STORED PRODUCT INSECT MANAGEMENT

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The key to storing grains and other commodities on the farm is to make storage conditions unfavorable for the survival of stored grain insects and fungi. The following steps are designed to reduce the initial number of insects in the bin, slow the development of any remaining insects, and apply corrective measures to reduce insect populations if necessary. Following these steps will also greatly reduce stored grain molds and associated mycotoxins.

- Clean storage facilities thoroughly inside and out to eliminate starter colonies of insects. Remove any weeds, crop debris, or clutter around the facility to reduce insect and rodent activity. All grain residues from the previous year should be removed from inside the facility as soon as the old crop is shipped.
- Seal any gaps or holes in the sides and roof of the bin using caulk or polyurethane foam. Check to make sure the bottom seal with the concrete is intact. Prevent water from flowing underneath the bin by applying plastic roof cement.

INSECTICIDES FOR EMPTY BIN TREATMENTS

INSECTICIDE	RATE	MOA	REMARKS
beta-cyfluthrin Tempo SC Ultra	0.25–0.5 fl oz/gal/1000 sq ft	3A	Apply to all interior surfaces of storage bin and allow to dry before filling bins.
deltamethrin + piperonyl butoxide Centynal Synergized	1–6 fl oz/gal/1000 sq ft.	3A	Apply to wall and floor surfaces of grain bins and warehouses prior to storing or handling grain.
deltamethrin D-Fense SC	0.25–1.5 fl oz/gal/1000 sq ft	3A	Use for exterior perimeter treatment only.
deltamethrin Suspend SC	0.25–1.5 fl oz/gal/1000 sq ft	3A	Apply finished spray to wall and floor surfaces of grain bins and warehouses prior to storing or handling grain.
deltamethrin Suspend PolyZone	0.25-1.5 fl oz/gal/1000 sq ft	3A	Apply finished spray to wall and floor surfaces of grain bins and warehouses prior to filling with grain.
deltamethrin + piperonyl butoxide + s-methoprene Gravista	1-6 fl oz/gal/1000 sq ft	3A + 7A	Apply finished spray to wall and floor surfaces of grain bins and warehouses prior to filling with grain.
deltamethrin + piperonyl butoxide + s-methoprene Gravista-D	13 oz/1000 sq ft	3A + 7A	Pay attention to cracks, crevices, and voids. Use a bulb duster or other suitable equipment to apply.
diatomaceous earth Insecto	Dust: 1 lb/1000 sq ft		Apply at least 2–3 days before filling bin. Use aeration fan or other air supply to apply dust.
diatomaceous earth Dryacide 100	Dust: 1–3 lb/1000 sq ft Slurry: 1.5 lb/1.5 gal/100 sq ft		Apply as a dust with a hand or power duster or as a slurry spray.
diatomaceous earth Protect-It	Dust: 0.6 lb/1000 sq ft Slurry: 1.5 lb/1.5 gal/100 sq ft		Apply 2 weeks before filling bins. Use a dust blower or bin fan to reach all surfaces, cracks, and crevices. Apply slurry as a fine mist.
pyriproxyfen Nyguard IGR Concentrate	0.8–2.4 tsp/gal/1500 sq ft 4–12 ml/gal/1500 sq ft	7C	This product will not kill adults but will control immatures. May be mixed with an adulticide.
s-methoprene Diacon-D IGR	1.5 oz/1000 sq ft	7A	This product will not kill adults, but will control immatures; applicators must wear a dust mask and protective gloves.
s-methoprene Diacon IGR	Fogging Treatment: 1 ml/1000 sq ft (0.2 tsp/1000 sq ft) Pressure Spray: 2 ml/1000 sq ft (0.4 tsp/1000 sq ft)	7A	Apply fogging treatment in water or oil in a cold aerosol generator. Diacon IGR is an insect-growth regulator that interferes with the development of insects. It will not kill adult insects. Apply as a pressure spray in low-pressure sprayer to all areas that may harbor insect pests.
s-methoprene + deltamethrin Diacon IGR PLUS	0.25–1.5 fl oz/gal/1000 sq ft	7A + 3A	Apply finished spray to wall and floor surfaces of grain bins and warehouses prior to filling with grain.

