Canadian Grain Commission | Commission canadienne des grains

Generic HACCP Plan for Grains, Oilseeds & Pulses

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INTRODUCTION

The Canadian Grain Commission HACCP-based programs, CIPRS+ HACCP and CGC HACCP require that grain companies develop and implement a food safety system that includes prerequisite programs and a HACCP plan based on this generic HACCP plan. This generic HACCP Plan was developed by technical committees comprised of industry, scientific, provincial and Canadian Grain Commission experts using the forms developed by the Ontario Ministry of Agriculture, Food and Rural Affairs for their *Advantage Series of Food Safety Programs*™.

The generic plan was designed to include the inputs and processes most common to the grain industry. The technical committees assessed the hazards associated with those inputs and processes, and determined how they can be controlled or prevented through a HACCP-based food safety system.

A complementary tool developed in collaboration with industry and government experts is a group of generic prerequisite programs made up of 16 Good Operating Practices (GOPs). These GOPs can be used by grain companies as a basis for developing their own prerequisite programs as part of their HACCP-based food safety system. It is not mandatory to use the GOPs, but CIPRS+ HACCP and CGC HACCP do require that companies have prerequisite programs in place that meet the required outcomes of Annex 3 of the CGC Food Safety and Identity Preserved Quality Management System Standard. Companies must develop their prerequisite programs prior to developing a HACCP plan.

Grain companies should use this generic HACCP Plan by comparing it to their own operation and processes and apply only those aspects of it that are appropriate to their facility and, if necessary, adding inputs or processes. For example, a company may only process bulk grain and would therefore not receive bags as incoming material. As a result, they would not include bags on Form 2, would have no packaging in their Process Flow Diagram on Form 3, and would not include bags or packaging on Form 5. When each form is reviewed and changed to reflect each company's inputs and processes, the result is a HACCP Plan that is tailored to the facility.

The CGC has established a Technical Expert Advisory Committee that reviews the generic HACCP Plan annually. This review assesses the need for changes to the generic HACCP plan and GOPs in light of scientific information on new or emerging potential grain safety hazards, information brought forward from audits and new industry processes. If the generic HACCP model is revised, companies with CIPRS+HACCP or CGC HACCP certification will be advised and will be responsible for implementing any changes that are applicable to their facility. The implementation of applicable changes will be verified at the company's next CIPRS+HACCP or CGC HACCP audit.

Guidance on how the HACCP forms are to be used is included at the top of each form.

Form #1: Finished Product Description

Guidance: Delete any information that does not describe the finished product you ship to customers and add information needed to accurately describe your finished product(s).

Product Name	**Grain ***
1. Product Type (e.g. cooked, raw, processed, ready-to-eat)	Raw
2. Product Characteristics (e.g. pH, A_w, salinity, state, other qualities)	Dry, as defined in Chapter 2 of the Canadian Grain Commission Official Grain Grading Guide Solid, cool, no off odours Good natural colour (pulses)
3. Finished product and recipe meets the requirements of *Food and Drugs Act* (Y/N)**?**	Yes
4. Label meets requirements of *Safe Food for Canadians Act* and Regulations (Y/N)**?**	Labeling includes: Common Name, Net Quantity Declaration, Lot Code or Unique Identifier, Name and Principle Place of Business of the person by or for whom the grain was handled as required by the Act, on bag or bill of lading. Unprocessed grain intended for further manufacturing, processing or treatment must bear the expression "For Further Preparation Only" on the bag or bill of lading.
5. Product contains restricted ingredients as per *Food and Drugs Act* (Y/N)**?** If yes, list restricted ingredients.	No
6. Product contains allergens as per Health Canada Guidelines (Y/N)**?** If yes, list allergens.	Yes - wheat, soybeans and mustard
7. Shelf-life of Product	Years
8. Storage Instructions (e.g. keep fresh, keep frozen, humidity control, ready-to-cook)	Cool and dry
9. Intended Use of the Product: include special delivery instructions, special consumer groups (e.g. elderly, immuno-compromised)	Further processing by customer Further preparation by consumer (pulses, flax)

* Grain = cereal grains, oilseeds, and pulses

Form #2: Ingredients and Incoming Materials

Guidance: Delete any incoming ingredients and materials that you do not actually use in your facility. Retain only those that are used and the potential biological, chemical or physical hazards associated with each. If you have an ingredient or input not listed in this generic form, and do not know the associated hazards, contact the CGC for advice.

