

# PLANT & PEST ADVISORY

FIELD CROPS/LIVESTOCK EDITION \$1.50

SEPTEMBER 4, 1997



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## Stored Grain Pests Can Lead to Large Losses

*Daniel Kluchinski, Mercer County Agricultural Agent*

**T**here are numerous stored grain insect pests that can cause large losses in stored grain. These insects feed on the grain, reducing kernel weight and grain quality that can lead to financial losses at the elevator or reduced nutritional value of livestock rations. It is therefore important to prepare storage bins and develop a plan for preventing or reducing grain losses.

The most common source of insect infestation is old grain. Both internal and external sites can have grain residues and harbor these pests, allowing quick introduction once the grain is augered into the bin. External sites include spillage areas, grain residue in augers and other equipment, and stored animal feed. Internal sites include grain residues in the bin or subfloor areas, and grain attached to walls or in duct work. To reduce and eliminate such sites for these pests:

- Clean around the outside of the bins. Remove any brush, weeds, fallen leaves or spilled grain from around the bins. This can be a haven for insects as well as mice and rats.
- Clean equipment and augers before the start of harvest season. Removing this grain and any insects will help to avoid introduction of insects into the new grain. Dispose of this grain away from the bins.
- Clean the walls and floor of the empty bin with a broom or vacuum. If possible, clean as much duct and subfloor areas if possible.
- Once the bins have been cleaned and potential sites for insects removed, pesticide applications may be recommended to protect the new grain. These treatments include applications to the empty bin, to the grain as being augered into the bin, or as a top dressing application.
- If necessary, use a fumigant to kill any insects in the subfloor area. This treatment should be done every 4 to 5 years. For recommendations and procedure on fumigant use, as well as bin preparation and safety procedures, contact your county agricultural agent.
- The inside of the bin can be sprayed with a pesticide. Pesticides include Malathion 57 EC (premium grade) at one quart in 6 gallons of water, or methoxychlor 25 EC at one gallon in 10 gallons of water. Target cracks and crevices as well as the walls, floor and ceiling. These sprays should be applied at the rate of 1 gallon of solution to 500 square feet of surface.

SEE STORAGE ON PAGE 2



## Soybean Twilight Meeting

Tuesday, September 16, 1997

6:00 p.m. - 7:30 p.m.

John and Harold Pew's  
Field on Westfield Road  
Moorestown, New Jersey

- ❖ Soybean Production Update
- ❖ 21 Soybean Varieties on Display
- ❖ Insect and Diseases Problems this Season
- ❖ Fertility Management
- ❖ Weed Control

Call Rutgers Cooperative Extension of Burlington County at (609) 265-5757 for additional information.

### STORAGE FROM PAGE 1

- Auger the grain into an empty bin or on top of grain recently harvested. *Never* put newly harvested grain on top of last years' grain. If the grain is to be stored for six months or longer, consider using a pesticide on the grain stream while being augered. General information is listed in the following table. Ask your Extension agent for specific recommendations, as rates and materials vary with application method and crops. Always check the label and follow all instructions and precautions.

Pesticides Labeled for Use in Stored Grain Insect Control			
Pesticide	Dilution Rate	Application Rate and Method <sup>1</sup>	Grains Labeled <sup>2</sup>
Malathion 57 EC (premium grade)	1 pint in 2 to 5 gallons of water	5 gallons per 1000 bushels as grain fed in auger.	B, C, O, R, Sg, W
Malathion 1, 2, or 6% dust	apply undiluted	Apply labeled rate as grain fed in auger OR mix into grain surface in truck prior to augering.	B, C, O, R, Sg, W
Actellic 57 EC	9.2 to 12.3 fl oz in 5 gallons water	5 gallons per 1071 bushels (30 tons) as grain fed in auger or bin.	C and Sg
Reldan 4E	Apply as grain fed in grain to be treated.	Apply as grain fed in auger. Rates depend on grain to be treated. Check label.	B, O, Sg, W
Reldan 3% dust	apply undiluted	Apply 10 lb per 1000 bushels as grain fed in auger OR mix into grain surface in truck prior to augering. Can also apply as top dressing in bin at 7 lb per 1000 sq ft of surface area.	B, O, Sg, W
Bacillus thuringiensis	1 lb in 10 gallons of water OR wettable powder formulation dry to grain surface	Apply as a top dress in the bin at 10 gallons per 500 sq ft of surface area. Mix into top 4 inches of grain.	B, C, O, R, Sg, Sy, W
<sup>1</sup> Insecticide can be applied by small compressed air sprayer, gravity feed drip-on applicator or auger mounted dust distributors			
<sup>2</sup> B=barley, C=corn, O=oats, R=rye, Sg=sorghum, Sy=soybean, W=wheat			

Once the grain has been placed in the bin, monitor and inspect the bins periodically. A good inspection program should include inspection 4 to 6 weeks after the grain is stored, and then every 30 days. Look for any signs of infestation such as crusting or webbing on the upper surface, musty odors or wet, warm grain. All are indications that insect activity may be present. Probing the grain is particularly useful in determining infestations, grain damage or moisture in the grain mass. If present, further sampling may be helpful in determining the problem and course of action.

