids, greenbugs, bird cherry oat aphids, Hessian flies, and wheat curl mites. This expands a previous 24(C) registration for Furadan 4F for use against grasshoppers. This label will be in effect through the 1990-91 winter and spring small grains season.

Apply Furadan 4F at a rate of 0.25-0.5 fluid ounces per thousand linear feet of row with a minimum row spacing of six inches. Furadan 4F should be applied directly into the seed furrow near the seed by using a microtube or similar application method. It also may be applied in combination with liquid fertilizer. Read and follow all directions, restrictions and precautions on the EPA registered Federal label.

Gary Hein

UNIVERSITY OF NEBRASKA-LINCOLN, COOPERATING WITH THE COUNTIES AND THE U.S. DEPARTMENT OF AGRICULTURE

Cooperative Extension provides information and educational programs to all people without regard to race, color, national origin, sex or handicap.

Observe Preharvest Interval after Insecticide Use

Previous IPW News articles have discussed identification, scouting procedures, and treatment guidelines for Nebraska soybean insects (see Nos 90-11, 90-19, and 90-22). Insect damage is possible in soybeans up to pod maturity. With the relatively late maturing soybeans in some fields, insecticides may be needed in September. Be aware of the preharvest interval (the mandatory waiting period between insecticide application and harvest) for soybean insecticides.

Other restrictions may apply. See the pesticide label or the Extension publication, *1990 Insect Management Guide for Alfalfa, Soybeans, Wheat, Range and Pasture* (EC 90-1511) for more complete information on using these insecticides.

Bob Wright

Product	*Preharvest Interval*
Sevin 80S, XLR Plus, 50W, 4F	0 day
Dipel ES	0 days
Malathion 57EC	0 days
Malathion ULV 9.33	7 days
Lannate 90SP, 1.8L, 2.4LV	14 days
Orthene 75S	14 days
Guthion 2S, 2L	
—up to 2 pt./acre	14 days
—above 2 pt./acre	45 days
parathion 4EC, 8EC	20 days
Penncap-M	20 days
Furadan 4F	21 days
Asana 1.9EC	21 days
Cygon 400	21 days
Scout 0.3EC	21 days
Pydrin 2.4EC	21 days
Lorsban 4E	28 days
Larvin 3.2F	28 days
Ambush 2E, 25W	60 days
Pounce 3.2EC, 25WP	60 days

Treat Fleas Inside and Outside Your Home

Fleas are a problem most summers, and this year is no exception. Adult fleas are small, dark-colored, wingless insects. Eggs are deposited on animals, but soon drop off into the animal's bedding, on carpets, or in the lawn where they hatch into white, worm-like larvae. When development is complete, the larvae pupate, emerge as adults in five to seven days and seek a host for a blood meal.

Reactions to flea bites vary considerably among individuals. Typically, a flea bite results in a small red spot with a light-colored center where the mouthparts entered the skin. There is usually considerable itching and discomfort associated with the bite. Fleas most often bite people on the legs, especially in the ankle region. Successful flea control requires simultaneously treating infested animals inside the home and out in the yard. Insecticides containing carbaryl (Sevin), rotenone or pyrethrins will effectively control fleas on cats and dogs. Use only those products that are specifically formulated for pets. Apply treatments around ears, under collars, between the legs and around the tail. Flea collars also may provide some control but are usually ineffective unless used with premise treatments.

