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9.0 FEED AND FEED STORAGE

Grain, hay and silage need to be properly stored to protect water quality, reduce fly populations and maintain feed quality. Leak-proof covers are essential for grain and silage,

and are preferred for hay. Storage should not be in a location where water runs or ponds. Storage structures need to be secure and stable.

9.1 Silage

Silage produces a palatable, nutritious feed supply that can be harvested in almost all weather conditions. It is a good way to salvage hail-damaged, frozen or weedy crops, and can be used as an environmentally friendly form of weed control. Fields intended for silage can be planted to a variety of crops and crop mixes, which increases the biodiversity of plant life.

Handle and store silage properly to prevent seepage. Silage seepage contains high concentrations of nutrients and acids that can increase the levels of ammonia, nitrate and iron in ground and surface water. Silage seepage can enter surface water by runoff or groundwater by infiltration.

Figure 9.1 Silage Storage



9.1.1 Beneficial management practices for silage

When selecting a site for storing silage, investigate soil, topography and the water table to determine the environmental risk to nearby surface and groundwater.

- Select a storage facility site well away from watercourses and flood plains, and more than 100 metres (330 feet) from a water source.
- Ensure that the floor of the pit and the sides are in good condition and leak-proof. A clay liner or concrete pit may be necessary.
- Ensure that the cover has no holes to prevent rain entering the silage.
- Ensure that any run-on upslope of the silage storage is redirected around the site.
- Use a properly designed and well-maintained seepage collection system to prevent runoff entering water bodies.
- Do not store silage in a flood plain.
- Do not store silage in an area with a high water table.
- Harvest silage crops at moisture levels below 65 percent to minimize seepage.

9.2 Hay

Importing hay from another operation can introduce non-native weed species. These non-native species can impact weed control and biodiversity. When locating hay storage, take

into account the proximity of water bodies and accessibility to wildlife. Nutrients leaching from the feed can affect water quality.

9.2.1 Beneficial management practices for hay

- Purchase hay that has been certified under the Provincial Certified Weed-Free Hay Program as being weed-free.
- Inspect the hay field while it is still in the stand to identify weeds and determine severity.
- Feed suspect hay in specific control areas during the feeding period and inspect the area for weeds in subsequent years.
- If possible, feed suspect hay on grain land that will be blanket-sprayed during grain production. Most weeds are susceptible to cultivation and crop herbicides in their juvenile growth stage.
- Wait a few days after feeding weedy hay before moving cattle to a new feeding area to ensure that undigested seeds in manure remain in the control area.
- Locate the stack away from watercourses or flood plains.
- Cover bales to reduce rotting and nutrient leaching.
- To reduce fire hazards, store hay away from buildings, shelterbelts and power lines.

9.3 Grain

When choosing a location for grain storage, take into account the proximity to water bodies and rodent accessibility. Leaching from

the grain can affect water quality and the quality of the grain. Take special care when storing leftover treated seed on the farm.

9.3.1 Beneficial management practices for grain

- Purchase feed grain from reputable farms that use sound weed management programs.
- When possible, inspect the grain while it is still in the stand to identify weeds and determine severity.
- Store grain in waterproof, rodentproof facilities to prevent rotting and fecal contamination. Check the facility regularly for holes and cracks.
- Thoroughly clean emptied bins.
- Store leftover seed in a contained bin to prevent contamination of ground and surface water.

MANAGING FOR *FUSARIUM GRAMINEARUM*

The primary cereal disease affecting the Alberta livestock industry is caused by the fungus, *Fusarium graminearum*. Fusarium Head Blight (FHB) is the most destructive fungal disease of barley and wheat in Canada. The severity of FHB in cereal crops in western Manitoba and eastern Saskatchewan has caused major economic losses to crop producers and the grain export industry. *F. graminearum* greatly decreases yield and seed quality, and produces mycotoxins (deoxynivalenol and zearalenone).

When infected grain is fed to cattle, the fungus is destroyed by the cow's digestive system. Because a high percentage of Alberta's barley crop is fed to beef cattle, the bulk of *F. graminearum* in infected feed grain is destroyed.

But the concern for Alberta's industry centres on spilled grain, infected cereal seed, straw and grass hay, which can allow *F. graminearum* to escape into Alberta's agricultural land base. Take immediate action, where appropriate, to reduce the risk of spreading FHB.

To prevent the introduction and spread of FHB, follow strict measures during the transport, loading, unloading, storage and feeding of cereal grains. Although the fungus is mostly harboured in the seed of the plant, enough exists in the straw to allow its introduction to clean land. When using straw for feed or bedding, take extreme caution. **Do not use infected straw under any circumstance because of the long-term effects on crop production and the cost to the industry.**

Before purchasing straw from infected areas of Western Canada, ensure the straw is from fusarium-free land. Discuss the status of the straw with the source producer and, if necessary, get a sample of the corresponding grain and test it for the fungus. Several labs in Western Canada can accurately test for fusarium. Do not use the straw or grain if it is infected.

Cover all loads of grain during transport to prevent the spread of disease, and thoroughly clean up when loading and unloading.

Contact a local Agricultural Fieldman for further assistance regarding the purchase of fusarium-free grain and straw.

9.4 For More Information

Contact the following offices for the publications listed or for more information.

Alberta Agriculture, Food and Rural Development (AAFRD)

Agriculture Information Centre 1-866-882-7677

Publications 1-800-292-5697

www.agric.gov.ab.ca

- *Alberta Feedlot Management Guide, 2nd edition.*
- *Nutrient Content of Hays and Silages.*
- *Hay Storage – Planning and Design Guidelines.*
- *Management of Hay Imported into Alberta.*
- *Alberta Certified Weed-Free Hay Program.*
- *Alberta Fusarium graminearum Management Plan 2002 Agdex 110/632-3.*
- *Management of Cereal Grain in Storage.*
- *On-Farm Grain Handling and Storage Layouts Agdex 732.16.*