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INSECT, PLANT DISEASE, & WEED SCIENCE NEWS [No. 92-23] [Oct. 2, 1992]

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Feed options for frost-damaged sorghum

Cattle feeders have several options in using frost-damaged sorghum (milo). If the grain is allowed to dry, it will have reduced test weight. Market discounts for light test weight grain are usually far greater than the nutritional value would indicate. Typically, low test weight milo has a higher protein content than normal milo, but energy content may be less. Starch, which is the major energy component of grains, may be reduced 4% to 6%. Crude protein levels can vary considerably so feed testing is advised in order to take proper advantage of the extra protein content.

A recent study at Kansas State University indicated that growing cattle fed rations comprised of corn silage, alfalfa hay and milo with test weights of 35, 45 or 55 lb/bu

had similar gains and feed efficiencies. When finishing cattle were fed these same milo grains, gains and feed efficiencies were similar when the milo was fed dry rolled. When the milo was steam-flaked, cattle fed 35 or 45 lb/bu test weights were 6.8% and 6.1% less

efficient, respectively.

Light test weight milo will have smaller berry size, greater variation in seed size and contain more forage residue. All grain kernels need to be processed. The

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Can 2,4-D speed sorghum maturity?

We've heard reports of growers interested in speeding up the maturity of grain sorghum by applying low rates of 2,4-D now. We know of no reason to believe 2,4-D applied now would speed

sorghum maturity. More importantly, 2,4-D is not registered for use on sorghum as a preharvest treatment.

Alex Martin
Extension Weeds Specialist

Corn, soybeans mostly escape threat of frost before maturity

A warm September has proven beneficial to crop maturity and has reduced fears of extensive yield loss due to an early freeze. The Nebraska State Agricultural Statistics Division reports that 89% of the corn crop was in the dent stage by Sept. 20, with 18% of the crop mature. Approximately 50% has reached the late dent stage.

In southeast and south central Nebraska, the soybean harvest has begun. Reports indicate that 68% of the crop was dropping leaves by Sept. 20, with 4% mature. Producers are indicating the crop is rapidly maturing and the majority of soybean acreage should be harvestable by Oct. 1. Yield

reductions are possible if a freeze occurs, but losses won't be on a scale significant enough to affect U.S. grain prices.

Sorghum has become the crop of concern. Four percent of the crop was mature by Sept. 20, with only 68% having turned color. Cool nights have hindered maturity, placing sorghum growth two to three weeks behind normal. To escape significant freeze damage and yield reductions, Nebraska will need freeze-free conditions until Oct. 15 or later over the sorghum growing region. The average freeze date across the

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Preharvest fungi may develop in milo

The physiological maturity of the milo crop continues to lag behind across the state. It is now at a higher risk of damage from a killing frost than other Nebraska field crops. If a killing frost occurred before physiological maturity, what would be some of the consequences to the milo crop? Yields and test weights would be lowered and feed value would possibly be slightly reduced, but

Avoid long term storage of frost damaged corn

Long term storage of frost damaged corn is not appropriate. Corn grain that has been frost damaged is more susceptible to invasion by storage molds (*Penicillia* and *Aspergilli*) than corn not damaged by frost. Several species of the above genera can grow at very low temperature (35°-40°F) and moisture (12-13%) regimes and can produce a condition known as blue eye or blue line in the grain. This occurs when the fungi grow over the germ area under the seed coat. A bluish discoloration develops and becomes one of the grading factors if observed during the grading process. This condition does not appear to affect feed value; but it will affect the marketability of the grain, especially for export. Corn stored less than six to eight months very seldom develops blue eye. In most cases the blue eye that I have seen in Nebraska has occurred during the second or third year of storage; however, I have also seen it in corn that has only been stored for 9-10 months.

Ben Doupnik, Jr.
Extension Plant Pathologist
SCREC, Clay Center

probably of more concern would be the increased potential for fungi to develop on the grain in the heads prior to harvest. This condition is often referred to as "weathering."

Fortunately past experience has shown that most of the fungi that develop post-frost are not mycotoxin (toxins produced by fungi that affect animals) producers and include *Alternaria*, *Helminthosporium*, *Epicoccum*, *Curvularia* and *Phoma* species. Some caution should be exercised, however, before using "grain weathered" milo for livestock feed because in some cases *Fusarium* species might be the primary fungal invaders which can produce several kinds of mycotoxins. Try feeding a small number of animals for two to three weeks and watch for any adverse effects. If there are

none, then the milo probably can be safely used as feed.