Identify potential biological, chemical or physical hazards associated with each. Answer each question and fill in "B" for biological, "C" for chemical or "P" for physical hazard and identify the specific hazard, if a hazard exists.

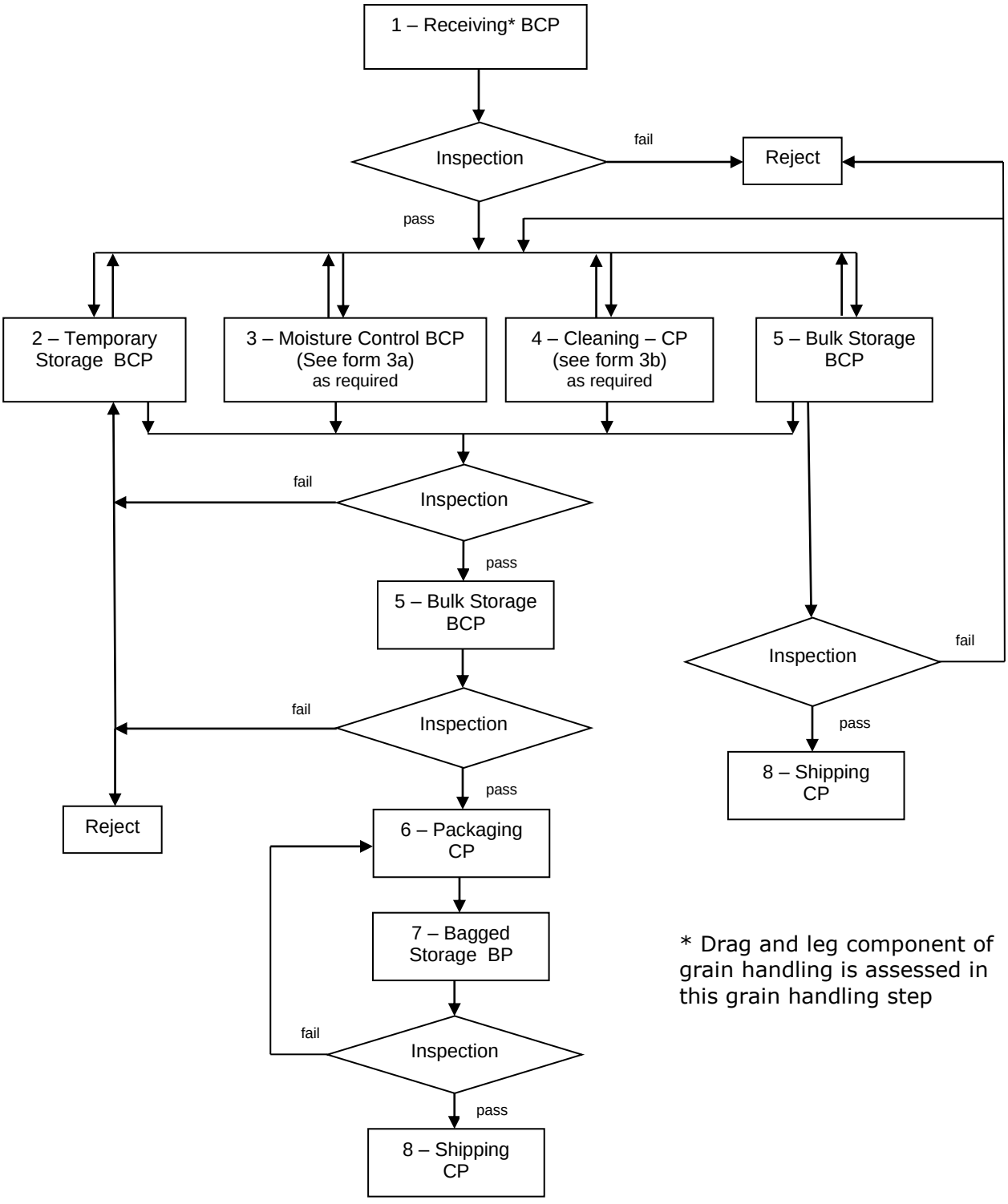
Product Name	List all incoming raw materials, processing aids, packaging materials and ingredients by product name.	Is a potential biological hazard associated with the item (e.g. bacteria, parasites)?	Is a potential chemical hazard associated with the item (e.g. antibiotic residues, pesticide residues, allergenic concerns)?	Is a potential physical hazard associated with the item? Address both metallic and non-metallic (e.g. environmental concerns – stones, dirt; foreign material – needles, bones).
Grain	Grain	Pathogenic Bacteria *	Pesticide residues (includes rodenticides, herbicides) Treated seed Fertilizer residues Granular fertilizer pellets Allergens Heavy metals Ergot alkaloids Alkaloids in weed seeds Mycotoxins	Stones Glass Bones Metal Wood chips Vegetative matter
	Paper bags	Pathogenic bacteria		
	Poly Bags/Totes	Pathogenic bacteria	Plasticizers	
	Jute Bags	Pathogenic bacteria		
	Thread			
	Paper Tags			
	Inks		Non-food grade ink	
	Shrink-wrap			
	Pallets			Nails Wood slivers
	Polishing agents	Pathogenic bacteria	Treated wood sawdust	

