

FEED. Risk assessment of the chain of starch manufacturing

EXAMPLE 2.1: A MAIZE PRODUCT, FOCUS ON RECEPTION, PROCESS, STORAGE AND LOADING STEPS

RISK BASED APPROACH FOR MAIZE PROCESSING				Process stage: RECEPTION (Cereal Maize)			
Hazard	Category	Chance	Severity	Risk Class.	Legislation	Control Measure	Remarks
Foreign bodies like glass, metals, stones, etc.	P	Low	High	3		Closed process, maize cleaning (sieving, magnets), staff hygiene, glass procedure, good maintenance practices.	Visual checks.
Phytotoxins	C	Low	Medium	2	Dir. 2002/32/EC	PRP for incoming raw materials Analysis via monitoring programme. Visual checks. Aggregate sampling.	Product specification.
Heavy Metals above the specified limit	C	Low	High	3	Dir.2002/32/EC	PRP for incoming raw materials. Analysis via monitoring programme.	Purchasing specifications.
Pesticide residues above the MRL (authorised), i.e. residues of herbicides, insecticides, fungicides or rodenticides above the MRL.	C	Medium	Medium	3	Reg. 396/2005/EC	PRP for incoming raw materials taking into account geographical origin. Analysis via monitoring programme.	Purchasing specifications.



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Pesticides residues (unauthorised)	C	Very low	High	2	Directive 2002/32/EC	A monitoring program should be in place.	Directive 2002/32/EC sets limits for a number of pesticides residues in feeding stuff. Some of the banned pesticides may be present in the environment.
Mycotoxins above the specified limit	C	Medium	High	4	Dir. 2002/32/EC Rec. 2006/576/EC	PRP for incoming raw materials taking into account geographical origin. Analysis via monitoring programme.	Purchasing specifications.
PAH, nitrous oxides, dioxins	C	Low	High	3	Dir. 2002/32/EC Reg. 183/2005/EC	Regular monitoring of the incoming material products.	Due to drying of the maize at primary level. A monitoring program should be in place.
Lubricants from equipment	C	Low	High	3		PRP for maintenance. Use of food grade lubricant Recording of the quantities used.	Purchasing specifications.
Pests	B	Medium	Medium	3		Closed buildings. The PRP programme should include pest control	Regular checks on pest activity.



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RISK BASED APPROACH FOR MAIZE PROCESSING				Process stage: PROCESS (Dry cleaning, Steeping, Grinding, Degerming, Sieving, Drying, Mixing, Drying)			
Hazard	Category	Chance	Severity	Risk Class	Legislation	Control Measure	Remarks
Foreign bodies	P	Low	High	3		Closed process, sieving, dedicated transport lines, dry cleaning of maize, staff hygiene , glass procedure, good maintenance practices PRP for personal hygiene.	Visual checks.
Lubricants from equipment	C	Low	High	3		PRP for maintenance Use of Food grade lubricant Recording of the quantities used.	Purchasing specifications.
Processing aids	C	Low	High	3		On-line monitoring (follow up excessive use of processing aids) pH control, SO ₂ content control, ISO9001 plans, work instructions and training of the personnel.	
Cleaning and disinfection agents	C	Low	Medium	2		PRP for cleaning and sanitation Use of food contact authorized.	Purchasing specifications.
Neoformed compounds (direct dryer)	C	Medium	Medium	3	Dir. 2002/32/EC	Gas specifications. End-product analyses (according to the dryer type).	
Water contamination	B/C	Low	High	3	Reg. 183/2005/EC	PRP for layout of premises and workspace. Analysis via monitoring programme. Disinfection treatment.	
Pests	B	Medium	Medium	3		PRP for Pest control Closed process and buildings.	Checks on pest activity.
Pathogenic Microbiological organisms	B	Low	High	3		Process control (Temperature, pH, Time and Moisture content). Process cleaning instruction. Process monitoring on micro	



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						organisms. Final product monitoring on micro organisms. Drying/evaporating steps: Control moisture content of product. Hygiene prerequisite program.	
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RISK BASED APPROACH FOR MAIZE PROCESSING				Process stage: STORAGE AND LOADING			
Hazard	Category	Chance	Severity	Risk Class.	Legislation	Control Measure	Remarks
Foreign bodies	P	Low	High	3		Closed process, sieving, staff hygiene, glass procedure, good maintenance practices	Visual checks.
Lubricants from equipment	C	Low	High	3		PRP for maintenance Use of food grade lubricant Recording of the quantities used.	Purchasing specifications.
Pests	B	Medium	Medium	3		PRP for pest control, closed buildings	Regular checks on pest activity.
Pathogenic microbiological organisms, including Salmonella	B	Medium	High	4		PRP for pest control, PRP for personal hygiene, PRP for cleaning and PRP for maintenance, monitoring programme. Control of temperature and ventilation	Good storage practices for bulk storage
Mycotoxins formation	C	Low	High	3	Dir. 2002/32/EC Rec. 2006/576/EC	Appropriate storage control should be in place. The PRP programme should foresee closed storage areas. Humidity & T controls when necessary. The finished product should be monitored on mycotoxins.	Good storage practices. Monitoring program should be in place.
Cross contamination during transport	B	Medium	Medium	3		Cleaning of transport means + verification previous loads	Service provider specification.

