

STORED PRODUCT INSECT MANAGEMENT

Michael D. Toews, Research Entomologist

FOOD PROCESSING FACILITIES ¹		
INSECTICIDE	APPLICATION METHODS	REMARKS
Conquer	Surface spray and fogging	Do not apply while food processing is underway.
Diacon II,	Fogging or surface spray	Product will not control adults
Gentrol IGR Concentrate	General surface, fogging, crack and crevice	This product will not kill adults but will control immatures, may be mixed with an adulticide.
Nyguard IGR Concentrate	General surface, fogging, crack and crevice	This product will not kill adults but will control immatures, may be mixed with an adulticide.
Phantom	Spot or crack and crevice only	Facility may not be in operation during application
Suspend SC	General surface, crack and crevice,	Do not use general surface when facility is in operation.
Talstar P	General surface, crack and crevice	Do not use general surface when facility is in operation.
Tempo SC Ultra	General surface, crack and crevice	Do not use general surface when facility is in operation.
ULD BP-100	Fogging, deep void ULV	Do not apply while food processing is underway.
ULD BP-300	Fogging, contact crack and crevice, deep void ULV	Do not apply while food processing is underway.

GRAIN STORAGE FACILITIES ²	
INSECTICIDE	REMARKS
EMPTY BIN RESIDUAL SPRAYS	
Diacon II	This product will not kill adults but will control immatures.
Diacon-D	This product will not kill adults, but will control immatures. Applicators must wear a dust mask and protective gloves.
Diatomaceous earth (Dryacide, Insecto, Protect-It and others)	Check label, not all DE products are labeled for treating grain storage facilities.
Storcide II	Application can only be made from outside the bin using automated spray equipment.
Suspend SC	Apply finished spray to equipment, wall and floor surfaces of grain bins and warehouses prior to storing or handling grain.
Tempo SC Ultra	Apply to all interior surfaces of storage bin and allow to dry before filling bins. Do not apply directly to grain.
EMPTY BIN FUMIGANTS	
Aluminum or magnesium phosphide	Fumigation should only be conducted by trained and licensed applicators.
GRAIN PROTECTANTS ^{3,4}	
Actellic 5E	Labeled on shelled corn and grain sorghum only.
Diacon II	Labeled for wheat, corn, sorghum, barley, rice oats, peanuts, and sunflower.
Diacon-D	Labeled for cereal grains, corn sunflower, canola, legumes, popcorn, wheat, spices, sorghum, rice cocoa, peanuts, oats and millet.

STORED PRODUCT INSECT MANAGEMENT (continued)

GRAIN STORAGE FACILITIES² (continued)	
INSECTICIDE	REMARKS
GRAIN PROTECTANTS^{3,4} (continued)	
Diatomaceous earth (Dryacide, Insecto, Protect-It and others)	These products are less effective when used on grain with increased moisture content and under humid conditions. Diatomaceous earth is known to decrease test weight and grain flowability.
Storcide II	Labeled for wheat, barley, oats, rice, and sorghum.
HEADSPACE TREATMENTS	
Dichlorvos pest strips	Polyvinyl strips impregnated with dichlorvos can be hung in the bin headspace to help control Indianmeal moth adults. Some of these products include Prozap Insect Guard and Hot Shot No Pest Strip.
GRAIN FUMIGANTS	
Aluminum or magnesium phosphide	Fumigation should only be conducted by trained and licensed applicators. Extensive label changes and new regulations require a written fumigation management plan for legal use.
ProFume	Application of this product requires training and certification by the registrant, Dow AgroSciences.
ECO ₂ FUME	This product is a mixture of phosphine and carbon dioxide gases that are packaged in compressed gas cylinders. It is labeled for use by certified applicators only.

¹The use of residual insecticides by itself does not constitute an insect management program. Depending on the facility, appropriate programs should also include incoming product inspection, product rotation, sanitation, monitoring with traps, and sealing gaps. Exterior grounds should be maintained by draining water away from the facility, removing vegetation near the structure, and promptly cleaning up spilled grain.

²Successful management of stored grain insects requires an integrated approach including proper housekeeping, grain loading, aeration, and active management. Bins must be thoroughly sealed, swept, and vacuumed before application of empty bin residual sprays. Bins with false floors should be fumigated if all the old grain debris cannot be removed. Grain protectants should be applied in a uniform manner to grain that is of proper storage moisture with minimal dockage and fines. Grain should be leveled using a grain spreader or by manually leveling the grain peak inside the bin. The use of controlled aeration (i.e. using a thermostat to govern when the fans run) will greatly help with maintenance of uniform grain temperatures, avoidance of moisture build up, loss of protectant residues, and limiting insect population growth. Finally, stored grain managers must sample the grain regularly and respond to rapid changes in grain temperature or moisture content, spoilage odors, and insect populations. Sole reliance on insecticides for stored grain insects will not provide satisfactory results.

³Never apply protectants before sending the grain through a grain drier as the heat would inactivate the insecticide resulting in little or no residual activity.

⁴Surveys consistently show that populations of stored grain moths and beetles are resistant to malathion.