FUMIGANTS FOR CONTROLLING INSECTS BENEATH THE FALSE FLOOR

INSECTICIDE	MOA	REMARKS
aluminum or *magnesium phosphide*	24A	See fumigant table on page 388 for individual product names. Use rates as indicated on label.

RECOMMENDED MAXIMUM MOISTURE CONTENT FOR GRAIN IN AERATED[1] STORAGE CONDITIONS

CROP	PLANNED STORAGE TIME BEFORE MARKETING		
	6 MONTHS	6–12 MONTHS	MORE THAN 1 YEAR
Corn and grain sorghum	14%	13%	12%
Soybeans	13%	12%	11%
Small grains	12%	11%	10%
Edible beans	14%	12%	10%

1. Decrease each moisture content percentage by 2% if storing grain without aeration.

- Apply an EPA-approved insecticide on the floors and sides of empty storage facilities to eliminate insects hiding in cracks and crevices and to create a first line of defense against any insects that do find their way into the bin. Spray the outside of the bin to a height of 3 ft, and the surrounding concrete, gravel, or sod to a distance of 6–10 ft surrounding the bin. See the table on the previous page for insecticides that can be used for empty bin treatment.
- The use of residual insecticides by itself does not constitute an insect management program. Appropriate programs should also include incoming product inspection, product rotation, sanitation, monitoring with traps, properly sealed doors and windows, and sealing up cracks and wall voids. Exterior premises should be maintained by draining water away from the facility, directing light away from the building, removing vegetation near the structure, and promptly cleaning up spilled grain.
- Eventually, insects will build up on fines and broken kernels that accumulate under the perforated bin floor. Bins with false floors should be fumigated if the grain debris cannot be removed. Cover with plastic tarp (6 ml or thicker) to contain and hold the gas. Place the fumigant over the empty floor under the tarp. Note that all fumigants are RESTRICTED USE pesticides. Fumigation should only be conducted by trained and licensed applicators. Read the label and the applicator's manual. You will need to prepare a fumigation management plan before you fumigate.
- Clean out harvesting and loading equipment such as combines, trucks, and augers at the end of each harvest season. If not clean, insects will reproduce in the small amounts of grain left in the equipment and then be conveyed into the new crop grain.Store the grain at the appropriate moisture content. Insects and molds require moisture to survive.
- Store clean grain. Removing or equally dispersing fine particles and other foreign material will increase aeration efficiency and the effectiveness of grain protectants and fumigants. The following steps contribute to clean grain: Effective in-season weed control; properly adjusted combines; use of a grain pre-cleaner; coring the bin after it has been loaded; and use of a mechanical spreader at the top of the bin.
- Apply an approved grain protectant directly to clean grain as it is loaded into the bin. Apply to a moving grain stream at the bottom of the bucket elevator or auger so the material has an opportunity to contact as many kernels as possible as the grain is moved. It is important to run the grain through a cooling cycle or similar procedure before applying the protectant because high heat rapidly breaks down insecticides.
- Once the grain is in the bin, make sure the surface is level and the bin is not over filled. Leave a few feet of the straight side of the bin as air space to facilitate aeration and monitoring. If your bin does not have a spreader, unloading some grain will help level the central peak, as well as uniformly distribute fine particles that otherwise accumulate in the center of the bin.
- If you have had problems with Indian meal moths in the past, you may want to consider head space treatment. See Head Space Treatment table below.

HEADSPACE TREATMENTS

INSECTICIDE	MOA	RATE/1,000 SQ FT OF GRAIN SURFACE	REMARKS
dichlorvos pest strips including Prozap Insect Guard and Hot Shot No Pest Strip	1B	80 g/w 900–1200 cu ft	Polyvinyl strips impregnated with *dichlorvos* can be hung in the bin headspace to help control Indian meal moth adults.
s-*methoprene* + *pyrethrins* + *piperonyl butoxide* Inselux Fog and Mill Spray	7A + 3A	2 fl oz/1000 cu ft	May be applied undiluted or diluted with mineral oil at a 1:1 ratio through mechanical, thermal, or compressed-air fogging systems or as a fogging mist or space spray in empty grain bins/elevators or in headspace above commodities.