Weathered milo also can present special problems to people as well. Especially those with fungal allergies and/or respiratory problems since they will be exposed to high levels of grain fungal dust created during the harvesting and subsequent handling of the grain. As a precaution, everyone should at least wear a dust mask and change the filter in it regularly. High risk people should consider the use of canister-type respirators or possibly even staying away from such exposure completely. Weathered milo should not be used for human consumption.

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Lisa Brown Jasa, Editor

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Average growing degree day (GDD) accumulations for various towns in Nebraska, as of Sept 27.

	Corn		Soybean		Sorghum	
	Emerge	GDD	Emerge	GDD	Emerge	GDD
Scottsbluff	5/15	2139				
Sidney	5/15	2076				
Arthur	5/15	2017				
Ainsworth	5/15	2088	5/29	1918	5/30	1907
O'Neill	5/15	2019	5/29	1858	5/30	1848
Halsey	5/15	2062	5/29	1900	5/30	1890
Concord	5/17	2100	5/30	1963	5/29	1974
West Point	5/17	2224	5/30	2078	5/29	2097
Gibbon	5/11	2331	5/26	2119	5/27	2117
Ord	5/11	2262	5/26	2055	5/27	2052
Shelton	5/11	2337	5/26	2123	5/27	2121
Lexington	5/11	2401	5/26	2191		
Central City	5/14	2277	5/26	2109	5/25	2112
Lincoln	5/14	2620	5/26	2432	5/25	2436
Mead	5/14	2434	5/26	2257	5/25	2259
Rising City	5/14	2269	5/26	2112	5/25	2114
Tarnov	5/14	2249	5/26	2089	5/25	2092
Grant	5/10	2273	5/30	2025	6/4	1970
McCook	5/10	2392	5/30	2135	6/4	2090
North Platte	5/10	2184	5/30	1945	6/4	1903
Holdrege	5/6	2471	5/24	2190	5/28	2173
Red Cloud	5/6	2603	5/24	2326	5/28	2308
Clay Center	5/11	2424	5/22	2240	5/28	2203
Beatrice	5/11	2557	5/22	2369	5/28	2328

Emerge - Average emergence date as reported by Ag-Statistics or County Extension agent.

GDD - Growing degree day units accumulated since average emergence date.

Average growing degree days needed for maturity: Corn, 2400-2800 GDD units; soybeans, 2100-2400 GDD units; sorghum, 1900-2400 GDD units;

Threat of frost *(Continued from page 1)*

state is rapidly approaching. The Panhandle and North Central districts have generally received 50% of their first freezes by Oct. 1. The rest of the state normally expects a freeze between Oct. 1 and Oct. 12.

Isolated pockets in the northern half of the state, along with the Panhandle, have already experienced freezing conditions. Indications are that some crop damage

occurred, although the total affected acreage was not significant.

Questions have risen on whether continued irrigation after a freeze would be economically beneficial. If freeze damage extends to the ear or below, irrigation is not recommended. The crop most likely is not photosynthetically active and translocation vessels in the stalk have

probably been ruptured. Therefore, the plant will not be able to efficiently transport water from the roots to the ear. If damage has been isolated to areas above the ear, irrigation may be feasible, but the producer will need to determine whether additional water would economically increase grain yield.

Al Dutcher
State Climatologist
Agricultural Meteorology

Feed options

(Continued from page 1)

forage residue will make it more difficult to properly process the grain and may require the grain to be cleaned before processing.

Another option is to harvest the grain as head chop milo. The entire milo head is harvested, ground or rolled and then ensiled. Head chop will usually contain 15% to 30% forage depending on how far below the head the plant is harvested. Head chop sorghum should be harvested at 45% to 55% moisture. Grain moisture content should be 28% or greater. Harvesting at high moisture improves the feeding value of the grain, reduces field losses and eliminates drying costs. However, cattle feeders should take the extra forage content of head chop into consideration when formulating growing and finishing rations.

If the grain has not started to fill, the plant could be harvested as silage or grazed. Because of an abundance of relatively cheap forage this year, grazing may be the most economical alternative.