Outdoor areas such as garages, porches, yards and particularly animal resting areas also should be treated to prevent the reinfestation of pets. Products available for outdoor use include carbaryl (Sevin), chlorpyrifos (Dursban), diazinon and malathion. Inside the home, control measures should always begin with a thorough cleaning. A vacuum cleaner can be used to remove flea eggs and larvae from carpets, cracks and crevices, around baseboards and under furniture. It's important to dispose of sweepings promptly to prevent reinfestation. Insecticides also can be used to control fleas inside the home. Remember, however, that the effectiveness of insecticides is directly related to the thoroughness of their application. Plan to treat rugs, carpeting and upholstered furniture and pay particular attention to bedding and resting areas of pets. Crawl spaces also should be thoroughly treated. Insecticides available for flea control inside the home include carbaryl (Sevin), chlorpyrifos (Dursban) diazinon, malathion, methoprene (Precor), propoxur (Baygon) and pyrethrins. Before using any insecticide, read and follow all label directions and precautions. For more information refer to the NebGuide *Fleas and Their Management.* (G84-717).

Fred Baxendale

Plans Being Finalized for Crop Pest Update

The program for the 1990 Crop Pest Management Update (CPMU) is being finalized. Agricultural professionals from across the state will be able to learn the latest crop pest management information and technology.

Session topics will include pest management updates, sustainable agriculture, management of stored grain, regulatory/legislative issues, water quality, and biotechnology. University pest management recommendations for 1991 also will be presented. In addition to UNL specialists, speakers from across Nebraska and the United States will represent a variety of commercial, educational, and government organizations.

The conference, which will be held at the Ramada Inn in Kearney, begins at noon Nov. 27 and closes at 5 p.m. Nov. 28. Registration information will be available in early October. For more information, write CPMU, Department of Entomology, 211 Plant Industry Bldg., UNL, Lincoln, NE 68583-0816 or call (402) 472-2125.

Steve Danielson

For More Information

The following new or revised publications were recently released by the University of Nebraska Department of Agricultural Communications:

EC 90-2500: Federally Registsered Restricted Use Pesticides. This is a list of restricted use pesticides to help applicators recognize products which may be classified for such use.

EC90-2501: Pesticide Safety Telephone Hotlines. This is a plastic pocket card with emergency and non-emergency telephone numbers.

CC 351: Team Building: Organizing a Team. Information on increased communication, greater trust, creative thinking, and greater productivity.

These publications and many more are available free or at a nominal charge at your local Extension office or from the UNL Department of Agricultural Communications. For a Publications Catalog, contact your local Extension office or write Bulletins, 105 Ag Communications Bldg., University of Nebraska, Lincoln, NE 68583-0918.

PLANT DISEASE

Be Alert to Threat of Fall Alfalfa Diseases

Anthracnose is one of the most serious alfalfa diseases in Nebraska. It often interacts with other diseases and environmental factors to produce a cumulative stress that can cause serious yield and stand loss. The disease typically appears in September on stands two or more years old. It already has been seen in Nebraska this fall. From a distance, infected fields show dead, straw-colored stems scattered throughout the stand. The incidence will vary depending on the susceptibility of the variety. Infected stems are curved at the tip similar to a shepherd's crook. Leaves wilt, turn tan, and the entire stem dies. Growers who notice this symptom should examine the stems for anthracnose lesions for positive identification. These are diamond-shaped, ash-gray lesions with a dark brown border. There may be more than one lesion per stem and some may contain small black structures within the lesion. Once a stand becomes diseased there are no rescue treatments since the only control is growing resistant varieties. For more information on this disease, see *Alfalfa Anthracnose* (G89-931), available from your local Extension agent.

Anthracnose, Rust Seen in Nebraska Alfalfa

The other disease that can be troublesome in fall is **rust**. Although not as serious a threat as anthracnose, rust can reduce last cutting yields and hay palatability. It often builds up in fall if forage harvest is delayed or stands are held for seed production. Alfalfa in fence rows and roadside ditches are prime sources of rust spores. Rust is easily recognized by reddish brown pustules on leaves and petioles. These rub off easily and often collect on cutting bars when rusting is severe. Rust spores are are not toxic to livestock but may produce an allergic or hay fever response if heavily rusted hay is fed. Achieve effective control by growing resistant varieties, cutting on a regular schedule and eliminating alfalfa in fence rows.