- Stored grain insects thrive in warm grain. The hotter it is, the faster insects feed, grow and reproduce. Conversely, stored grain insects quit feeding and developing when temperatures are below 60°F. Grain temperatures are optimally managed using thermostatically controlled aeration that enables the fans to operate only when the outside air temperature is cooler than the set point. Once the grain reaches the set point temperature, set the thermostat to the next cooler set point. Growers in the deep south should use temperature set points of 75°F, 65°F, and 45°F, whereas growers north of a line between Columbus and Savannah should use 70°F, 60°F, and 40°F. It is important not to let the grain freeze as this will result in "sweating" when the grain warms in the spring; similarly, grain can sweat if the differential between the grain and air temperatures is greater than 20°F. Temperature cables, moisture sensor cables, and automated aeration controllers make aeration more efficient, but you can do this manually.
- Initiate a systematic and thorough insect-monitoring system. Check the grain every 21 days from spring to fall and monthly in winter for the presence of insects. Five trier samples or probe traps should be sufficient on each sampling date.
- If you begin to find insects such as weevils or lesser grain borers, sell the grain; move the grain to another bin and apply a grain protectant as you move it; or fumigate the grain. Read the fumigant label and applicator guide carefully. Follow the instructions provided because the label is the law. Aluminum phosphide is the most frequently used on-farm fumigant. It requires the preparation of a fumigation management plan before any fumigant is applied. If there are leaks in the bin, the fumigant cannot be held long enough to kill the insects. Seal all openings before loading the bin, including the aeration fan, top vents, eaves, roof entry door and side entry door. Many fumigation attempts end in failure. Be sure to leave the fumigant in the bin long enough to be effective. Read the fumigant label to determine how long it will take the fumigant to reach a lethal level. It may take a day or two to reach the desired concentration; therefore, leave the bin sealed for the recommended length of time. A closed-loop fumigation can make fumigation more efficient and safe. In this method, fumigant is circulated in a pipe outside the bin from the top to the bottom and then drawn up through the grain to the surface.

INSECTICIDES FOR APPLYING DIRECTLY ON THE COMMODITY AS A PROTECTANT TREATMENT[1,2]

INSECTICIDE	MOA	RATE PER 1000 BUSHELS (DILUTE IN 5 GAL OF WATER)	REMARKS
pirimiphos-methyl Actellic 5E	1B	8.6–11.5 fl oz (corn) 8.6–11.5 fl oz (grain sorghum)	Labeled for use on shelled corn, popcorn, and grain sorghum only. DO NOT use if grain has been previously treated with Actellic.
deltamethrin + piperonyl butoxide Centynal Synergized	3A	35.6 fl oz (corn) 38 fl oz (wheat) 20.4 fl oz (oats) 31.7 fl oz (grain sorghum) 35.6 fl oz (rye)	Labeled for use on barley, corn, oats, popcorn, rice rye, grain sorghum, and wheat.
deltamethrin D-Fense SC	3A	8.5 fl oz (corn) 9.1 fl oz (wheat) 8.5 fl oz (oats) 8.5 fl oz (grain sorghum) 8.5 fl oz (rye)	Labeled for use on barley, corn, oats, popcorn, rice, rye, grain sorghum, and wheat.
s-methoprene Diacon IGR	7A	1.8–7 fl oz (corn) 1.8–7 fl oz (wheat) 1–4 fl oz (peanuts) 1–4 fl oz (oats) 1.8–7 fl oz (grain sorghum)	Labeled for use on wheat, corn, grain sorghum, barley, rice, oats, peanuts, and sunflower. Will not control weevils. Diacon IGR is an insect-growth regulator that interferes with the development of insects; it will not kill adult insects. Treat existing insect populations with an adulticide before or at the same time as applying Diacon IGR. Apply only once to grain of known treatment history. Use highest rates for maximum residual. Lowest rate provides shorter residual.

1. Do not apply before sending the grain through a grain drier or immediately after coming out of the drier as the heat will quickly degrade the insecticide. Grain protectants should only be applied to cool grain that is of proper storage moisture with minimal dockage and fines. It is best to apply protectants at the bottom of the auger so the insecticide can thoroughly coat the kernels as they are conveyed.
2. Surveys consistently show that stored grain insect populations are resistant to *malathion*.

