



FOOD SAFETY INFORMATION PAPERS

Corn Refiners Association, Inc.

ENSURING INTEGRITY IN THE CORN WET MILLING PROCESS

The *Food Safety Information Papers* were prepared by the Corn Refiners Association in the late 1990s as a response to customer inquiries. A review of many of the safety measures in place throughout the corn wet milling process that help ensure that foods produced from corn wet milling are safe is presented below. For more detailed information, please see the specific *Food Safety Information Paper* referenced.

Plant Security

The safety of corn wet milled products begins with plant security. On-site security is a crucial component of the physical safety of a corn wet milling facility, including a combination of fencing, security guards and security cameras. Personnel at the facility are subjected to reference checks prior to employment. Additionally, every employee, contractor or visitor to the facilities must be positively identified at controlled access points.

Raw Materials

Corn used for wet milling is sampled and graded according to U.S. Grading Standards established by USDA. These standards specify permissible amounts of damaged kernels, broken corn and foreign material. Stones and metal are removed from incoming corn by screening through devices such as coarse wire mesh (commonly 1/4th to 3/8th inch) and passage through ferrous magnets.

Standards are set for other materials used in our processes to ensure they meet appropriate specifications for food safety and security.

Process Security

CRA member companies continuously seek ways to reduce the likelihood of incidental product contamination by implementing FDA's Good Manufacturing Practices (GMP), OSHA's Process Safety Management (PSM) program, as well as rigorous internal quality management systems that complement finished

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product testing. Facility and product risk assessments are completed and are reviewed at appropriate intervals. To ensure that the products derived from the corn wet milling process do not contribute harmful chemical residues, pathogens or other foreign matter to food products, corn refiners practice continuous in-process testing and finished product analysis. During manufacture, numerous screening and filtration unit processes are utilized to remove foreign matter from finished products to comply with FDA's particle size guidelines. Please see the *CRA Food Safety Information Papers*, "Foreign Matter" and "Pathogens".

One of the best deterrents to tampering of any kind is that corn wet-milling is essentially a closed process. This means that processing equipment, reactors and tanks are enclosed wherever possible to prevent foreign matter from entering. Buildings, structures, processing equipment and product storage areas are carefully maintained and secured.

Transportation

Concern over the safety of finished products does not end with manufacturing. Many years ago, CRA member companies developed stringent product transportation guidelines, designed to ensure that the billions of pounds of products derived from the corn wet milling process each year reach food and beverage manufacturers safely, unadulterated and with clear evidence of any attempt at tampering in transit. Developed in cooperation with the Food Products Association and food industry partners, these guidelines provide specifications of cargo tank construction and procedures for properly receiving, cleaning, loading and sealing cargo tanks. Adopted industry-wide, the *Tank Truck Inspection Guidelines* govern the safety of corn wet milled product transportation.

For more information, please see CRA's *Food Safety Information Paper* entitled, "Transportation".

Emergency Response

Corn refiners develop Risk Management Plans (RMP) in accordance with EPA regulations. Such RMP generally include:

- Offsite consequence analysis/worst-case scenario;
- Prevention program (including process hazard analysis, training, incident investigation and contractor selection criteria);
- Emergency response program (includes coordination with local emergency planning entities);
- Communication with the public.

Despite these extensive measures, the corn wet milling industry has a number of contingency plans in place in the unlikely event of tampering, or other emergencies. Product recall and retrieval systems are in place to facilitate the rapid removal of potentially contaminated products from the marketplace, which rely on lot traceability. Many companies train on-site with emergency management teams, fire and rescue, police, and other security firms.

While existing security measures ensure that the corn wet milling process is one of the safest in world, the industry is always finding safer and more efficient ways to protect the integrity of its product lines. Food safety is of the utmost importance to the corn wet milling industry.