

Appendix V

Management of *Fusarium graminearum* in cereal grains* and cereal grain products intended for use as feed.

***Note: The term “grain” includes corn and processed cereal products, such as screening and pellet feed.**

Purpose: To prevent the introduction and spread of fusarium head blight (FHB) caused by *Fusarium graminearum*.

Measures to be followed during transport, loading, unloading, storage and feeding of cereal grains.

Monitoring Procedures	Critical Limit	Suggested Deviation & Corrective Action	Records (Suggested)
Purchasing Feed:			
User/buyer requests that the seller guarantee the grain (barley, wheat, oats and corn) is tested and found to have non-detectable levels of <i>Fusarium graminearum</i> , based on standard testing protocols.	Grain is found to have non-detectable levels of <i>Fusarium graminearum</i> .	If user/buyer does not purchase certified feed grains, then follow the standard operating procedures below for transport, storage, processing and feeding to reduce FHB risks.	Results of analysis from a qualified laboratory.
Feed Storage Off-Site or Trans-Loading Sites:			
Out-of-province grain that has not been tested and shown to have non-detectable levels of <i>Fusarium graminearum</i> must not be stored in uncovered piles, or in contact with soil.	No uncovered ground storage; no direct contact with soil.	Cover pile or move into covered storage until grain can be probed, tested and demonstrated to have non-detectable levels of <i>Fusarium graminearum</i> , or properly utilized or disposed of.	Province of origin Laboratory test results.
All loading/unloading sites handling out-of-province grain must have wind fence and drop socks and/or a covered loading bay.	Eliminate spillage and fungal spore aerosolization.	Cease transloading until truck or rail cars can be moved to a suitable facility, or until the proper equipment can be brought to the loading site. Report drivers to trucking company if they refuse to clean and disinfect trucks.	Record of complaints sent to trucking companies.
Out-of-province grain must be unloaded in such a manner to eliminate spillage.	No spillage.	If feed is spilled, it is cleaned up immediately so that all grain is removed. Workers are educated	Ag Fieldman records of noncompliance.

Monitoring Procedures	Critical Limit	Suggested Deviation & Corrective Action	Records (Suggested)
<p>It is important the grain not come into contact with soil.</p> <p>If transport vehicle is subsequently to be used to transport grain or seed with non-detectable levels of <i>Fusarium graminearum</i>, it must be cleaned before leaving the unloading site.</p>	<p>This is to eliminate cross contamination between loads.</p>	<p>on how to reduce spillage and how to recover spilled grain. Grain from cleanup must be salvaged and composted.</p>	
Transport:			
<p>All modes of transport from source to feeding site are covered.</p>	<p>All transport vehicles covered.</p>	<p>If not covered, inform operator to cover load and inform trucking company for corrective action.</p>	<p>Provincial Trucking Standards for loading/unloading and hauling grain. Record of complaints to trucking company.</p>
<p>During transport, care is taken to avoid any spillage.</p>	<p>No spillage.</p>	<p>Report to transport company.</p>	<p>Record of complaints to trucking company. Grain Hauler Truck sign at feedlot at unloading sites.</p>
<p>All transport vehicles hauling out-of-province grain must have the box/trailers cleaned and gates closed before being allowed to leave the unloading site.</p>	<p>No residual feed grain in transport vehicle.</p>	<p>Persons from business receiving the grain will check transport vehicle for compliance. Receiving site will contain an area and supplies for proper clean-up. Uncooperative operators will be reported to transport company and/or grain seller. Transport company educates drivers so problem doesn't reoccur.</p>	<p>Record of complaints to trucking company.</p>
Unloading Transport Unit:			
<p>All transport units hauling out-of-province grain must during unloading have tarps covering trailers and must remain covered during unloading</p>	<p>Control grain dust.</p>	<p>Persons from business receiving the grain will check transport vehicle for compliance. Receiving site will contain an area and supplies for proper clean-up. Uncooperative operators will be reported to transport company and/or grain seller. Transport company educates operators so problem doesn't reoccur.</p>	<p>Record of complaints to trucking company.</p>