Rick Stock
Extension Feedlot Specialist

Insect Guides addendum published

Enclosed with this issue of the *Insect Science, Plant Disease and Weed Science News* is a two-page addendum to the 1992 Insect Management Guides. Please insert these in your 1992 guides so that you have the latest pest management recommendations and chemical updates. Additional copies of the addendum will be available in mid October from your local Extension agent.

Steve Danielson
Extension Entomologist
Lincoln

Weed Science

Killing alfalfa stands — fall applications most efficient

As an alfalfa stand ages, it becomes less productive and eventually must be replaced. Two to three alfalfa plants per square foot will produce maximum yields in older stands on dryland. Stands thicker than this will not produce more forage because the lack of moisture limits production. Therefore, it is usually best to rotate to another crop for several years before reseeding alfalfa.

Fall is an excellent time to kill alfalfa with herbicides in preparation for next year's row crop. The increased use of no-till treatments makes this a popular alternative to plowing. Plowing is an age-old process in which the alfalfa is not always completely killed. Herbicides are more economical than plowing, very effective, and will leave the soil in a condition which

is less susceptible to erosion.

Applying herbicides in the fall will eliminate hurried applications in the spring and possible planting delays due to product label restrictions.

An economical, consistent alfalfa control treatment is a combination of 1 qt 2,4-D (4 lb/gal) = 0.5 pt of Banvel per acre. Make sure that the alfalfa has at least 4" of top growth so there is sufficient plant surface area for herbicide uptake. Applications made in October prior to a hard freeze will produce the best results.

Alex Martin
Extension Weeds Specialist
John McNamara
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Lincoln

Dear Subscriber,

There is something extra in this issue of the *Insect Science, Plant Disease, and Weed Science News* — a reader opinion survey. We would like you to help us evaluate our selection of topics and content as well as the changes we've made in format. We want to know what you like about the newsletter and what you would like to change. We also want to know more about who our readers are and what kind of information they need.

We would appreciate it if you would take a few minutes to complete the attached survey and mail it back, postage-free. Your comments and suggestions will help us plan for the next season. We value your opinion and hope you will take the time to complete this survey.

Editor

1993 Addendums for the Nebraska Insect Guides

EC92-1509 Corn and Sorghum

EC92-1511 Alfalfa, Soybeans, Wheat, Range, and Pasture

EC92-1537 Sugarbeets, Dry Beans, Sunflowers, Vetch, Potatoes, and Onions

By Steve Danielson, Gary Hein and Robert Wright, Extension Entomology Specialists

The following changes or additions should be inserted into the appropriate 1992 *Insect Management Guide*, as noted in each section.

Always refer to the pesticide label for complete instructions and restrictions before using the product.

EC 92-1509 Insect Management Guide for Corn and Sorghum

Title page — On the cover, corn and sorghum insects pictured, from the top down, are the western corn rootworm beetle, European corn borer larva in corn and greenbugs in sorghum.

Page 4 — Imidan is not registered (NR) for use on sweet corn. The preharvest interval for Furadan 4F on sweet corn is seven days.

Page 6 — Reducing damage from corn rootworm larvae, add the following:

E. Research at several midwestern universities, including the University of Nebraska-Lincoln, has shown that use of reduced rates of corn rootworm soil insecticides usually provides acceptable levels of protection from corn rootworm feeding injury. If you plan to use this approach, consider these points:

- 1) Do not reduce the application below 75% of the labelled rate.
- 2) Insecticide application equipment must be well calibrated for this approach to work.
- 3) If planting early, use a cultivation treatment rather than a planting time treatment.
- 4) Try reduced rate applications on one or a few fields first. Always include an untreated check strip and a strip treated with the labelled rate for comparison.
- 5) Be aware that although reduced rate applications are legal, the company labelling the insecticide is under no legal obligation to you when products are used below labelled rates.

Page 7 — Lorsban 15G can be used as an in furrow, T-band or band application at planting.

Page 9 — Furadan 15G; No more than 8.0 oz formulation per 1000 feet of row in seed furrow for wireworms and seed corn maggots.

Page 11 — Add Furadan 4F at 0.5 lb active ingredient per acre applied as a basal directed spray.

Page 14 — Change Penncap-M rate to 2-4 qt product per acre.