Product Name	List all incoming raw materials, processing aids, packaging materials and ingredients by product name.	Is a potential biological hazard associated with the item (e.g. bacteria, parasites)?	Is a potential chemical hazard associated with the item (e.g. antibiotic residues, pesticide residues, allergenic concerns)?	Is a potential physical hazard associated with the item? Address both metallic and non-metallic (e.g. environmental concerns – stones, dirt; foreign material – needles, bones).
	Bulkhead or cardboard liners/ Slip-sheets	Pathogenic bacteria		
	Poly-container liners/slip-sheets	Pathogenic bacteria	Plasticizer	
	Container desiccant		Unapproved desiccant material	
	Compressed air	Pathogenic bacteria	Non-food chemical vapours	
	Mineral oil		Non-food grade oil	

* Examples include *E. coli, Salmonella sp., Listeria monocytogenes*

Form #3: Flow Diagram with Critical Control Points

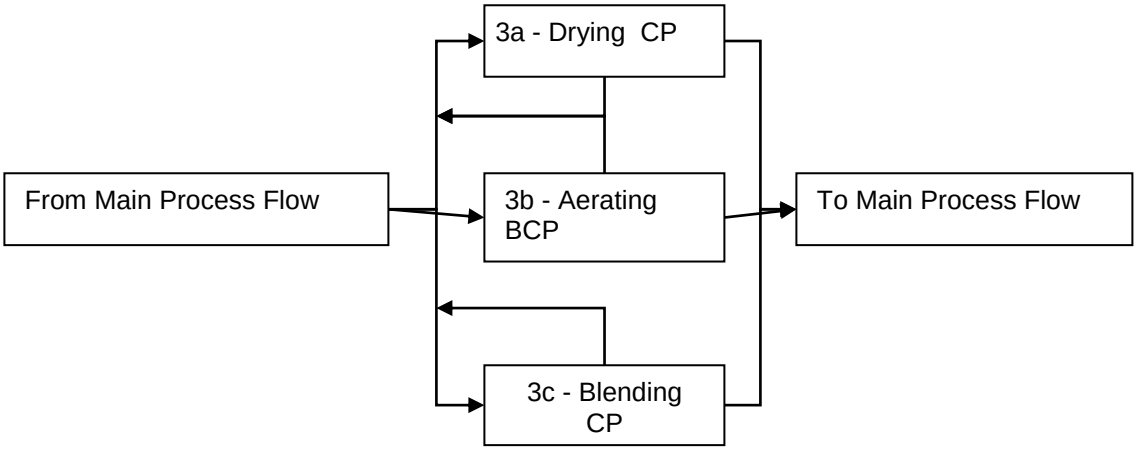
Guidance: Add or delete processes to reflect what you do within your own company. Moisture control and cleaning are expanded on Form 3A and Form 3B. Be sure to include the biological (B), chemical (C) or physical (P) hazards associated with each process.



