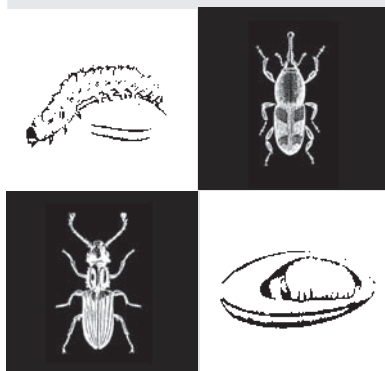


# Management of Stored Grain Insects, Part III

Structural sprays, pest strips, grain protectants and surface dressings



This guide is meant to help producers manage stored grain and avoid pest problems. If grain becomes infested with insects, the quality and value of the grain can be greatly reduced. Once infested, treatment will require fumigation, which should be done by specially trained applicators. This procedure is beyond the scope of this document.

Many chemicals are sold to protect stored grains from insect attack, but they should not be considered alternatives to proper stored grain handling procedures. When chemicals are chosen to supplement other management tactics, careful attention to application procedures and rates are needed to avoid illegal and potentially harmful residues.

Labels change as laws and experience with the product develop. Expect continued changes in application procedures and required safety equipment. Always consult the product label, which carries the force of state and federal law. Deviations from label instructions may result in unsalable grain, civil or criminal charges, personal injury, or even death.

Before applying chemicals, always check labels carefully for grains that can be treated, rates to use, application procedures and safety considerations.

## Structural Sprays or Bin Preparation Sprays

Apply structural sprays 4 to 6 weeks before filling the bin with grain. After thoroughly cleaning the structure, spray walls, roof and floor to the point of run off – approximately 1 gallon of mixed spray per 500 to 700 square feet of surface – or as directed on the label. Use a coarse spray at a pressure of at least 30 psi. Cleaning and treating are most effective if accomplished immediately after the structure is emptied of grain and temperatures are warm enough (60°F) to support insect activity.

Bin-wall treatments are designed to eliminate insects that remain in the cleaned structure. After treatment allow eggs to hatch and hidden insects to contact the toxic barrier and die before binning the

grain. If more than three months elapse between initial treatment and filling of the bin, a second wall treatment may be useful if applied at least two or three weeks before harvest. Labeled products include the following:

*Beta-Cyfluthrin (Tempo SC Ultra, Tempo WP Ultra and Tempo Ultra WSP)*

Apply to empty bin surfaces only, not to grain. WP formulations are preferred for use on concrete or other porous surfaces.

*Chlorpyrifos-methyl and deltamethrin (Storicide II)*

Bin applications should only be applied from outside the bin. Only downward spray is permitted. All openings, except for the the point of application, must be closed during applications. This product may only be applied to empty grain bins using automated spray equipment. Do not allow others to enter until sprays have dried.

*Malathion (several products by various manufacturers)*

Some labels have directions for treating empty grain bins. However, efficacy on many important stored grain pests may be questionable because of widespread resistance. Grains that can be stored after treatment are wheat, oats, corn, rye and barley. (Some labels do not list corn.) Many liquid formulations of malathion now carry the statement: "Do not apply directly to grain."

*Silicon dioxide, diatomaceous earth (Dryacide, Insecto, Protect-It and possibly others)*

Select a product specifically labeled for treating grain storage facilities and follow label directions for proper application.

*(S) - Methoprene (Diacon II)*

Diacon II protects stored grains from damaging insects by interfering with the normal process of insect development. Unlike traditional pesticides, Diacon II does not kill adult insects, but its residual activity prevents the development of larvae into adults. Diacon II, when used according to the label directions, prevents regeneration of the following insects: almond moth, Indianmeal moth, cigarette beetle,

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