Page 21 — Carbaryl; use high gallonage ground application directed at the plant base.

Page 22 — Greenbug treatment guideline table. On plants 6 inches tall to boot, treat if greenbug colonies are beginning to cause red or yellow leaf spotting on lower leaves of most plants and if parasite numbers are low (less than 20 percent of greenbugs parasitized).

Page 22 — Registered treatments for planting time application in sorghum table. Furadan 15G must be applied in-furrow or T-band.

Page 23 — For wireworm control, add Counter 15G applied at planting in band at 8 oz product per 1000 feet of row for any row spacing (minimum 20-inch rows) or no more than 13.1 lb product per acre or Counter 20CR applied in band at planting at 6 oz product per 1000 feet of row for any row spacing (minimum 20-inch row) or no more than 9.8 lbs product per acre.

FMC Corporation will be deleting several labelled uses of Furadan 15G due to an agreement reached between FMC and Environmental Protection Agency. However, bags which state on the label that a particular use is legal will continue to be legal when applied according to label instructions.

Miles, Inc. has canceled all food uses of Dylox insecticide, including use on corn.



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EC92-1511 Insect Management Guide for Nebraska Alfalfa, Soybeans, Wheat, Range, and Pasture

Page 4 — Imidan is not registered (NR) on sweet corn. The preharvest interval for Furadan 4F on sweet corn is seven days.

Page 11 — The statement for clover leaf weevil larval control near the top of the second column (i.e. “*growers may want to consider treatment when five or more clover leaf weevil larvae are found per alfalfa crown and harvest is more than a week away*”) should be deleted.

Page 14 — Thiodan 3.0EC is not registered for lygus bug control.

Page 17 — Pounce 3.2EC can be used to control thistle caterpillar at a rate of 0.1 lb AI/Acre with a preharvest interval of 60 days. Also, the rate for control of webworms with Pounce 3.2EC is 0.1-0.2 lb AI/Acre.

Page 19 — The table listing insecticides registered for control of bean leaf beetles on soybeans was inadvertently deleted. For all practical purposes, the table on pages 19 and 20 for grasshopper control is applicable for bean leaf beetles, although the product label should be consulted for specific application rate information.

Page 25 — For additional information regarding the Russian wheat aphid on wheat, refer to *Sampling Russian Wheat Aphids in the Western Great Plains, GPAC-138*, published by the Great Plains Ag Council. It is available from your local University of Nebraska Extension office.

Page 28 — Furadan 4F is registered for border treatment at wheat planting at 0.25-0.5 fl oz/1,000 linear feet of row.

Please note: FMC Corporation will be deleting several labelled uses of Furadan 15G due to an agreement with FMC and the Environmental Protection Agency. Among these is the discontinuance for the 1993 season and beyond of the registration for use of Furadan 15G on soybeans and for alfalfa stand establishment. Material no longer in the hands of FMC and in the hands of distributors, dealers, applicators, and growers may be sold and used as labeled.

Miles Inc. has canceled all food uses of Dylox insecticide, including on alfalfa, clover, and soybeans.

EC92-1537 Insect Management Guide for Sugarbeets, Dry Beans, Sunflowers, Vetch, Potatoes, and Onions

Furadan 15G registration changes:

Several changes have been made in the Furadan 15G label that will affect its use over the next few years.

Pages 16 and 18 — Furadan 15G is no longer registered for use on potatoes.

Pages 5 and 13 — Newly manufactured Furadan 15G will not be labeled for use on sugarbeets and sunflowers. Use of Furadan 15G on these crops is only permitted for previously manufactured material packaged with a label that specifies its use on these crops.

Page 13 — The registered rate for use of Furadan 15G on sunflowers is 8 oz form/1000 row feet applied in-furrow or in a T-band.

Miscellaneous changes:

Page 4 — The preharvest interval for Furadan 4F on sweet corn is seven days.

Page 10 — Phorate (Thimet 15G and 20G) is registered for lygus bug, mite, and seedcorn maggot control in dry beans.

Page 18 — There are three formulations of Guthion (2S, 3F, and 35WP).

Furadan 4F can be applied aerially.

DiSyston 8 and 15G are registered for control of aphids, flea beetles, leafhoppers, Colorado potato beetle, and psyllids at varying rates and applications. See label for specific application and rate instructions.