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Food Protection Program
Policies, Procedures and Guidelines

Issue: Processing Guidelines for Apple Cider Production **No:** FP-06

Federal Regulations
These Guidelines are in addition to the requirements established for juice manufacturers as found in 21 CFR 120: Hazard Analysis and Critical Control Point (HACCP); which outlines procedures for the safe and sanitary processing and importing of juice.

Sanitation and Operating Conditions
Cider pressing operations are considered to be food-processing plants and must adhere to the strict fundamental principles of sanitation. Cider production must conform to the requirements of:

- 21 CFR 120,
- 105 CMR 500.000: Good Manufacturing Practices for Food, and
- These Guidelines.

Proper sanitation increases the quality of cider and prolongs shelf life.

A. Apples

1. The use of wormy, decayed, damaged, or rotten fruit is prohibited and such fruit must be discarded. Drop apples that were harvested and inspected for wholesomeness from the current year's crop may be used in the manufacturing of cider that will be processed using a control measure that achieves a 5-log pathogen reduction. A logbook identifying the source of all apples used in each production lot must be maintained. Particular attention is required of drop apples from orchards that have active deer or other animal populations. Appropriate personal hygiene must be practiced in the harvesting of apples.

2. Store apples in clean containers. Containers must be inspected and cleaned regularly.

3. Keep all processing apples in refrigerated storage or in an enclosed area, free of insects and rodent activity. Animals (cats, birds, dogs, wild animals, etc.) are prohibited from the processing and storage areas of the building.

4. Always keep apples and cider as cold as possible. All apples and cider must be kept at a temperature of 45°F or below. Lower temperatures extend the product’s shelf life.

5. All apples must be inspected, culled, and thoroughly washed and brushed before crushing. This can be accomplished as part of the grading operation but only if there is no storage or holding time between grading and pressing.

6. The use of sodium hypochlorite or other approved chemicals may be used during the washing and brushing step(s) to reduce microbial population. The chemicals must not be used in excess of the minimum amount required to accomplish their intended effect. Following the use of wash water with added chemicals, apples, or other produce, must be rinsed with potable water to remove chemical residues. Chlorine solutions used to wash produce should not exceed 200 ppm (parts per million).

B. Buildings and Grounds

1. Cider processing and other food-processing operations must be separated by partition, location, or other means from areas which might cause contamination of food products. The food-processing room must have impervious walls and ceilings and the floors must be tile or continuous concrete with adequate floor drains. Walls and ceilings should be light colored for easier cleaning and to provide better lighting on all work surfaces.

2. Fixtures, ducts and pipes should be regularly inspected for drip or condensate. Where drip or condensate exist all foods, raw materials, food-contact surfaces and packaging materials shall be protected.

3. All the processing area(s) must be screened to eliminate insect and rodent entry. Plastic-strip curtains are allowed where entrance is by forklift. During the cider-processing season, overhead garage door openings can be framed in with temporary screened panels and a walk-in door provided. The temporary barriers should be constructed to allow the garage door to be closed whenever desired

4. Toilet facilities should be conveniently located near the work area. The lavatory must have hot and cold running water and soap for hand washing. Also, there should be disposable towels and covered trash containers.

5. All doors, windows, and other openings around the cider operation must be screened.

6. Adequate lighting must be provided. All interior lights must be shielded to prevent pieces of glass from getting into food in the event of bulb or tube breakage.

7. Grounds and buildings surrounding the cider operation must be free of conditions that may result in contamination of the product. This includes improperly stored equipment, litter, waste, uncut weeds, grass, etc. which may provide harborage for rodents or other vermin.

8. Disposal of all wash and wastewater must be in accordance with the Massachusetts Department of Environmental Protection and local board of health regulations.

C. Equipment and Supplies

1. All equipment used in the cider processing operation must be made of food-grade wood, plastic or stainless steel.

2. Cider should be transported and stored in clean, non-porous, non-corrosive, easily cleanable, closed containers of food-grade materials. Cider must be transported and stored at temperatures of 45°F or below.

3. Utensils and equipment must be air dried and stored on racks high enough off the floor to prevent contamination.

4. A source of pressurized potable running water must be available in the processing room(s) for washing of equipment, fruit and periodic clean up of floors. A high-pressure washer is recommended.

5. Supplies of containers and ingredients should be stored at least six inches off the floor or on pallets in a clean, dry, screened area, free of insects and vermin. Containers must be stored in their original closed plastic bags and inverted with the open-end down to avoid environmental contamination. Inspect containers carefully before filling and/or sanitizing.

6. During the off-season, press racks and cloths should be stored so that birds, animals, insects, etc. are unable to come in contact with them. Thoroughly clean, sanitize, dry and wrap racks and cloths before storage.

7. Equipment, utensils, or chemicals (supplies) not used in food processing must not be stored in food processing or storage areas at any time. Pesticides must be stored separately from any food or food ingredients.

D. Processing Operations

1. Filter cloths must be specifically designed for this purpose, made of durable materials, and replaced frequently. During processing, the cloths must be handled in a sanitary manner, which includes hanging the cloths on a line or placing them in a clean container off the floor between runs. At the end of each day's operation, all press cloths must be washed, rinsed, dipped in a sanitizing solution, and dried. The cloths may be dried by spreading them on a clean line, in a well-ventilated and screened area. The use of automatic laundry equipment (washers and dryers) is recommended. If home equipment is used, household laundry cannot be mixed with the washing or drying of the press cloths. Proper drying and ventilation is especially important.