* Drag and leg component of grain handling is assessed in this grain handling step

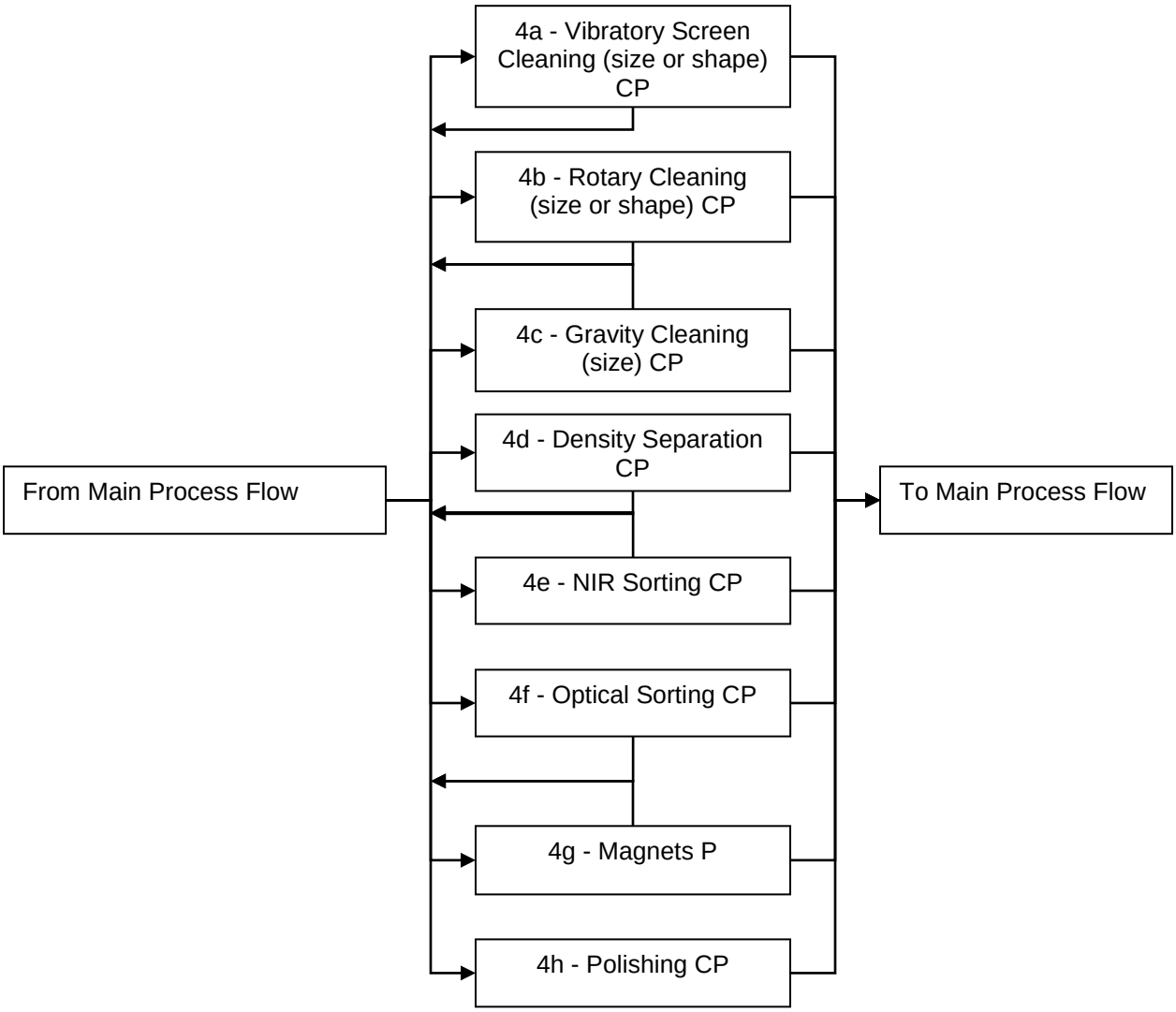
Form #3a: Moisture Control Process Flow Diagram

Guidance: Add or delete processes to reflect what you do within your own company. Be sure to include the biological (B), chemical (C) or physical (P) hazards associated with each process.



