



**Principle 2:  
Identify Critical Control Points**



Chapter 9 Critical Control Points  
HACCP A Systematic Approach to Food Safety

OFFICE OF THE TEXAS STATE CHEMIST  
Texas Feed and Fertilizer Control Service • Agriculture Analytical Service



## HACCP Principles

1. Conduct a Hazard Analysis (HA)
- 2. Identify Critical Control Points (CCPs)**
3. Establish Critical Limits (CLs)
4. Establish CCP Monitoring Requirements
5. Establish Corrective Actions (CA)
6. Establish Verification Procedures
7. Establish Record-Keeping Procedures

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### HACCP Principle 2: Identify Critical Control Points

**Definition** of Critical Control Point (CCP)-A step at which control can be applied and is essential to prevent or eliminate a food safety hazard or reduce it to an acceptable level (NACMCF)

*FSMA Definition of CCP* – means a point, step, or procedure in a food process at which control can be applied and is essential to prevent or eliminate a food safety hazard or reduce such hazard to an acceptable level

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### Control Point

Any step at which biological, physical, or chemical factors can be controlled.

*Controls, other than those at CCPs, that are also appropriate for the animal food safety. FSMA 507.34 (a)(2)(ii)*

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### Control Point versus Critical Control Point

Control points are generally related to product quality or regulatory compliance

CCP's specifically target food safety and are established only at points where hazards exist that are not controlled at some other point in the process

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### HACCP Principle 2: Identify Critical Control Points

The HACCP team evaluates the potential hazards that are reasonably likely to cause illness or injury in the absence of their control (identified through Principle 1) to determine if they are CCP's

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## HACCP Principle 2: Identify Critical Control Points

Potential hazards that are reasonably likely to cause illness or injury **must** be addressed in determining CCP's

Use information developed for Principle 1 hazard analysis

## Identifying CCP's

Recognize that there is a range in the ability to control a hazard

- Partial control, absolute control
- Sequencing to reduce cross-contamination will reduce a chemical hazard posed by medicated feed additives.
- Steam conditioning and pelleting have the ability to eliminate some biological hazards.

## Examples of Process Step CCP's

### Process Steps as CCPs

- ❑ Receiving
- ❑ Weighing of medications
- ❑ Batching ingredients
- ❑ Mixing
- ❑ Pelleting
- ❑ Labeling
- ❑ Delivery

### Process controls contained in FSMA §507.34

Includes procedures, practices and processes to ensure the control of parameters during operations

- ❑ Heat processing
- ❑ Irradiating
- ❑ Refrigerating
- ❑ Other preventive controls

## Sanitation as a preventive control

### Sanitation Controls

Include procedures, practices, and processes to ensure that the facility is maintained in a sanitary condition adequate to significantly minimize or prevent hazards such as environmental pathogens and biological hazards due to employee handling

### FSMA rules

- ❑ Cleanliness of animal food-contact surfaces including utensils and equipment
- ❑ Prevention of cross-contamination
- ❑ Looks very much like SSOPs

## Preventive Control - not required

### § 507.36

(a) Not required to implement preventive controls

- (1) Feed could not be consumed without appropriate controls
- (2) Rely upon your customer who is subject to requirements to implement preventive controls
- (3) Rely upon your customer who is subject to requirements to implement preventive controls
- (4) Rely on your customer to provide assurances of control later in the distribution chain
- (5) You establish, document and implement a system that ensures control at subsequent distribution step

(b) Documentation requirements for paragraph a

- (c) Written assurance by customer involving paragraph (a)
- (d) Written assurance required in paragraph (a)(4)

### § 507.37

The facility that provides the written assurance must act consistently with the assurance and document its action

## Identifying CCP's

The number of CCPs in a HACCP/food safety plan will depend upon the production process and the hazards

Goal is to identify all CCP's needed to assure product safety

Debate over:

- Which steps in a process are CCPs
- How and how well CCPs can be controlled
- Level of confidence that hazards can be prevented when CCPs are under control

## Identifying CCP's

- Use the list of hazards generated from hazard analysis
- Employ CCP decision tree as a tool
- Use model HACCP plans only as a guide
- For each CCP, method of control must be identified
- Different facilities preparing same product can differ in hazards and the points, steps or procedures which are CCPs

## CCP Decision Tree Form

Processing Category: Cattle Protein/Mineral Medicated Supplement

Process step	Hazard	Q1a: Do preventive measures exist for the identified hazard  If no go to Q1b If yes go to Q2	Q1b: is control at this step necessary?  If no: not a CCP If yes: modify process and return to Q1a	Q2: Does this step reduce occurrence of hazard to an acceptable level?  If no go to Q3 If yes: it is a CCP	Q3: Could contamination by hazard exceed an acceptable level or increase to unacceptable level?  If no not a CCP If yes go to Q4	Q4: Will subsequent step reduce or eliminate hazard to an acceptable level?  If no: CCP If yes: not a CCP	CCP
Bulk Receiving	Prohibited animal protein	Yes		Yes			CCP B1
Bulk Receiving	Aflatoxin	Yes		Yes			CCP C2

## Hazard Analysis Form

Product Category: Cattle protein/mineral medicated supplement

Ingredient or Processing step	Potential hazards introduced or controlled at this step	Is this a significant hazard? Severity: Likelihood		Justification for significance		Control measures to prevent, eliminate or reduce animal and human hazard	Is this a CCP?
		Animal	Human	Animal	Human		
Bulk receiving	Biological Prohibited animal protein	Yes	Yes	Cross contamination by prohibited animal protein (21 CFR 589.2000-1) is a potential source of bovine spongiform encephalopathy (BSE)	BSE in cattle can cause the human disease variant Creutzfeldt Jakob disease (vCJD)	Prohibited animal protein, approved supplier, carrier inspection SOPs	CCP B1
	<i>E. coli</i> O157:H7	No	No	Low likelihood in animal feed ingredients	Low likelihood in human food		
	Salmonella	Yes	No	Moderate likelihood in ingredients, a potential source for Salmonellosis	Low likelihood of it causing a human food problem	Approved supplier, cleaning feed manufacturing equipment SOPs	
Chemical Wrong ingredient or grade	Aflatoxin	Yes	No	Potential source of toxin to animals	Low likelihood of transfer to human food	Approved supplier and testing SOPs	CCP C1
		Yes	Yes	Toxic to finishing cattle at concentrations above 300 ppb	HI likelihood of transfer to milk as MI if fed to dairy cattle if ppm is >20 ppb	Sampling and testing incoming ingredients prone to aflatoxin SOP	
Physical Metal Plastic Stones Glass		Yes	No	Physical hazards can damage animal mouth and digestive system	Low likelihood of transfer to food	Equipment (screens, destoning device, metal detectors, and magnets) in place to eliminate hazard	
		Yes	No				
		Yes	No				

## CCP's

Potential hazards that are reasonably likely to cause illness or injury **must** be addressed in determining CCP's

If a hazard is identified which cannot be controlled, then the process may need to be redesigned or the product reformulated

## How are CCP's Designated?

### Sequentially numbered


- CCP 1, CCP 2, CCP 3...
- CCP 1b, CCP 2c, CCP 3b...

### Sequentially within hazard category

- CCP 1b, CCP 1c, CCP 2b...

### By process step name

- Mixing CCP, Flushing CCP



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