

IFSS Framework – Basic Level Gen Eds

B8 Environmental Hazards

Definition: Introductory knowledge, skills, and abilities related to environmental hazards focusing on sources of contamination and associated control methods.

Topic Area TLO: Explain the properties of environmental hazards.

Topic Area ELOs:

- Discuss the characteristics of environmental hazards.
- Identify categories and examples of environmental hazards.
- Recognize impacts of environmental hazards on animal feed and human food.
- Differentiate among environmental hazards.
- Describe methods to control environmental hazards.

Unit 1: Foundations	TLO Behavioral Anchors - not all-inclusive
<p>Definition: Basic knowledge of environmental hazards related to feed and food products and processes.</p> <p>TLO: Describe the effect of environmental hazards in feed and food products and processes.</p> <p>ELOs:</p> <ul style="list-style-type: none"> • Define relevant terminology. • Describe where to find resources. • Give examples of feed and food products that may be affected by environmental hazards. • Give examples of how a milestone event impacted public policy. • Describe the consequences of contamination by environmental hazards. • Give examples of illness caused by 	<ul style="list-style-type: none"> • The regulator can define environmental hazards. • The regulator has a knowledge or awareness of the effect of environmental hazards: <ul style="list-style-type: none"> a. Environmental hazards can cause injury, illness, or death in people and animals. • The regulator has a knowledge or awareness of the effects of environmental hazards in food and feed: <ul style="list-style-type: none"> a. Short term and long term b. Name types of injury or illness caused by environmental hazards • The regulator can explain the difference between environmental and biological hazards.

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<p>environmental hazards.</p> <ul style="list-style-type: none"> • Discuss how sampling is used to detect environmental hazards. 	
<p>Unit 2: Environmental Hazards of Concerns</p>	<p>TLO Behavioral Anchors - not all-inclusive</p>
<p>Definition: Basic knowledge of environmental hazards that can be a risk or threat.</p> <p>TLO: Explain which environmental hazards can adulterate the feed and food supply.</p> <p>ELOs:</p> <ul style="list-style-type: none"> • Identify the categories of environmental hazards. • Give examples of each category of environmental hazard. • Associate environmental hazards with products or processes. 	<ul style="list-style-type: none"> • The regulator can name the three categories of environmental hazards that can adulterate feed and food: <ol style="list-style-type: none"> Physical Chemical/toxin <ul style="list-style-type: none"> ▪ Radiological Biological • The regulator can define adulteration. • The regulator can give examples for each of the three categories of environmental hazards that can adulterate feed and food: <ol style="list-style-type: none"> Physical - glass Chemical/toxin – rat poison Biological – salmonella, listeria • The regulator has a knowledge or awareness that there may be allowable limits of various physical, chemical, and biological elements such as: <ol style="list-style-type: none"> Physical – insect parts Chemical/toxin– pesticides, aflatoxins Biological – coliforms
<p>Unit 3: Sources and Pathways</p>	<p>TLO Behavioral Anchors - not all-inclusive</p>
<p>Definition: Basic knowledge of the sources and pathways that environmental hazards can take in contaminating products and processes.</p> <p>TLO: Explain how products and processes can become contaminated by environmental hazards.</p> <p>ELOs:</p> <ul style="list-style-type: none"> • Discuss how environmental 	<ul style="list-style-type: none"> • The regulator can name the three categories of environmental hazards that can adulterate feed and food: <ol style="list-style-type: none"> Physical Chemical/toxin <ul style="list-style-type: none"> ▪ Radiological Biological • The regulator can define adulteration. • The regulator can give examples of each of the three categories of environmental hazards that can adulterate feed and food: <ol style="list-style-type: none"> Physical – glass Chemical/toxin – rat poison Biological – salmonella, listeria

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<p>hazards contaminate products and processes.</p> <ul style="list-style-type: none"> • Differentiate between intentional and unintentional contamination. • Describe vectors of contamination. • Give examples of food contamination sources. • Give examples of feed contamination sources. 	<ul style="list-style-type: none"> • The regulator has a knowledge or awareness that there may be allowable limits of various physical, chemical, and biological elements such as: <ol style="list-style-type: none"> a. Physical – insect parts b. Chemical/toxin – pesticides, aflatoxins c. Biological - coliforms
<p>Unit 4: Control Factors</p>	<p>TLO Behavioral Anchors - not all-inclusive</p>
<p>Definition: Basic knowledge of methods to control environmental hazards.</p> <p>TLO: Discuss methods used to control environmental hazards.</p> <p>ELOs:</p> <ul style="list-style-type: none"> • Explain the concept of acceptable levels of exposure. • Describe best management practices that are used to prevent spread of environmental hazards. • Give examples of preventive controls. • Describe control point monitoring. • Explain why source is important as a control factor. • Discuss response options for contamination. 	<ul style="list-style-type: none"> • The regulator has a knowledge or awareness that methods exist to control environmental hazards. • The regulator can define the terms eliminate, prevent, and control for environmental hazards. • The regulator can identify methods that reduce, control, monitor, or eliminate environmental hazards: <ol style="list-style-type: none"> a. Proper cleaning and sanitation b. Environmental monitoring programs c. Sequencing or flushing d. Time and temperature controls e. Corrective actions f. Process flow g. Chemical control program