Form #3b: Cleaning/Processing Process Flow Diagram

Guidance: Add or delete processes to reflect what you do within your own company. Be sure to include the biological (B), chemical (C) or physical (P) hazards associated with each process.



Form #4: Plant Schematic

Guidance: Construct a plant schematic (site plan, floor plans) of your facility and grounds. Identify all bins, buildings, equipment, rooms. On the floor plan, identify the product flow. You may need more than one sheet to include all buildings, personnel welfare areas, bin locations and equipment. Number them 4 a, b, c, etc. if necessary.

TO BE COMPLETED BY INDIVIDUAL PLANT

Form 5 Summary – Hazard Description and CCP Identification – Incoming Ingredients & Materials

Guidance: Transfer incoming ingredients and materials that have associated hazards from Form 2 to this section. Answer each of the 5 questions relating to each to determine how the potential hazard is controlled. If you have added ingredients or materials not identified on the generic plan, be sure to document your reasons for identifying the hazard and its control. When a hazard is identified on this form as being controlled by a GMP/GOP, ensure it is clear in the referenced GMP/GOP how the hazard is controlled.

Ingredient/ Material	Type	Hazard Description	1. Is hazard controlled by a pre-requisite program? If answer is "yes" identify the GMP/GOP. Do not proceed to next question.	2. Is hazard likely to exceed acceptable levels? If answer is "no", do not proceed to next question.	3. Could a control measure be used at any step? (If no, go to Form 6)	4. Is this control measure designed to eliminate / reduce this hazard?	5. Will this hazard be eliminated /reduced to acceptable level later?
Grain	B	Pathogenic bacteria	No	Yes	No		
	C	Visible mould and associated mycotoxins	Receiving Training				
	C	Mycotoxins due to improper storage prior to delivery	No	Yes	No		
	C	High moisture grain leading to mould and mycotoxin development	Receiving Handling Storage Training				
	C	Pesticide residues, liquid fertilizer residues	No	Yes	No		
	C	Treated seed	Receiving Shipping Training				
	C	Allergens	Allergen Control				
	C	Heavy metals	No	Yes	No		
	C	Ergot alkaloids	Receiving Training				
	C	Alkaloids from weed seeds	No	No			

Ingredient/ Material	Type	Hazard Description	1. Is hazard controlled by a pre-requisite program? If answer is "yes" identify the GMP/GOP. Do not proceed to next question.	2. Is hazard likely to exceed acceptable levels? If answer is "no", do not proceed to next question.	3. Could a control measure be used at any step? (If no, go to Form 6)	4. Is this control measure designed to eliminate / reduce this hazard?	5. Will this hazard be eliminated /reduced to acceptable level later?
	C	Granular fertilizer pellets	Receiving Shipping Training				
	P	Metal, bones, stones, wood chips, vegetative matter	Receiving Shipping Equipment Cleaning & Maintenance Training				
	P	Glass	Receiving Equipment Cleaning & Maintenance Training				
Poly bags & totes	B	Pathogenic bacteria	Receiving Purchasing Training				
	C	Plasticizers	Purchasing Receiving Training				
Paper bags	B	Pathogenic bacteria	Receiving Training				
Jute bags	B	Pathogenic bacteria	Receiving Training				
Pallets	P	Nails, wood slivers	Storage Shipping Training				
Inks	C	Unapproved dye	Purchasing Receiving Training				

Ingredient/ Material	Type	Hazard Description	1. Is hazard controlled by a pre-requisite program? If answer is "yes" identify the GMP/GOP. Do not proceed to next question.	2. Is hazard likely to exceed acceptable levels? If answer is "no", do not proceed to next question.	3. Could a control measure be used at any step? (If no, go to Form 6)	4. Is this control measure designed to eliminate / reduce this hazard?	5. Will this hazard be eliminated /reduced to acceptable level later?
Polishing Agents	B	Pathogenic bacteria	Purchasing Receiving Training				
	C	Treated Wood Sawdust	Purchasing Receiving Training				
Bulkhead or cardboard liners/slip sheets	B	Pathogenic bacteria	Purchasing Receiving Training				
Poly-container liners/slip sheets	B	Pathogenic Bacteria	Purchasing Receiving Training				
	C	Plasticizers	Purchasing Receiving Training				
Container desiccant	C	Unapproved desiccant material leaking from desiccant package into grain in containers	Purchasing Receiving Training				
Compressed air (contact with grain and grain handling equipment)	B	Pathogenic bacteria	No	No			
	C	Non-food chemical vapours	Equipment cleaning and maintenance				

