Managing Grain Dust Meeting Kit

WHAT IS GRAIN DUST?

Grain dust is the dust produced from the harvesting, drying, handling, storage or processing of barley, wheat, oats, maize or rye and includes any contaminants or additives within the dust (such as bacteria, endotoxin, fungal spores, insects, insect debris and pesticide residues).

RESPIRATORY HAZARDS IN GRAIN HANDLING FACILITIES

The grain handling industry is a high hazard industry where workers are exposed to numerous hazards.

Suffocation is a leading cause of death in grain storage bins. Suffocation can occur when a worker becomes buried (engulfed) by grain as they walk on moving grain or attempt to clear grain built up on the inside of a bin. Moving grain acts like “quicksand” and can bury a worker in seconds.

Grain dust explosions are the main source of fuel for explosions in grain handling. Grain dust is highly combustible and can burn or explode if enough becomes airborne or accumulates on a surface and finds an ignition source (such as hot bearing, overheated motor, misaligned conveyor belt, welding, cutting, or brazing).

Storage structures may be exposed to unhealthy levels of airborne contaminants, including molds, chemical fumigants (toxic chemicals), and gases associated with decaying and fermenting silage. Exposure to fumigants may cause permanent central nervous system damage, heart and vascular disease, and lung edema as well as cancer.

RESPIRATORY DISEASE CAUSED BY GRAIN DUST

The respiratory or breathing system includes the mouth, nose,

lungs and the tubes that connect them. Occupational respiratory disease is a medical term used to describe diseases caused by, or made worse by, something you breathe in while at work, like grain dust.

EXPOSURE TO GRAIN DUST

Grains pass through a large number of handling operations and the generation of dust is widespread.

Industry sectors

- Agriculture
- Flour mills and food factories
- Animal feed mills, feed blenders and feed compounders
- Maltings, breweries and distilleries
- Docks and grain terminals
- Commercial stores
- Transportation of grain

Processes that create grain dust include:

- Harvesting grain and transferring grain from combines into trailers
- Silo cleaning
- Cleaning, dressing and drying grain
- Moving grain about in a grain store
- Transferring grain in or out of grain stores or terminals
- Milling and mixing dry grain
- Feeding dry milled grain
- Maintenance of plant and equipment

Respiratory effects

- Rhinitis (runny or stuffy nose);
- Coughing and breathing difficulties
- Asthma (attacks of coughing, wheezing and chest tightness);
- Chronic bronchitis (cough and phlegm production usually in winter months and associated with smoking);
- Copd – chronic obstructive pulmonary disease (a longer-term

illness that makes breathing progressively difficult, includes chronic bronchitis and chronic asthma);
- Extrinsic allergic alveolitis, for example farmer's lung (fever, cough, increasing shortness of breath, muscle/joint pains and weight loss);
- Organic dust toxic syndrome, for example grain fever (a sudden onset, short-lived, 'flu-like' illness with fever and often associated with cough and chest discomfort).

Occupational asthma

Occupational asthma is caused by an allergy to something in the workplace, e.g., grain dust. This type of allergy usually takes several months or even years to develop, and may also cause eye and nasal symptoms at work.

HEALTH SURVEILLANCE FOR WORKERS

If you suspect you may have a respiratory problem, report your work-related symptoms to your employer.

The objectives of health surveillance are to:

- protect the health of individual workers by detecting, as early as possible, symptoms that may be caused by exposure to grain dust;
- help evaluate the effectiveness of measures taken to control exposure; and
- collect information to update knowledge of health hazards in the workplace.

FINAL WORD

Grain dust is produced when grain is harvested, dried, moved, stored and processed. The dust includes bacteria, fungi, insects, insect parts, animal droppings and possibly pesticide residues as well as dry plant particles.