2. Press racks must be made of food-grade plastic or hardwood, which have been properly coated, with paraffin or other food-approved coating prior to the start of the cider season. Press racks must be kept off the floor at all times. At the end of each

day, all used press racks should be washed, sanitized, and allowed to dry. While drying, the racks must be placed off the floor in a well-ventilated, screened location.

3. All tubing carrying cider must be approved for food use, and all plastic tubing must be transparent. Tubing must be protected from abrasion or breakage and easily replaceable. If the tubing passes through spaces that are not readily accessible, the tubing must be of one piece and easily cleaned. Tubing must be as continuous as possible, with couplings kept to a minimum. After each production run the disassembling, cleaning, and sanitizing of tubing, clamps, couplings, and connections must be performed. Tubing must be positioned so that no pockets of liquid remain when the tubing is rinsed. Tubing must be cleaned and sanitized after each day's operation.

4. An adequate sanitizing solution can be prepared by mixing ¾ to 2½ ounces of 5.25% available chlorine bleach (commercial liquid chlorine bleach) to five (5) gallons of clean water. Each batch of sanitizing solution must be tested with chlorine test papers for the proper concentration. Chlorine test papers are available through many chemical supply houses, and cost approximately $20.00 per 100 test strips. The sanitizing solution must be 50-200 ppm (parts per million), and must not exceed the recommended strength.

5. After each day's operation, all equipment must be thoroughly rinsed with clean water under adequate pressure and in sufficient volume to dislodge particles of fruit and film from all surfaces. A suitable high-pressure washer is recommended for this purpose. All equipment must then be dismantled or disassembled as far as possible for cleaning and sanitizing. **Do not rinse equipment after sanitizing**. All equipment must be air-dried on racks.

6. Pressed pomace must be properly disposed of immediately. (Check with the local board of health for local regulations regarding the proper disposal of these materials.) Pomace residue may not be left overnight in the processing plant. The prompt removal of pomace residue helps control insects and rodent activity on the property.

7. To prevent contamination of food products, all persons working in the processing area must wear clean outer garments, maintain a high degree of personal cleanliness and conform to good hygienic practices while on duty. All persons must wash their hands thoroughly in an adequate hand-washing facility before starting work, after each absence from the working area, between operations, and any other time when their hands have become soiled. All jewelry, except wedding bands, shall be removed. Clean hair restraints, hairnets, headbands, caps, etc., must be worn. If gloves are used, they must be gloves designed for food-handling operations. **Latex gloves are not recommended** in food establishments. Whenever personnel change from a non-food-contact operation or cleaning operation to a food-contact operation, the individual must replace gloves or wash hands thoroughly before resuming food-contact operations.

8. Tobacco in any form may not be used in rooms where food or food ingredients are processed, handled, or stored.

9. No employee, while infected with a disease in a communicable form that can be transmitted by foods, or who is a carrier of organisms that cause such a disease or while affected with a boil, infected wound, or acute respiratory infection, shall work in a food establishment in any capacity in which there is a likelihood of such person contaminating food or food-contact surfaces with pathogenic organisms or transmitting disease to other persons. Diseases known to be transmissible through food, include, but are not limited to: Campylobacteriosis; *Escherichia coli* (*E. coli*) O157:H7; Hepatitis A; Salmonellosis; Shigellosis; Staphylococcus aureus intoxication; and any other disease so designated by the Massachusetts Division of Communicable Diseases in 105 CMR 300.000 et seq., Reportable Diseases, Surveillance, and Isolation and Quarantine Requirements.

10. The use of insecticides and rodenticides is permitted only under such precautions and restrictions as are stated on the label and which will not contaminate food, food-contact surfaces, or packaging materials with illegal residues. Only products labeled as permitted in food-handling establishments may be used. Label directions must be followed in order to avoid the contamination of food, food contact surfaces and packing materials. After pesticide application, all food contact surfaces must be thoroughly cleaned and sanitized.

11. Anyone who applies pesticide in a commercial food-handling establishment must be licensed as a pesticide applicator, through the Massachusetts Department of Agricultural Resources. Since pesticide regulations are constantly changing, one must be aware of the current status of regulations regarding any pesticide used in and around your operation. For further information on pesticide licensing and other pertinent regulations, contact the Massachusetts Department of Agricultural Resources.

E. Labeling

1. Cider shall only be sold in new containers with new caps. Containers must be properly labeled. The following information must be provided on the container label:

Brand Name (optional)
Statement of product identity or usual name, e.g., apple cider
Ingredients, including any additives or preservatives
Sell-by or Best-if-used-by Date
Name, address, city, state, and zip code of manufacturer, packer, or distributor
The statement "Keep Refrigerated"
Net quantity
Warning Statement (see #2 below)

2. As of November 5, 1999, the federal Food and Drug Administration (FDA) and the Massachusetts Department of Public Health's Food Protection Program require the

following warning statement on the container label of any juice, or beverage containing juice, that has not been processed in a manner capable of achieving at least 5-log reduction in pertinent microorganisms:

"Warning: this product has not been pasteurized and, therefore, may contain harmful bacteria that can cause serious illness in children, the elderly, and persons with weakened immune systems."

3. **Only a retail cider processor is allowed to use a Warning Label in lieu of process controls to achieve a 5-log reduction in pertinent microorganisms. All other processors must utilize appropriate process controls.**