

# Insects

## Protect Farm-Stored Grain

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### Introduction

Several insect species attack stored grain, resulting in both direct and indirect losses. Direct losses from insect feeding result in reduced grain weight, loss of nutrients and decreased germination. Indirectly, the presence of insects causes a deterioration and contamination of grain. This results in a poorer grade of grain and lower market value.

### Prevention of Insect Damage

Good housekeeping steps should be followed to prevent insect damage to stored grain. Never add new grain to old grain. Before storing grain, thoroughly clean the grain bin. Use brooms, hoes and shovels to clean out all old grain. Clean behind partitions, between walls, and in cracks and crevices. Inspect outside and beneath the bin, removing any grain that may have leaked out. Seal holes in the bin to prevent rats and mice from gaining access to the grain. Rodent-proof the bin by patching any holes. Check grain moisture before storing any grain. Never store grain with a high moisture content. Use a moisture meter to check the grain. Corn should be stored at less than 15 percent moisture; other grain at less than 13 percent.

### Bin Sprays

Treat the empty bin with a recommended insecticide such as Tempo after it has been cleaned (Table 1). Spray the walls, floors and all surfaces about two weeks prior to storage. Be certain to spray behind all doors and partitions.

### Grain Protectants

When storing dry, insect-free grain, treat it with a recommended insecticide grain protectant. The insecticide should be applied to the grain before or as it enters the storage bin. Apply the protectant to the grain stream as it is augered out of the combine or as it is being elevated into the bins.

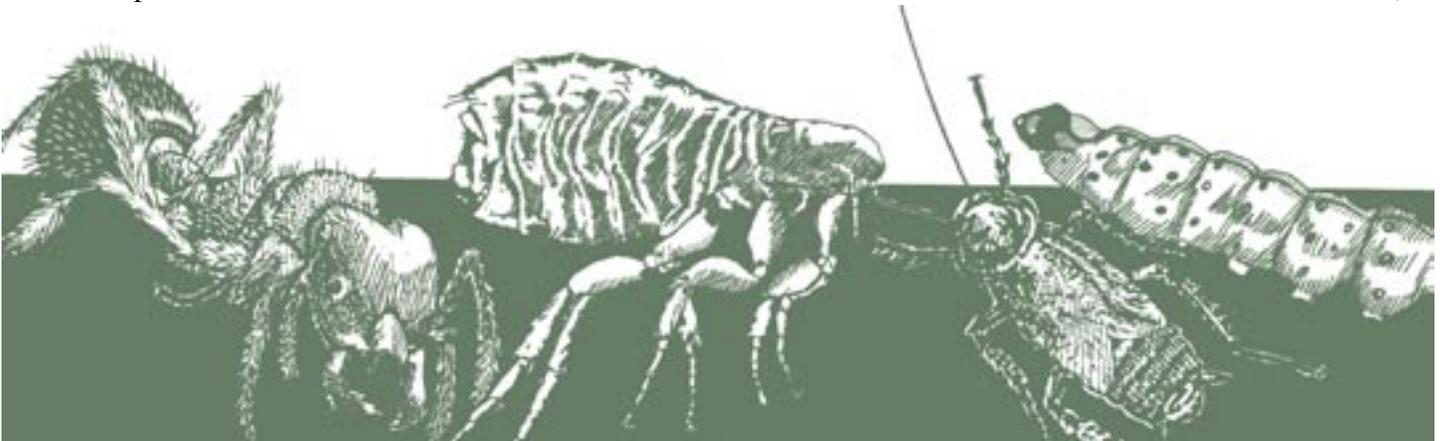


### Top-Dress Treatment

After the grain is binned, level the surface of the grain and top-dress with one of the recommended grain protectants (see Table 1).

### Monitor Grain after Storage

Weekly inspection of the grain should be made when the outside temperatures are above 75 degrees F or the grain temperatures are 60 degrees or more. Use a grain probe designed to pull a sample of grain and examine it for insects. If any insects are found, fumigation will be required to eliminate the pests. Fumigation is covered in a separate publication (PB1395 Insects in Farm-Stored Grain).



**Table 1. Recommended Products for Grain Storage**

<b>Grain Protectants</b>		
<b>Crop</b>	<b>Insecticide</b>	<b>Per 1,000 bushels</b>
Corn, Milo	Actellic 5E (5 gal. water per 1,071 bu. of grain)	9.2-12.3 oz.
Oats, Rice, Barley, Wheat or Grain Sorghum	Reldan 4E Storcide (5 gal. water per 1,000 bu. of grain)	Barley – 9 oz.; 9.6 oz. <sup>1</sup> Oats – 6.2 oz.; 6.4 oz. <sup>1</sup> Rice – 8.6 oz.; 9.0 oz. <sup>1</sup> Milo – 10.7 oz.; 11.2 oz. <sup>1</sup> Wheat – 11.7 oz.; 12.0 oz. <sup>1</sup>
<b>Empty Bin Treatments</b>		
Empty bin and spray prior to storage of corn or small grain. Not for treatment of grain.		
Empty bin only	Tempo (20WP)	See label for rate.
Empty bin only	Tempo SC Ultra	8 ml/gal.water.
Empty bin only	Insecto <sup>2</sup>	1.6 lb./2,500 bu. bin 2.4 lb./5,000 bu. bin 9.7 lb./40,000 bu. bin

**Before Storage**

Apply to bin walls, floors, doors and partitions outside walls.  
Use Tempo to treat empty bins. Tempo is a product of Bayer CropScience.

<sup>1</sup> Storcide rates.

<sup>2</sup> ‘Insecto’ is diatomaceous earth, an inert compound. Do not use on any grain.

**Precautionary Statement**

To protect people and the environment, pesticides should be used safely. This is everyone’s responsibility, especially the user. Read and follow label directions carefully before you buy, mix, apply, store or dispose of a pesticide. According to laws regulating pesticides, they must be used only as directed by the label. Persons who do not obey the law will be subject to penalties.

**Disclaimer Statement**

Pesticides recommended in this publication were register for the prescribed uses when printed. Pesticide registrations are continuously being reviewed. Should registration of a recommended pesticide be canceled, it would no longer be recommended by the University of Tennessee. Use of trade or brand names in this publication is for clarity and information; it does not imply approval of the product to the exclusion of others that may be of similar, suitable composition, nor does it guarantee or warrant the standard of the product.

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