INSECTICIDES FOR APPLYING DIRECTLY ON THE COMMODITY AS A PROTECTANT TREATMENT[1,2] (*continued*)

INSECTICIDE	MOA	RATE PER 1000 BUSHELS (DILUTE IN 5 GAL OF WATER)	REMARKS
s-methoprene Diacon-D IGR	7A	8–10 lb	Labeled for use on cereal grains, corn, sunflower, canola, legumes, popcorn, wheat, spices, grain sorghum, rice, cocoa, peanuts, oats, and millet. Will not control weevils. Diacon-D IGR is an insect-growth regulator that interferes with the development of insects. It will not kill adult insects. Treat existing insect populations with adulticide before or at the same time as applying Diacon-D IGR. Apply only once to grain of known treatment history.
deltamethrin + *s-methoprene* Diacon IGR PLUS	3A + 7A	9–18 fl oz (corn) 9.6–19.2 fl oz (wheat) 5.2–10.3 fl oz (oats) 8–16 fl oz (grain sorghum) 9–18 fl oz (rye)	Labeled for use on barley, corn, oats, popcorn, rice, rye, sorghum, and wheat.
deltamethrin + *(s)-methoprene* + *piperonyl butoxide* Gravista	3A + 7A	35.6 fl oz (corn) 38 fl oz (wheat) 20.4 fl oz (oats) 31.7 fl oz (grain sorghum) 35.6 fl oz (rye)	Labeled for use on barley, corn, oats, popcorn, rice, rye, sorghum, and wheat.
deltamethrin + *s-methoprene* + *piperonyl butoxide* Gravista-D	3A + 7A	8–10 lb	Labeled for use on cereal grains, corn, sunflower, canola, legumes, popcorn, wheat, spices, grain sorghum, peanut, and oats. Can also be mixed with animal feed (pet food, livestock feed, birdseed, and others) at 0.33 lb per ton of feed.
diatomaceous earth Dryacide 100		1–2 lb/ton	Thoroughly mix with grain. For use on grains, soybeans, peanuts, popcorn, and others (see label). *Diatomaceous earth* 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.
diatomaceous earth Insecto		1 lb/ton 1–2 lb/ton (if infested)	Apply uniformly as a dust on grains, soybeans, peanuts, popcorn, and others (see label).
diatomaceous earth Protect-It		18 lb (wheat, beans, peas) 9.6 lb (oats) 16.8 lb (rye)	Uniformly treat grain as it is loaded into bin. For use on grains, soybeans, peanuts, popcorn, and others (see label).

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GRAIN FUMIGANTS

PRODUCT	RATE	REMARKS
aluminum phosphide (phosphine gas)		All formulations of *aluminum phosphide* now require you to prepare a written fumigation management plan. **READ THE LABEL AND THE APPLICATORS MANUAL CAREFULLY BEFORE USING *ALUMINUM PHOSPHIDE*.** Many on-farm fumigations fail because the bin is not sealed adequately. Seal bin as tightly as possible. Use higher doses for older, less well-sealed grain bins. Dosage must be based on the capacity of the grain bin, not on the amount of grain in storage, unless the surface of the grain is tarped after *aluminum phosphide* application. If grain is tarped, dose can be based on the volume of the grain in storage. All formulations of *aluminum phosphide* are **RESTRICTED USE** pesticides. Dosage rate varies with the site. See the Applicators Manual that is part of the label.
aluminum phosphide pellets Weevil-Cide 60% pellets, Phosfume2 60% pellets, or Phostoxin 60% pellets	Farm bins: 350–725 pellets/1000 cu ft	
aluminum phosphide tablets* Weevil-Cide 60% tablets, Phosfume2 60% tablets, or Phostoxin 60% tablets	Farm bins: 70–145 tablets/1000 cu ft	
Phostoxin Tablet Prepac (33 tablets)**	See label	Phostoxin tablet prepack is a **RESTRICTED USE** pesticide.
cylinderized phosphine + *carbon dioxide gas* ECO_2FUME Fumigant Gas	See label	ECO_2FUME 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. It is a restricted use insecticide and requires specialized training and equipment. ECO_2FUME is a **RESTRICTED USE** pesticide.
pure phosphine gas VAPORPH3OS	See label	VAPORPH3OS is a **RESTRICTED USE** pesticide and requires specialized training and equipment for application. It is pure *phosphine* gas that is blended with *carbon dioxide* on site.
cylinderized sulfuryl fluoride ProFume	See label	ProFume is marketed through Douglas Products.