John E. Watkins

Sooty Molds on Trees, Shrubs is Harmless

The Plant Disease Diagnostic Clinic has received several samples of leaves from trees and shrubs with sooty mold. Sooty mold is a black moldy growth on the surface of leaves and sometimes twigs. It is superficial and can be completely removed by washing or wiping.

Many fungi can cause sooty molds. The problem usually occurs under humid conditions and in the presence of aphids, scales, mealybugs or whiteflies. These insects suck sap from plants. When they are not able to digest all of the sugar in the sap, the excess is excreted as honeydew. This sugary fluid drops onto leaves below and other plants in the immediate area. If conditions are favorable, the sooty mold fungi colonize the honeydew and the black moldy growth develops.

The blackening of the leaves is unsightly, but is generally harmless. Leaf loss only occurs under extremely heavy sooty mold development. This occurs when less light reaches the leaves and they yellow and drop. Usually rain will eventually wash the mold off the leaves. Monitoring and controlling insect problems also will control sooty mold.

Luanne V. Coziahr

Agricultural Engineering

Reduce Insect, Disease Problems

Limit Harvest Moisture with Natural Air Drying

Natural air grain drying is an energy efficient drying method that is particularly well suited to Nebraska weather. A high quality dried product, with little of the stress cracking or heat damage associated with high temperature drying, is an added attraction. Properly dried and well conditioned grain is not as likely to develop mold and insect problems.

The maximum corn moisture content for natural air drying largely depends on the amount of airflow from the drying fan. An airflow rate of 1 cfm per bushel is recommended. At this rate, full perforated drying floors are needed for uniform air distribution. Maximum allowable moisture contents vary by location within the state (see Table I). In general, the harvest moisture content can be increased as you move from the warmer, more humid conditions of southeast Nebraska to the cooler, dryer conditions in the Panhandle. For example, corn harvested in the Scottsbluff area at 24.5% moisture content on Oct. 15 can be successfully dried using natural air drying with an airflow rate of 1 cfm per bushel. In comparison, corn harvested Oct. 1 in the Lincoln area with 20.0 % moisture can be dried with an airflow rate of 1 cfm per bushel. Date of harvest also influenced the maximum allowable moisture content. As temperatures drop in late fall, higher moisture corn can be successfully dried with natural air. Be aware, however, that harvesting higher moisture corn requires running the fan longer and increasing energy use. Drying is usually most successful when corn is harvested in mid October and has a 20% to 22% moisture rate.

Table I. Maximum corn moisture contents for a bin filled in one or two days and dried using natural air with an airflow rate of 1 cfm per bushel.

	Harvest Date			
Location	9/15	10/1	10/15	11/1
Grand Island	20.0	21.5	22.0	24.5
Lincoln	19.5	20.0	20.5	23.0
North Platte	21.0	22.5	23.0	25.5
Scottsbluff	22.5	24.0	24.5	26.0
Sioux City	19.0	20.0	21.5	23.0

Next issue: Drying Times
When Using Natural Air Drying

Don't interrupt fan operation until all the corn in the bin is dry. This may not be practical if drying is not completed before winter. During the cold, winter months, temperatures are low enough that air holds little moisture. The low air temperatures also result in higher relative humidities that further limit drying capacity. Continuous fan operation is not recommended during these months unless the drying zone has not yet been moved completely through the bin.

David Jones
Extension Grain Storage Specialist

Natural Air Drying: How it Works

To take full advantage of the natural air drying process, it's important to understand some of the principles of grain drying.

Grain in a bin does not dry uniformly. Drying occurs in a 1-2 foot zone which moves up through the grain (see Figure 1). The moisture content of corn behind this zone approaches equilibrium with the drying air. The moisture content ahead of it remains relatively unchanged. Thus, the corn nearest the grain surface is most likely to spoil if the drying zone moves too slowly.

