



**CORNUCOPIA**  
I N S T I T U T E

## Fact Sheet

### Mandatory Sterilization of Raw Almonds

In response to outbreaks of Salmonella in 2001 and 2004 traced to raw almonds grown in California, the Almond Board of California and the USDA have created a mandatory program requiring all raw almonds to be **sterilized** through one of several treatment processes that the industry generously describes as “pasteurization.”

The new regulation is set to take effect on September 1, 2007. The rule was sought by the Almond Board of California and finalized on March 30, 2007. Only growers selling almonds from roadside stands will be able to sell truly raw, nonpasteurized almonds to consumers.

This new rule is controversial for many reasons. It could force family farms out of business, ignores the underlying systemic problems with conventional agriculture that cause food contamination, and is upsetting to consumers seeking organic and raw foods.

The Cornucopia Institute believes that the rule is drastic and premature, and that its implementation should be suspended to allow time for consumers to comment to the USDA.

#### Background

The rule is a response to two outbreaks of Salmonella poisoning, which sickened more than 100 people in Canada in 2001 and 29 people in the U.S. and Canada in 2004. One person died in the 2004 outbreak, and a costly lawsuit against a major almond processor ensued. The Salmonella outbreak of 2004 was traced to Paramount Farms, the world's largest supplier of pistachios and almonds, although the source of the bacteria was never identified. (Salmonella is directly associated with manure and other fecal matter).

Following the last Salmonella outbreak, the Almond Board of California (which is a marketing order and part of the USDA) initiated an "action plan" to research technologies and create rules that would prevent another contamination. Under the new regulation, California almond growers will be required to sterilize their almonds.

The most common method of treating almonds is **propylene oxide fumigation**. Other *pasteurization* methods include moist heating, oil roasting, and blanching. Organic “raw”

almonds will not be fumigated, but will undergo the moist heating pasteurization process, so that they are no longer raw.

The mandated pasteurization of all almonds is unnecessary and onerous for several reasons.

### **Questions about Safety**

Propylene oxide treatment of foods is banned in the European Union and many other countries. The substance is classified as “**possibly carcinogenic to humans**” by the International Agency for Research on Cancer. The chemical is classified as “possibly” carcinogenic only because no epidemiological studies have been conducted to assess the long-term health effects of this chemical treatment.

Propylene oxide belongs to the so-called “radiomimetic” genotoxic chemicals group, because it induces similar biological end-points as ionizing radiation. The chemical’s effects on food include gene mutation, DNA strand breaks, and neoplastic cell transformation. Pasteurization by propylene oxide treatment may indeed be carcinogenic—yet the Almond Board appears more interested in protecting almond marketers from lawsuits rather than protecting the long-term health of consumers.

Another major concern is that pasteurization/sterilization may in fact increase the risk of Salmonella poisoning if the almonds come into contact with these harmful bacteria along the path between processing and the consumer. Some scientific studies indicate that eliminating all bacteria on the surface of foods creates a sterile environment that is more likely to facilitate the survival of harmful bacteria, like Salmonella. If almonds come into contact with dangerous, pathogenic bacteria after pasteurization, the likelihood that these bacteria will sicken consumers could be higher than it would be in nonpasteurized almonds.

### **An Unnecessary Financial Burden for Small-Scale and Organic Farmers—Forcing Some Out of Business**

It is unreasonable to require small-scale and organic farms to pay the additional costs of pasteurization since they were never part of the Salmonella problem. The equipment to pasteurize almonds is very expensive. A propylene oxide chamber costs \$500,000 to \$1,250,000, and a roasting line can cost as much as \$1,500,000 to \$2,500,000. Smaller, family-operated handlers that buy almonds from small, family-owned almond growers, and cater to the organic and natural foods markets, are concerned that they will not be able to afford such expensive equipment and will be forced out of the almond business.

In addition to the costs of the chemical and steam treatments, more costs could be incurred by transporting the almonds to pasteurization facilities, as well as documenting the procedures. Many small-scale farmers sell raw almonds directly to consumers, and this additional step could be financially burdensome. Only 5% of California almonds are sold raw, predominantly in the natural foods marketplace.

While the Almond Board contends that small handlers may outsource pasteurization, it really means that small handlers will become dependent upon large corporations. Small handlers that pride themselves in getting fresh almonds to consumers quickly may have to absorb the cost of trucking the almonds back and forth from the pasteurization plant—adding expenses for as well

as environmental impacts from the extra trucking (pollution/climate impacts). All this could place them at a fatal competitive disadvantage.

### **Deceptive Labeling of “Raw” Almonds**

The new rule creates deceptive labeling. Almonds that have been roasted or blanched will be labeled “raw,” despite having undergone heating or chemical treatments for pasteurization. Consumers who purchase “raw” almonds may well think that those almonds are natural and unprocessed.