For more information on storing commodities on the farm, see this website: Maintaining Quality of Stored Grain, from the Alabama Cooperative Extension System.

HELPFUL CONVERSIONS FOR APPLYING INSECTICIDES TO STORED GRAINS[1]

BIN DIAMETER (FT)	GRAIN SURFACE AREA (SQ FT)	BUSHELS PER FOOT OF HEIGHT	APPROXIMATE SURFACE AREA OF EMPTY BIN (SQ FT)
8	50	40	100 + (height x 25)
16	201	161	400 + (height x 50)
24	452	362	900 + (height x 75)
32	804	643	1600 + (height x 100)

1. 1 bushel = 1.25 cu ft; 1 cu ft = 0.8 bushels.
Number of tons = (Number of bushels x test weight in pounds per bushel)/2000

PROTECTING SMALL QUANTITIES OF COMMODITIES

Here are several tips to keep unwanted visitors from getting into your dried commodities, such as beans, flour, spaghetti, dog biscuits, and peanuts.

1. Avoid buying material that is already infested. Start with high quality material that has been purchased from a reputable source.
2. Purchase only as much food or pet food as you normally consume in a month. Keeping foodstuffs in the home for several months makes them much more likely to become infested with stored product insects.
3. If there is good reason for thinking the food may be infested, freeze the package in a household freezer or use a heat treatment before it is stored. (See Step 6.)
4. Make sure food is dry. (See Table 1.) Whole grains and beans that are stored before they have been completely dried are prone to insect and disease problems.
5. Store food in tightly sealed containers that are safe for food products.
6. Monitor the food periodically for pest infestations. Discard any heavily infested food to keep problems from spreading; likely infestation sources include pet foods and treats, breakfast cereal, wheat flour, cornmeal, spices, dry noodles, popcorn and dried beans.
7. A light insect infestation can be dealt with by sifting out as many insects as possible and freezing the affected materials at 0°F for 4 days (small package) or for a week (large box). Alternatively, spread the material out into a thin layer on cookie sheets and bake the material at about 130°F for 30 minutes.
8. If storing in bulk (more than1 gallon), it may be beneficial to use a grain protectant. An example is diatomaceous earth such as Insecto. When working with this product, wear a mask or work outdoors to avoid over-exposure to dust, particularly if you have pre-existing respiratory ailments. Mixing a bit of diatomaceous earth into the bottom and top layers of stored products can help keep bulk-stored commodities insect free. Use it at a rate of 0.5-1 cup/5 gal of stored product. You may also find food-grade diatomaceous earth at your farmers co-op or feed store as an anti-caking agent. Do not use pool-grade or beverage grade diatomaceous earth.

GRAIN BAG STORAGE

Storing grain in large plastic grain bags has become popular in recent years. Research studies have shown varying results in terms of how well the system prevents insect and mold infestations. The most important consideration is that bags must be placed on hard, level, well-drained land. If bags are placed on a slope, they must be arranged to run along the direction of the slope, not across it. Every precaution must be taken to prevent the bags from being punctured, which is why bags should not be placed on top of crop stubble or other sharp surfaces.

TEMPORARY GRAIN STORAGE

Stored grain in the Southeast is at high risk for damage from insects and molds. That risk is dramatically increased if the grain is stored in unaerated conditions or if the grain is not stored in a sealed structure. Use caution in storing grain in piles and in structures not intended for grain storage.

STORING GRAIN USING ORGANIC INSECTICIDES

Producers may want to consider the following insecticides, most of which are OMRI approved. Be sure to read the insecticide label to make sure it meets your needs. The following products contain *Bacillus thuringiensis*: Biobit HP and Dipel DF (subsp. *kurstaki* strain ABTS-351), Javelin WG (subsp. *kurstaki* strain SA-11), and Xentari (subsp. *aizawai* strain ABTS-1857). Javelin WG is for use on stored soybeans only. Pyganic Crop Protection EC 5.0II insecticide is OMRI approved and contains natural pyrethrins. There are other insecticides that contain pyrethrins. Be sure to choose one that does not contain *piperonyl butoxide*, as that chemical is not considered organic. Insecto is a product containing *diatomaceous earth*. Other organic insecticides may be available.

