

## ***Almond Pasteurization The Food Safety System***

With consumers' health and safety as its number one priority, the Almond Board of California (ABC) worked with the United States Department of Agriculture (USDA) to institute an industry-wide pasteurization program beginning in 2007. The purpose of this program is to ensure consumers are provided with safe, wholesome food products, free from potentially harmful levels of unsafe bacteria that can cause illness, without compromising the almond qualities that consumers expect and appreciate.

### ***Ensuring safety throughout the system***

Although the US food supply is among the safest worldwide, all agricultural products (such as meat, poultry, fruits and vegetables) are at some risk for potential pathogenic contamination. Almonds are no exception. To minimize this risk and safeguard the health and well-being of almond consumers, the ABC has implemented a number of proactive steps:

- ABC promotes good agricultural and manufacturing practices among almond growers and handlers. Resources are provided on how to minimize potential contamination while growing and harvesting almonds, and how to ensure almonds are processed, packed and sold under the most sanitary conditions. ABC works closely with growers and processors to encourage implementation of standardized food safety practices on the farm, in processing and manufacturing plants, and during transport.
- To further reduce the potential for contamination and ensure consumer safety, the almond industry, working with the USDA, developed a mandatory pasteurization program that began in 2007. Pasteurization has been proven to reduce the presence of harmful bacteria that can cause food borne illness. Independent nutritional lab analyses commissioned by the ABC indicate that the pasteurization processes adopted do not degrade the taste, quality or nutritional value of almonds.

### ***Pasteurization***

The Food and Drug Administration (FDA), along with a technical review panel comprised of almond scientific experts, are responsible for evaluating and approving the treatment processes that demonstrate effectiveness in achieving a reduction of possible contamination in almonds while not impacting their quality and sensory attributes. To date, FDA has approved oil roasting, dry roasting, blanching, steam processing and propylene oxide (PPO) processes as acceptable forms of pasteurization for almonds. Organic almonds will be pasteurized using treatments, such as steam pasteurization, that meet the USDA Organic Program's national standards. Other forms of pasteurization continue to be researched, evaluated and tested. ABC worked over several years with leading experts and weighed all perspectives and issues in developing this industry-wide pasteurization plan.

ABC worked over several years with leading experts and weighed all perspectives and issues in developing this industry-wide pasteurization plan. The process included a public comment period after which the USDA took all comments into account before making their final decision to approve the plan.

The almond pasteurization plan became mandatory for the California almond industry on September 1, 2007, and was implemented on a voluntary basis over the previous two years. All almonds must be pasteurized before being sold to consumers in North America.

***Approved pasteurization methods include:***

- Oil roasting, dry roasting, and blanching: These traditional processes provide the necessary reduction in harmful bacteria while providing consumers with the same product they have come to know and love.
- Steam processing: These treatments are surface treatments only. Multiple proprietary steam treatments are currently being utilized by the industry which meets USDA Organic Program standards. The short bursts of steam do not impact the nutritional integrity of the almond. These treatments do not “cook” proteins or destroy vitamins and minerals. The nutritional and sensory characteristics of the almonds remain unchanged when treated with steam.
- Propylene Oxide (PPO) treatment: PPO is also a surface treatment which has been approved for use on foods since 1958, and is widely used for a variety of foods such as other nuts, cocoa powder and spices. PPO is very effective at reducing harmful bacteria on almonds and poses no risk to consumers. In fact, PPO residue dissipates after treatment. The effectiveness and safety of this process was revalidated in July 2006, when PPO underwent a stringent re-registration process with the Environmental Protection Agency. The EPA confirmed that PPO poses no health risk. The treatment does not affect the nutritional and sensory characteristics of almonds.

A number of other commonly consumed foods, such as milk, juice, eggs and canned foods are pasteurized in order to ensure safety by removing bacteria that can make consumers ill. While almond pasteurization achieves this same safety factor, the steam and PPO processes used for almonds are slightly different in that they only treat the surface.

Since consumers choose almonds for their taste as well as their health benefits, to augment the government research findings the ABC has invested in independent expert and lab analyses of pasteurized and unpasteurized almonds. As stated above, those tests reveal that there is no degradation of the taste, quality or nutritional value of treated almonds.

***Labeling:***

With regard to labeling, the FDA regulates package labeling guidelines for all foods. The FDA has determined that raw almonds, whether treated via the steam or PPO methods or untreated, may be labeled raw under FDA guidelines. The ABC does not have any consumer labeling authority over almonds or products made with almonds. Individual manufacturers and retailers determine their own labeling practices based on FDA requirements.