Ingredient/ Material	Type	Hazard Description	1. Is hazard controlled by a pre-requisite program? If answer is "yes" identify the GMP/GOP. Do not proceed to next question.	2. Is hazard likely to exceed acceptable levels? If answer is "no", do not proceed to next question.	3. Could a control measure be used at any step? (If no, go to Form 6)	4. Is this control measure designed to eliminate / reduce this hazard?	5. Will this hazard be eliminated /reduced to acceptable level later?
Mineral oil	C	Non-food grade oil	Purchasing Receiving Training				

Form 5 Summary – Hazard Description and CCP Identification – Process Flowcharts

Guidance: Transfer all processes that have associated hazards from Forms 3, 3a and 3b to this section. Answer each of the 5 questions relating to each to determine how the potential hazard is controlled. If you have added processes not identified on the generic plan, be sure to document your reasons for identifying the hazard and its control. When a hazard is identified on this form as being controlled by a GMP/GOP, ensure it is clear in the referenced GMP/GOP how the hazard is controlled.

Process	Type	Hazard Description	1. Is hazard controlled by a pre-requisite program?	2. Is hazard likely to exceed acceptable levels?	3. Could a control measure be used at any step? (If no, go to Form 6)	4. Is this control measure designed to eliminate/ reduce this hazard?	5. Will this hazard be eliminated/ reduced to acceptable level later?
1 - Receiving	B	Pathogenic bacteria from pests	Premise Housekeeping Pest Control Training				
	C	Mould & associated mycotoxins in pit and boot	Housekeeping Training				
	C	Road salt/sand, automotive fluids from conveyance vehicle	Receiving Training				
	C	Hydraulic/ pneumatic fluid from probe during sampling	Equipment Cleaning & Maintenance Training				
	C	Equipment lubricant	Equipment Cleaning & Maintenance Purchasing Receiving Training				
	C	Cross-contamination with allergen due to misdirection of incoming grain.	Allergen Control Receiving Training				

Process	Type	Hazard Description	1. Is hazard controlled by a pre-requisite program?	2. Is hazard likely to exceed acceptable levels?	3. Could a control measure be used at any step? (If no, go to Form 6)	4. Is this control measure designed to eliminate/ reduce this hazard?	5. Will this hazard be eliminated/ reduced to acceptable level later?
	P	Stones, metal from conveyance vehicle	Receiving Training				
	P	Debris from receiving area falling into pit	Premise Housekeeping Training				
	P	Foreign material falling into product	Equipment Design Equipment Cleaning & Maintenance Training				
2 - Temporary Storage	B	Pathogenic bacteria from pests	Premise Housekeeping Pest Control Training				
	C	Mould & associated mycotoxins in bin	Receiving, Handling, Storage & Shipping Training				
	P	Foreign material falling into the product	Equipment Cleaning & Maintenance Training				
3 – Moisture Control	B	Air used in bin aeration drawn near a source of pathogenic bacteria	Premise Design Premise Maintenance Training				
	C	Cross-contamination with allergen from previous use of equipment	Allergen Control Equipment Cleaning & Maintenance Training				
	C	Equipment lubricant	Equipment Cleaning & Maintenance Purchasing				

Process	Type	Hazard Description	1. Is hazard controlled by a pre-requisite program?	2. Is hazard likely to exceed acceptable levels?	3. Could a control measure be used at any step? (If no, go to Form 6)	4. Is this control measure designed to eliminate/ reduce this hazard?	5. Will this hazard be eliminated/ reduced to acceptable level later?
			Receiving Training				
	C	Mould growth due to insufficient drying within specified time parameters.	Receiving, Handling, Storage & Shipping Training				
	C	Air used in bin aeration drawn near a source chemical contaminants	Premise Design Premise Maintenance Training				
	P	Foreign material falling into product	Equipment Cleaning & Maintenance Training				
4 – Clean	C	Cross-contamination with allergen from previous use of equipment	Allergen Control Equipment Cleaning & Maintenance Training				
	C	Equipment lubricant	Equipment Cleaning & Maintenance Purchasing Receiving Training				
	P	Metal in the product due to magnet failure	Calibration Training				
	P	Foreign material falling into product from screen failure	Equipment Cleaning & Maintenance Training				

