

Grain Dust Explosions Are Constant Threat

NEWARK, Del. — Mill managers and grain elevator operators are keenly interested in dust control and fire prevention. The occasional explosion that completely destroys a facility and kills or injures several employees is a vivid reminder that dust is highly volatile and that an explosion can occur in any facility if proper precautions are not taken.

According to University of Delaware extension safety specialist Ron Jester, the rash of dust explosions a few years ago and OSHA's subsequent active participation in inspections and rule making have made elevator operators more aware of potential hazards. Farmers with milling and grain storage operations also have cause for concern.

Since dust, oxygen and a spark in a confined space must all be present to create an explosion, prevention involves removing one of these elements. The best way to reduce the hazard is to eliminate either the dust or the source of

ignition, the specialist says.

He suggests farmers and others with grain storage facilities follow these guidelines to minimize the chance of a grain dust explosion:

- Maintain a good housekeeping program. Prevent dust buildup on equipment, pipes, floors and around grinders.

- Be sure dust-tight equipment is really dust tight. Keep spouts and positive-pressure air ducts in good repair to prevent the escape of dust. Promptly fix leaks in grinding equipment and fans.

- Use a dust-control system to help reduce pressure buildup inside equipment and to keep dust from being forced into the mill.

- Prevent ignition by removing foreign materials from incoming ingredients. Magnets are commonly installed in spouts leading to processing or grinding equipment.

- Lubricate bearings according to manufacturers' recommendations to prevent overheating.

- Align belt drives properly. Misalignment can create friction

and sufficient heat to generate a fire.

- Check tension on bucket elevators. Inspect them periodically to ensure proper operation.

- Enforce the no-smoking rule in mill and grain facilities.

- Install dust-tight lights and explosion-proof, plug-in receptacles.

- Practice welding safety in the mill. This includes shutting down machinery, cleaning work areas, covering combustible materials with flame-proof tarpaulins and having a fire extinguisher handy.

- Be sure wiring conforms to the National Electrical Code.

- Reduce buildup of static electricity by making positive metal connections between pieces of equipment and the ground.

"It isn't easy to plan, supervise and conduct fire prevention

programs and practices," Jester says. "In fact, some managers and employees may actually have a negative attitude about fire prevention. They feel that because they've never had an explosion in their plant, they never will."

But nothing could be further from the truth, the safety specialist warns. Unless proper precautions are taken, there is an ever-increasing danger of explosion or fire.

For more information or to schedule a new extension safety program involving a grain dust explosion demonstration and a presentation on safe bin and tank entry, feed mill and grain industry personnel and farmers are encouraged to contact Ron Jester at (302) 856-7303.

Crop Residue: More Than 'Trash'

HARRISBURG — Crop residue is more than dead plant material, which some farmers call trash. It is the key ingredient of a conservation tillage program, says John Spitzer, agronomist for the USDA Soil Conservation Service.

Crop residue has saved millions of tons of topsoil on the nation's farmlands. The dead plant materials protect the soil from the impact of the rain drop and hold the soil in place so it will not run off.

"Each bushel of corn results in 56 pounds of residue, said Spitzer. "That means a 100 bushel-per-acre corn crop produces 5,600 pounds of residue per acre. If the residue is distributed over the field surface through the planting of next year's crop, soil erosion is reduced by up to 90 percent. Unfortunately, many farmers remove or plow under the plant residue, leaving the soil bare and subject to excessive soil loss.

Crop residue management is one of the most cost effective ways of lowering soil loss, adds Spitzer.

Conservation tillage and residue management offers other savings. Fuel, time and dollars are other pluses. Conservation tillage saves fuel because there are fewer trips over the field, horsepower requirements are lower and less equipment is needed for planting. Conserving soil, water, fuel and

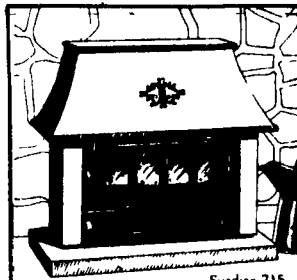
time is a great idea for farmers, but many want to know how conservation tillage affects crop yields and damage from weeds, insects, and disease.

Compared to plowing, yields with conservation tillage generally are the same or higher. "Yields with conservation tillage are considerably higher on dry years, thanks to the water saving features of the program," commented Spitzer.

Herbicides are available — if needed — that will control most problem weeds. Field experience has indicated no significant increase in damage from insects and diseases under conservation tillage. Like any successful farming program, proper timing in field operations, careful adjustment and maintenance of equipment and a good weed and disease control program are very important. important.

If conservation tillage is a possibility for your farm operation, contact your local conservation district or Soil Conservation Service office. They can help you plan a conservation tillage system that is right for your farm. Some districts have tillage equipment available on a rental basis for those who want to try a tillage method.

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