

Ag Processing Technology

18302

Rationale Statement:

Ag Processing Technology highlights the raw commodity and its journey to consumer-ready, value-added products. Classroom and laboratory content may be enhanced by utilizing appropriate equipment and technology. Mathematics, science, English and human relations skills will be reinforced in the course. Work-based learning strategies appropriate for this course are school-based enterprises, field trips and internships.

Opportunities for application of clinical and leadership skills are provided by participation in FFA activities, conferences and skills competition such as Food Science, Meats Evaluation and Dairy Foods. Each student will be expected to complete a Supervised Agricultural Experience program.

Suggested grade level: 9th – 12th

Topics covered:

- Changes and trends in the food processing industry
- Food and worker safety
- Food processing regulations
- Processed food classification
- Harvesting, selection and inspection techniques
- Food processing procedures

Indicator #1: Examine the makeup of the food processing industry.

Bloom's Taxonomy Level	Standard and Examples
Analyzing	<p>AgP 1.1 Differentiate the evolution of the food processing industry.</p> <p>Examples:</p> <ul style="list-style-type: none">• Differentiate how research and industry developments lead to improvements in the food processing industry.• Appraise changes in the food processing industry.• Contrast trends in the food processing industry.• Distinguish consumer food needs and demands by decade and how food processing has changed because of consumers.
Understanding	<p>AgP 1.2 Discuss how food safety is addressed in the food processing industry.</p> <p>Examples:</p> <ul style="list-style-type: none">• Discuss environmental and safety concerns about the food supply.• Describe the issues of safety and environmental concerns about food and food processing (genetically modified organisms (GMOs), microorganisms, contamination, irradiation).• Explain an appropriate industry response to consumer concerns to assure a safe and wholesome food supply.
Understanding	<p>AgP 1.3 Explain how regulatory agencies in the food industry work to protect consumers.</p> <p>Examples:</p> <ul style="list-style-type: none">• Describe the importance and usage of industry standards in the food products and processing.• Describe the application of industry standards in the food products and processing industry.• Paraphrase United States Department of Agriculture (USDA) recall classifications.• Identify important food regulations from the Food and Drug Administration (FDA).

Indicator #2: Demonstrate operational procedures used in the food processing industry.

Bloom's Taxonomy Level	Standard and Examples
Understanding	<p>AgP 2.1 Translate regulatory procedures as they apply to food processing.</p> <p>Examples:</p> <ul style="list-style-type: none"> • Explain the importance of Sanitation Standard Operating Procedures (SSOP). • Report on the SSOP of a food products and processing company. • Describe the purpose of Good Manufacturing Practices (GMP). • Report on the GMP of a food products and processing company. • Identify reasons for using a planned maintenance program for facilities and equipment. • Describe contamination hazards (physical, chemical, biological) associated with food processing. • Recognize procedures to eliminate possible contamination hazards. • Paraphrase the seven principles of Hazard Analysis and Critical Control Point (HACCP). • Discuss how the seven principles of HACCP can be implemented.
Applying	<p>AgP 2.2 Demonstrate worker safety procedures for food processing equipment.</p> <p>Examples:</p> <ul style="list-style-type: none"> • Choose the proper safety standards that must be observed in facility design and equipment uses. • Outline guidelines for personnel safety in a food processing environment. • Use a detailed facilities diagram to determine the implementation of safety procedures.

Indicator #3: Process foods for storage, distribution and consumption.

Bloom's Taxonomy Level	Standard and Examples
Understanding	<p>AgP 3.1 Classify processed food products.</p> <p>Examples:</p> <ul style="list-style-type: none"> • Identify foods derived from meat, egg, poultry, fish and dairy products. • Explain desirable qualities of processed meat, egg, poultry, fish and dairy products. • Identify products derived from fruits and vegetables. • Describe products derived from grains, legumes and oilseeds.
Applying	<p>AgP 3.2 Utilize industry harvesting, selection and inspection techniques.</p> <p>Examples:</p> <ul style="list-style-type: none"> • Interpret quality and yield grades of food products and the factors that affect them. • Assign quality and yield grades to food products according to industry standards. • Select raw food products based on yield and quality grades. • Illustrate accepted animal treatment and harvesting techniques. • Interpret the importance of pre-mortem and post-mortem inspections of animals. • Choose desirable and undesirable characteristics of pre- and post-mortem animals in relation to food production.
Understanding	<p>AgP 3.3 Describe the fundamental procedural knowledge and skills of the food processing industry.</p> <p>Examples:</p> <ul style="list-style-type: none"> • Explain common weights and measures used in the food processing industry. • Describe methods and materials for processing foods for sale as fresh-food products. • Identify methods of food preservation and give examples of foods preserved by each method. • Discuss techniques for preparing ready-to-eat food products. • Recognize materials and methods of food packaging and presentation. • Identify storage conditions to preserve product quality.

Creating	<p>AgP 3.4 Process food safely.</p> <p>Examples:</p> <ul style="list-style-type: none">• Process meat and poultry products.• Process dairy products.• Preserve fruits and vegetables.• Process grains.• Process egg products.• Process honey.
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