Process	Type	Hazard Description	1. Is hazard controlled by a pre-requisite program?	2. Is hazard likely to exceed acceptable levels?	3. Could a control measure be used at any step? (If no, go to Form 6)	4. Is this control measure designed to eliminate/ reduce this hazard?	5. Will this hazard be eliminated/ reduced to acceptable level later?
	P	Pieces of metal from equipment falling into product	Equipment Cleaning & Maintenance Training				
5 – Storage bulk	B	Pathogenic bacteria due to contamination from pests	Premise Housekeeping Pest Control Training				
	C	Visible mould & associated mycotoxins due to leak/ condensation	Equipment Design Equipment Cleaning & Maintenance Training				
	C	Pesticide residues from fumigation	Chemical Use Training				
	P	Foreign material falling into the product	Equipment Cleaning & Maintenance Training				
6 - Packaging	C	Equipment lubricant	Equipment Cleaning & Maintenance Purchasing Receiving Training				
	P	Foreign material in finished product	Equipment Cleaning & Maintenance Training				
	P	Needles in finished product	Equipment Cleaning & Maintenance Training				
7- Storage, bagged product	B	Pathogenic bacteria due to contamination from pests	Pest Control Storage Training				

Process	Type	Hazard Description	1. Is hazard controlled by a pre-requisite program?	2. Is hazard likely to exceed acceptable levels?	3. Could a control measure be used at any step? (If no, go to Form 6)	4. Is this control measure designed to eliminate/ reduce this hazard?	5. Will this hazard be eliminated/ reduced to acceptable level later?
	P	Packaging breached due to improper handling of the product	Shipping Training				
8- Shipping	C	Equipment lubricant	Equipment Cleaning & Maintenance Purchasing Shipping Training				
	C	Cross-contamination with allergen due to unloading from wrong bin	Allergen Control Shipping Training				
	P	Foreign material falling into product	Equipment Cleaning & Maintenance Training				

Form #6: Uncontrolled Hazards

Guidance: When the answer to Question #3 on Form 5 is "no", that hazard should be included here, with suggestions as to how it could be addressed.

Hazard	**How the hazard could be addressed**
Pathogenic bacteria in raw grain	Product intended for further preparation by customer or consumer prior to consumption
Mycotoxins due to improper storage prior to delivery	Producer education On-farm GPPs
Pesticide residues and liquid fertilizer residues in incoming commodity	Producer education On-farm GPPs
Heavy metals	Producer education Soil testing by producer

Form #7: HACCP Matrix

Guidance: No CCP has been identified for this generic HACCP plan, therefore this form is blank. However, if you have identified a CCP for your facility's HACCP plan, the CCP must be identified on Form 3, and this form must be filled out. The monitoring, deviation, corrective action and verification procedures as described here must be followed for any identified CCPs.

ITEM	INSTRUCTION	COMPLETE FOR EACH CCP
Process Step	Number as indicated on Form #3.	N/A
CCP Hazard Number	Number sequentially.	
Hazard Description	Identify whether the hazard is biological, chemical or physical. Describe hazard.	
Critical Limits	Define the value(s) that are acceptable to maintain the CCP under control	
Monitoring Procedures	Identify the following: • Who is responsible for the task; • What procedure is to be followed; • What observation is to be made or what measurement is to be taken; • How often the task is to be performed; and • Where the observations are to be recorded.	
Deviation Procedures and Corrective Actions	If monitoring indicates a deviation, describe: • Who takes the corrective actions; • What procedures are to be followed; • Where the actions are to be recorded.	
Verification Procedures	Identify the following: • Who is responsible for the task; • What procedure is to be followed; • What observation is to be made or what measurement is to be taken; • How often the task is to be performed; • Where the observations are to be recorded. If verification indicates a deviation, describe: • Who takes the corrective actions; • What procedures are to be followed • Where the actions are to be recorded.	
HACCP Records	List records to be used.	