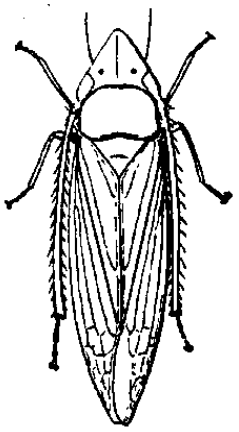
RUTGERS COOPERATIVE EXTENSION AT THE NEW JERSEY AGRICULTURAL EXPERIMENT STATION

PLANT & PEST ADVISORY

FIELD CROPS/LIVESTOCK EDITION $1.50 SEPTEMBER 3, 1998



INSIDE

Stored Grain Pests Can Lead to Large Losses

Daniel Kluchinski, Mercer County Agricultural Agent

There 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.

SEE GRAIN ON PAGE 2

GRAIN FROM PAGE 1

- 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.

- 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.

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 pest infestation. If insects are found, bring a sample to your county agricultural agent for identification and information on best control practices.

Pesticides Labeled for Use in Stored Grain Insect Control

Pesticide	Dilution Rate	Application Rate and Method[1]	Grains Labeled[2]
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 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
Bacillius 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

[1] Insecticide can be applied by small compressed air sprayer, gravity feed drip-on applicator or auger mounted dust distributors

[2] B=barley, C=corn, O=oats, R=rye, Sg=sorghum, Sy=soybean, W=wheat

Field Crops Weekly Pest Summary - 9/3/98

Field Crops Working Group

Alfalfa

Potato Leafhoppers are still active though they are below threshold over most of the state. Some fields in Burlington County are still reaching threshold. Farmers should remain vigilant for leafhoppers through September. Even though a farmer may not take any more cuttings this year, leafhoppers can still damage stands and reduce plant vigor going into the winter.

One field in Salem County is heavily infested with spider mites. Drought-stressed areas of the spring-seeded field are infested, which accounts for about 60% of the field. The symptoms are yellow leaflets that initially appear similar to leafhoppper yellowing. However, the yellowing caused by the spider mites appears in the middle of the leaflets as opposed to the leaf tips with leafhoppers. The spider mites are present on the underside of the leaves.

Corn

Fall armyworm still persists in some fields in both north and south Jersey, but most of the trouble spots have eased.

Bird damage is evident in some fields in Burlington County.

Some fields of grain corn are showing poor pollination.

Soybean

Spider mites persist in fields in Burlington County and some fields in the north. Generally, through spraying and changing weather conditions, spider mite populations are dropping off. Full season bean fields are beginning to senesce. ❑

Weekly Weather Summary

Keith Arnesen, Agricultural Meteorologist

Temperatures averaged much much above normal. Extremes were 97 degrees at Toms River and Pemberton on the 27th and 30th, and 58 degrees at Charlotteburg on the 31st. Weekly rainfall averaged 1.00 inches north, 0.25 inches central, and 0.25 inches south. The heaviest 24 hour total was 1.49 inches at Belvidere on the 25th to the 26th. Estimated soil moisture, in percent of field capacity, this past week averaged 84 percent north, 65 percent central and 47 percent south. Four inch soil temperatures averaged 74 degrees north, 77 degrees central and 78 degrees south.

Weather Summary for the Week Ending 8 a.m. Monday 8/31/98

	RAINFALL			TEMPERATURE				GDD BASE50		MON
WEATHER STATIONS	WEEK	TOTAL	DEP	MX	MN	AVG	DEP	TOT	DEP	%FC
BELVIDERE BRIDGE	1.49	30.89	6.49	87	62	75.	8	2488	299	77
CANOE BROOK	.42	28.60	3.04	94	63	79.	11	2846	640	69
CHARLOTTEBURG	1.24	32.75	6.93	87	58	73.	8	2207	456	82
LONG VALLEY	.84	30.61	3.97	85	60	74.	9	2243	290	76
FREEHOLD	.52	29.55	5.53	93	64	79.	10	2674	265	73
LONG BRANCH	.45	33.43	9.06	92	67	78.	8	2542	210	55
NEW BRUNSWICK	.08	28.49	4.23	93	64	79.	7	2737	224	77
PEMBERTON	.05	22.70	-2.00	97	64	81.	11	2926	469	29
TOMS RIVER	.25	35.56	10.68	97	60	79.	9	2802	486	52
TRENTON	.14	26.02	3.01	92	62	78.	7	2643	28	43
CAPE MAY CRT HSE	.30	22.91	1.41	92	67	79.	7	2801	497	48
DOWNSTOWN	.02	22.90	.15	92	65	80.	9	2898	228	41
HAMMONTO	.10	20.22	-3.48	95	65	80.	9	2865	263	30
POMONA	.52	24.99	3.10	96	65	79.	10	2841	415	47
SEABROOK	.03	25.31	3.58	92	65	80.	9	3048	413	39
ATLANTIC CTY MRNA	.54	26.09	5.04	93	69	79.	8	2834	470	43
WOODSTOWN	.00	23.97	0.60	93	62	80	NA	3074	NA	NA

WES KLINE — GDD BASE 40 PINEY HOLLOW

Last Week	236 (Ending 8/24/98)
This Week	280 (Ending 8/31/98)

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