For grain in long term storage, the key is aeration. During the fall, winter and spring, the best way to slow insect activity is to cool the grain mass. The optimum temperature for insect development is 70°F. If the grain temperature is below 55 to 60°F, insects quit feeding and egg laying, and if maintained at even lower temperatures, will eventually starve out.

These procedures should help to reduce potential losses due to insect infestation. If insects are found, bring a sample to your county agricultural agent for identification and information on best control practices. □

# Weekly Weather Summary

Keith Arnesen, Agricultural Meteorologist

Temperatures averaged near normal. Extremes were 85 degrees at several locations, on the 1st and 50 degrees at Trenton on the 30th. Weekly rainfall averaged 0.65 inches North, 0.50 inches Central, and 0.20 inches South. The heaviest 24 hour total was 1.33 inches at Trenton on the 28th to 29th. Estimated soil moisture, in percent of field capacity, this past week averaged 86 percent North, 72 percent Central and 66 percent South. Four inch soil temperatures averaged 66 degrees North, 70 degrees Central and 70 degrees South.

Weather Summary for the Week Ending 8 a.m. Monday 9/1/97										
WEATHER STATIONS	RAINFALL			TEMPERATURE				GDD BASE50		MON
	WEEK	TOTAL	DEP	MX	MN	AVG	DEP	TOT	DEP	%FC
BELVIDERE BRIDGE	.44	22.73	-1.81	81	54	68.	1	2032	-174	76
CANOE BROOK	.58	24.04	-1.67	84	56	71.	3	2424	200	83
CHARLOTTEBURG	.72	24.96	-1.01	82	53	67.	2	1905	139	87
FLEMINGTON	.45	24.02	-.72	83	55	69.	1	2117	-164	86
LONG VALLEY	.91	25.03	-1.75	78	53	67.	2	1886	-82	90
NEWTON	.83	20.64	-3.36	78	52	65.	0	1757	-256	90
FREEHOLD	.33	23.41	-.73	85	56	71.	2	2408	-20	73
LONG BRANCH	.17	22.18	-2.31	80	57	69.	0	2320	-31	57
NEW BRUNSWICK	.37	29.39	5.00	83	56	70.	-2	2331	-204	84
PEMBERTON	.19	23.23	-1.59	85	66	76.	6	2700	223	45
TOMS RIVER	.22	25.75	.74	85	54	70.	0	2378	42	53
TRENTON	1.73	26.03	2.90	84	50	70.	-1	2306	-330	83
CAPE MAY COURT HOUSE	.00	19.72	-1.89	82	58	70.	-2	2465	139	53
DOWNSTOWN	.25	23.12	.26	84	55	70.	-1	2461	-180	62
GLASSBORO	.61	25.14	1.32	84	60	71.	0	2622	3	68
HAMMONTON	.24	25.12	1.30	83	54	69.	-2	2442	-181	62
POMONA	.11	32.78	10.79	80	55	68.	-1	2442	-3	56
SEABROOK	.02	23.95	2.11	83	58	71.	0	2627	-29	52
ATLANTIC CITY MARINA	.14	25.08	3.94	80	64	72.	1	2507	122	48
WOODSTOWN	.38	20.71	-2.77	85	55	70	NA	2646	NA	NA
WES KLINE — GDD BASE 40 PINEY HOLLOW	Last Week	203	(Ending 08/25/97)	This Week	209	(Ending 09/01/97)				

## Field Crops Research Tour

Friday, September 12, 1997

4:00 p.m. - 6:00 p.m.

Adelphia Plant Science Research Center

Freehold, New Jersey



- ❖ Foliar Mono Potassium Phosphate on Soybean
- ❖ Is Co-application of Manganese and Roundup Effective on Roundup Ready Soybeans?
- ❖ Is Boron Needed for Maximum Corn Yield?
- ❖ Changes in Phosphorus Management for Corn
- ❖ PSNT - Beyond Field Corn - a Look at Fall Cabbage
- ❖ Corn Silage Variety Trials

Call Rutgers Cooperative Extension (RCE) of Burlington County at (609) 265-5757 or RCE of Mercer County at (609) 989-6830 for additional information.

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**Pesticide User Responsibility:** Use pesticides safely and follow instructions on labels. The user is responsible for the proper use of pesticides, residues on crops, storage and disposal, as well as damages caused by drift. For specific labels, special local-needs label 24(c) registration, or section 18 exemption, contact Rutgers Cooperative Extension in your County.

**Use of Trade Names:** Trade names are used in this publication with the understanding that no discrimination is intended and no endorsement is implied. In some instances a compound may be sold under different trade names, which may vary as to label clearances.