Monitoring Procedures	Critical Limit	Suggested Deviation & Corrective Action	Records (Suggested)
Storage On-Site:			
Out of province feed grain that cannot be proven to have non-detectable levels of <i>Fusarium graminearum</i> must not be stored in uncovered piles, nor come into direct contact with the soil.	No uncovered ground storage	Cover pile or move into covered storage until grain can be probed, tested and demonstrated to have non-detectable levels of <i>Fusarium graminearum</i> , or properly utilized or disposed of.	Province of origin Laboratory test results.
Storage/Processing/Feeding:			
Out-of-province grain must be unloaded and handled to minimize spillage. Grain is not to come in contact with the soil.	No spillage.	If feed is spilled, it is cleaned up immediately so that all grain is removed, and the area is cleaned. Workers are educated on how to reduce spillage and how to clean contaminated areas. Grain from cleanup must be salvaged and composted.	Feeding site sanitation plan including management practices for in-pen composting. Grain Truck Unloading sign at feedlot for proper clean-out procedures. Manure management plan records.
Facilities receiving and processing any out-of-province grain must properly handle scalplings and dust collections.	No spillage.	If feed is spilled, it is cleaned up immediately so that all grain is removed, and the area is disinfected with an approved disinfectant. Workers are educated on how to reduce spillage and how to clean contaminated areas. Grain from cleanup must be salvaged and composted.	Feeding site sanitation plan. Manure management plan records.

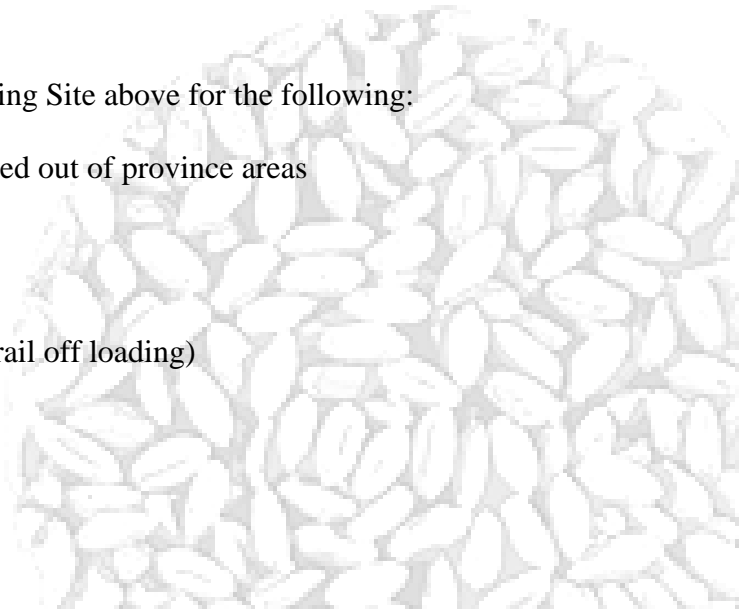
Follow the Same management practices from Feeding Site above for the following:

Trucking management practices- direct from infected out of province areas

- coverage
- spillage
- cleaning

Off Loading Sites (Terminal Storage: off loading; rail off loading)

- wind fence and drop socks



Example of Grain Trucking Standards for Feeding Site

CLEAN TRAILERS

- If trailers/tractors/boxcars need to be swept (i.e. they carried uncertified, out-of-province grain), it must be done while grain is being unloaded - over the pit.
- Grain spillage must be cleaned off trailers/tractors/boxcars and trailers/tractors/boxcars must be disinfected.
- During unloading, tarps are not to be rolled until the grain stops flowing from the loading facility.
- Hopper gates and tarps can not be left open to let the wind clean out any kernels or dust.
- If trucks are used to haul different commodities, they must be cleaned completely before loading new commodity.

Reference: TransMark Ltd/R.K. Heggie Grain Ltd.