CONTROLLING MOLDS AND MYCOTOXINS IN STORED GRAIN

Molds are fungi that can attack grains and grain products at any stage of production and can produce some of the most catastrophic losses in the crop. We have all seen mold on corn left standing in the field, perhaps on an ear opened by birds. The kernels are odd colors and are “fuzzy” in appearance, like the mold on stale bread. These more obvious signs of fungi on grain are hard to miss, and common sense tells us not to eat this spoiled grain or feed it to livestock. In fact, some of the most deadliest toxins are produced by fungi growing on grains, so our intuition is quite justified in this case. Fungi can also produce toxins (mycotoxins) even if the fungus is not readily apparent or visible to the naked eye, and a small amount of the fungus can contaminate an entire lot of grain, making it unsuitable for food or feed. Fungi can also grow on the grain if harvest or storage have been mishandled. With proper care, this contamination can be prevented, and if it occurs, testing can tell you whether or not the grain is safe for feeding.

There are many different kinds of fungi that can grow on grains. Some are worse than others in terms of toxins produced. In Alabama and Georgia, almost any grain can be affected by mycotoxins. Any stored grain (as well as soybeans, cotton-seed, and peanuts) can be contaminated by the fungus *Aspergillus* if conditions are right, and the result is the production of aflatoxin, one of the most serious toxins in agricultural commodities. Only 20 parts per billion of this toxin will make the grain unusable for feed. This toxin is also dangerous if fed to dairy animals because a form of the toxin can be transferred to milk. Other possible problem fungi are Fusarium in corn and most small grains and Penicillium in any grain. These toxins produce many different types of detrimental effects in humans and animals, so the diagnosis of mycotoxin poisoning is often difficult based on symptoms. It is more easily diagnosed from suspect grain samples.

Fungi usually come from spores, which act like the "seeds" of the fungus. Spores are microscopic, dustlike particles that are almost everywhere in the environment. Because they are so widespread, it is impossible to prevent most fungi from innoculating the grain at some point in the production cycle. The best strategy for preventing contamination is to avoid conditions that will allow these spores to germinate and grow. Preventing fungal contamination starts in the field with practices that lead to overall plant health, the cornerstone of IPM. Vigorous, healthy plants are less susceptible to attack by fungi. This includes those fungi that cause grain-storage toxins and those that cause plant disease (pathogens). Similarly, insects can increase storage fungi in two ways: by weakening the plant, making it generally more susceptible to disease; and by serving as vectors or carriers, of the fungi. In almost every case, the insect feeding site is a point of inoculation for these toxigenic fungi. In the field and in storage these feeding sites are foci from which fungal contamination begins. Insect control in the field and in storage is an absolute must if mycotoxin contamination is to be controlled in grains.

Timely and sanitary harvest is another essential ingredient in mycotoxin control. Grain that is harvested before it is fully mature contains excessive moisture that will promote the growth of fungi in storage bins. Maturity can best be judged by checking moisture content, using a moisture meter. Remember that even grain that is mature will contain excessive moisture just after a rain. There is never enough time at harvest, but a brief waiting period to allow grain to dry before combining will pay off later by preventing fungi from potentially spoiling the larger harvest in storage. Grain left in the field after physiological maturity will also begin to grow fungi due to insects, bird damage, and rain. Plants that have lodged, allowing ears to come in contact with the soil, may serve as sources of contamination. Adjusting combines to avoid picking up lodged ears will help prevent spoilage later.

Moisture is the main reason for spoilage of grains in storage. Grain that gets wet must be dried immediately before it can be placed in storage; otherwise, the entire bin may be lost to fungi. Check bins for leaks, and stop rain from getting in. Hot pockets in the bin are a sign of leakage. When the bin is emptied these areas of caked grain will be obvious.

Try not to mix spoiled grain with sound grain. Contaminated grain enclosed in a grain bin is a potential health hazard in the form of spores in the air. Much of that "dust" in the air in a grain bin is fungi spores, which can cause illness if breathed and can cause an explosion if there is even a spark. Always wear a dust mask if you must enter a grain bin.

If you suspect contamination of grain by storage fungi, have the grain tested before feeding it to livestock. Certain laboratories can test for the presence of Aspergillus and Fusarium toxins and tell you whether or not the grain is safe to feed.