The rate of movement of the drying zone depends on 1) drying air conditions, 2) moisture content of the corn, and 3) the fan's airflow rate. Movement of the drying zone is most directly related to airflow. If the airflow rate is doubled, the drying zone moves twice as fast. The fan should be run continuously until the initial drying zone has moved through the grain and all corn is dried to at least 18%.

Weather conditions have less impact on drying zone movement. Drying air conditions do affect the moisture content of the grain below the drying zone. Use Table I to determine the moisture content to which corn will dry for a given air temperature and relative humidity (see Table II for grain sorghum). For example, 50°F air at 70% relative humidity will dry corn to 15.4% moisture. Table I also can be used for rewetting by reducing the moisture content by one percent. This is because it's harder to add moisture back to a kernel than it is to remove it. The same temperature-relative humidity combination, i.e., 50°F and 70% relative humidity, will only rewet corn to approximately 14.4% as opposed to 15.4%. Rewetting normally affects only a small amount of corn at the bottom of the bin. This corn can be rewetted and dried several times.

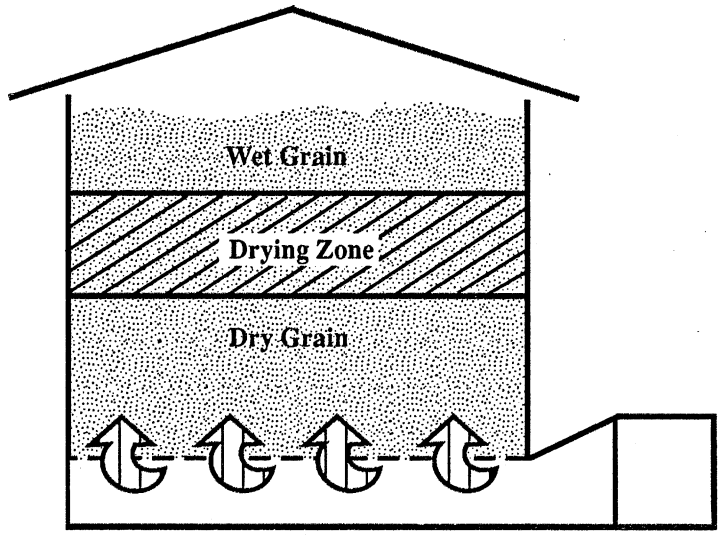

Figure 1. Moisture profile established during the natural air drying process.

Supplemental heat may be added in late fall to help prevent rewetting corn behind the drying zone. This can eliminate the need for moving a second drying zone through the grain in spring. Adding heat can cause the corn behind the drying zone to dry to a lower moisture content. Overdrying occurs if supplemental heat levels are too high for the airflow rate. Higher air temperatures may even create mold problems in the wet corn at the top of the bin. Generally, it's better to speed the drying front movement by increasing the airflow rate rather than adding supplemental heat.

For more information, refer to the NebGuide *Natural Air Corn Drying* (G85-760).

David Jones
Extension Grain Storage Specialist

Table I. Equilibrium moisture content for shelled corn.

	Air Relative Humidity (%)					
	40	50	60	70	80	90
Temp., F	Moisture Content (%)					
30	12.7	13.9	15.2	16.7	18.6	21.1
40	11.9	13.1	14.5	16.0	17.9	20.5
50	11.2	12.5	13.8	15.4	17.3	20.2
60	10.6	11.9	13.3	14.8	16.8	19.7
70	10.0	11.4	12.7	14.3	16.3	19.3

Table II. Equilibrium moisture content for grain sorghum.

	Air Relative Humidity (%)					
	40	50	60	70	80	90
Temp., F	Moisture Content (%)					
30	11.2	12.6	14.2	16.0	18.4	22.2
40	10.8	12.3	13.8	15.6	18.0	21.8
50	10.5	11.9	13.5	15.3	17.7	21.5
60	10.2	11.6	13.1	15.0	17.4	21.2
70	9.9	11.3	12.8	14.7	17.1	20.9

IPW News Contributors

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