Moreover, there will be no label requirement to specify what kind of pasteurization treatment was used among the many approved methods or combination of options. For consumers who wish to avoid propylene oxide–fumigated almonds, the only option is to purchase certified organic almonds. Low-income consumers who cannot afford the price premium of organics may find their options to be less than desirable: purchase almonds treated with a potentially carcinogenic chemical, and risk the long-term health effects, or forego almonds—an exceptionally nutritional food with proven long-term health benefits.

One alternative to this new rule would be to allow for and clearly label unpasteurized almonds—protecting consumer choice.

### **The Loss of a Fresh, Nutritional Food Source**

The new rule has especially outraged members of the *raw foods community*, who believe that uncooked foods, or “living foods,” offer substantial health benefits. While pasteurized almonds that are not oil roasted or blanched will still sprout—and therefore considered “living”—many raw food consumers consider any kind of processing and heat treatment of food to be detrimental to its inherent quality and nutritional benefits.

### **The Rule Fails to Address the Dangerous and Unsustainable Practices of Conventional Agriculture**

Many small-scale almond growers use sustainable farming methods that encourage biodiversity and prevent the spread of bacteria such as Salmonella. On these farms, weeds and grasses naturally protect against pathogens, which is not true of conventional farms. Although the Almond Board insists that all almond growers use “good agricultural practices (GAPs),” these guidelines do not include provisions for eliminating pesticides or increasing biodiversity. Since organic farms are required to practice GAPs by law, and annually file a related *farm management plan* and receive annual compliance inspections, they should be exempt from the sterilization/pasteurization requirement.

Unlike milk, eggs, and meats, for which *real* pasteurization and cooking offers an important protection from food-borne illness, **no scientific evidence exists to show that almonds are an inherently risky food.** While two outbreaks may bring bad publicity and economic losses to the almond industry, it does not prove that almonds are inherently unsafe. Practically any food, raw or processed, has some risk of causing food-borne illness; it is unlikely that almonds are any more dangerous to consumers than lettuce, apples, even chocolate. Is it justified to impose these onerous regulations on an entire industry, impacting consumers, because of two relatively small

outbreaks, one of which has been traced to a giant, industrial-scale farming operation, raising 70,000 of acres of nut crops, that is by no means representative of the industry as a whole?

If all almonds now require pasteurization, what foods will be next on the list of mandatory sterilization, heat treatment, or irradiation? This may be the first step in a slippery slope toward a sterile food environment that protects processors from lawsuits and facilitates industrial-scale food processing and distribution—which is exactly the kind of environment that facilitates bacterial contamination, but does not necessarily protect consumers from illness, while offering few food choices to consumers who prefer raw and unprocessed foods.

Furthermore, future research undertaken by the USDA and the Almond Board should focus on the benefits of organic and sustainable farming in preventing Salmonella and other bacterial outbreaks—not developing technological Band-Aids to address the root causes of unhealthy food.

### **Demand Proper Participation in the Rule-Making Process**

When the USDA proposed the new rule in December 2006, it was published in the Federal Register and the Administrative Procedures Act was followed, allowing the public a 45-day comment period. To make sure the almond industry knew about the proposal, the USDA then directly contacted—by mail or fax—the nation’s 115 almond growers and handlers, inviting them to comment on the proposed rule.

While the USDA cannot be expected to individually inform all concerned consumers, it should have considered other stakeholders. Informing retailers, for example, who could have spread the word to consumers, would have been a reasonable course of action. Or they could have issued a press release that would have presumably been picked up by news and trade media outlets. They have done this when publishing other new procedures through rulemaking.

Yet the USDA made no effort to alert stakeholders other than those within the almond industry; as a result, consumers and retailers were almost universally unaware of the proposed rule. **Only 18 public comments were received from the entire country—all from the almond industry!**

By the time public awareness of the new rule spread, it was already too late—the formal comment period had closed, with not a single comment from a concerned consumer, retailer, or public interest group. Thousands of consumers and retailers, many of them outraged after learning of the new rule, now wish to voice their concerns on this issue. The USDA should reopen the comment period and allow citizens—who were previously unaware of this plan—to formally submit their comments.

### **Contact the USDA and the Almond Growers Board**

Send your comments to:  
**Secretary Mike Johanns**  
United States Department of Agriculture  
1400 Independence Ave SW  
Whitten Building – Suite 200A  
Washington, D.C. 20250  
Email: [agsec@usda.gov](mailto:agsec@usda.gov)

Mike Durnado  
USDA 1400 Independence Avenue Southwest  
Washington, DC 20250-0237  
phone: (202) 720-2419  
fax: (202) 720-8938  
Email: [Michael.Durando@usda.gov](mailto:Michael.Durando@usda.gov)

Kurt J. Kimmel  
Regional Manager, California Marketing Field Office, Marketing Order Administration Branch,  
Fruit and Vegetable Programs, AMS, USDA  
2202 Monterey Street, Suite 102B  
Fresno, CA 93721  
Email: [Kurt.Kimmel@usda.gov](mailto:Kurt.Kimmel@usda.gov)