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Susan S. Sumner

Durward A. Smith

University of Nebraska--Lincoln, dsmith6@unl.edu

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Good Manufacturing Practices for Apple Cider Mills

Susan S. Sumner, Extension Food Microbiologist
Durward A. Smith, Extension Food Scientist

- Apple cider contaminated with *Escherichia coli* O157:H7 was implicated in a food poisoning outbreak in Massachusetts in the fall of 1991. Apple cider was also implicated in a large outbreak of salmonellosis in New Jersey in 1974, and the Centers for Disease Control (CDC) also suspects *E. coli* O157:H7 was the source of a 1980 outbreak in Canada.
- Apple cider typically has a pH in the 3.6 to 4.0 range. The Food and Drug Administration exempts foods with a pH below 4.6 from its potentially hazardous food list. However, the CDC reports that apple cider supports the growth of both *E. coli* and *Salmonella*.
- *E. coli* O157:H7 appears to survive well in natural apple cider (no preservatives added) when held at refrigerated temperatures of 46° F (8° C), according to research carried out by Dr. Michael P. Doyle at the University of Georgia.
- Apple cider held at higher temperatures is less likely to contain *E. coli* because molds and yeasts grow more quickly and destroy the organism.
- The addition of sodium benzoate (0.05 - 0.1% by weight) to apple cider prevents the growth of *E. coli* regardless of the holding temperature.
- The industry prefers the use of potassium sorbate to inhibit yeasts and molds; however, this preservative does not control *E. coli* O157:H7.

Critical Control Points for Apple Cider Mills

- Sort and cull out all highly defective apples.
- Clean apples thoroughly by washing and brushing.

- Clean and sanitize equipment and facilities according to regulations.
- Maintain proper storage and handling temperatures.
- Follow labeling requirements.

Cider Storage and Shelf Life

Cider can be stored in refrigerated tanks before bottling or it can be put into containers directly after pressing. The critical control point is to cool the cider as rapidly as possible. Fresh apple cider will last about two weeks if stored at 42° F or below. Adding sodium benzoate will extend the shelf life about one to two weeks. Freezing the product will also increase the shelf life.

Sanitary Standards for Cider Mills

Sanitary standards for cider mills are generally the same as other food processors, therefore, the Requirements for Food Processing and Storage Establishments in Nebraska should be followed. There is a special provision to allow for the traditional cider press.

Apple Storage and Washing

Apples are best pressed into cider as soon as possible after harvesting, especially if drops are used. Wash apples either by soaking or spraying with clean potable water under pressure, or by a combination of washing and brushing. Washing and brushing will reduce the bacteria, yeast and mold counts of the apples, and increase the shelf life of the cider.

Facilities and Equipment

Facilities and equipment must be easily cleanable and made of suitable material. Protect outer openings from pests and other contaminants. Have hot and cold running water from an approved source available for equipment cleaning and handwashing.

Filling and Capping

Store bottles and caps in a sanitary manner until ready for use. Fill and cap cider bottles in a sanitary manner. Take precautions to prevent contamination of cider, bottles and caps with foreign matter or microorganisms during the filling and capping process. All persons handling apples, equipment, cider and containers must practice a high degree of personal hygiene and adhere to good sanitary practices.

Cleaning and Sanitizing

Clean the washer, grinder, conveyors, press, pumps, filters, filler and tanks after each use. Use a detergent made specifically for removing cider stains to flush lines, tanks and other equipment. After cleaning, sanitize all food contact surfaces. Keep the facility and surrounding area clean and free of litter to reduce fly and insect infestation and contamination.

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