Salmonella Enteritidis Outbreak Linked to Raw Almonds, Again

A multi-state outbreak of Salmonella serotype Enteritidis (SE) phage type (PT) 9C, linked to raw almonds, is currently under investigation. On May 12, 2004, the Oregon Department of Human Services Public Health Laboratory identified 5 cases of SE infections with isolates having indistinguishable pulsed-field gel electrophoresis (PFGE) patterns. All 5 patients reported consuming raw almonds produced by Paramount Farms (Lost Hills, Kern County) and sold under the Kirkland Signature label through Costco stores within the 5 days prior to illness onset. The association between illness and consumption of raw almonds was statistically significant when compared with estimated background rates of raw almond consumption.

A review of SE isolates submitted to PulseNet, the National Molecular Subtyping Network for Foodborne Disease Surveillance, over the past year has revealed at least 29 SE isolates from over 10 states with the outbreak-associated PFGE pattern; 3 of the SE cases were from Southern California. Case finding is ongoing and public health laboratories are conducting PFGE tests on SE isolates from 2004 and earlier, as resources permit. Onset dates of the patients identified thus far range from March 2003 to April 2004. Case-patients range in age from 11 months to 91 years (median, 41 years). At least 8 have been hospitalized; one has died. There has been at least one secondary case in a household. Most case-patients with the outbreak strain have a history of consuming raw almonds within a few days before illness onset; of these, most reported use of Costco’s Kirkland brand.

On the evening of May 18, at the request of the Food and Drug Administration (FDA) and the California Department of Health Services (CDHS), Paramount Farms issued a recall of over 5 million pounds of whole natural raw almonds sold under the Kirkland Signature, Trader Joe’s, and Sunkist brands. Recalled raw almonds of the Kirkland Signature brand are available exclusively at Costco Wholesale Inc. and are sold in 3-pound bags with “best before” dates of 8/21/04 through 2/8/05. Recalled raw almonds of Trader Joe’s and Sunkist brand have “best before” dates of 8/21/04 through 3/15/05. Recall details can be found at: http://www.fda.gov/oc/po/firmrecalls/paramount05_04.html
 Paramount Farms distributed the potentially contaminated almonds nationwide to brokers and distributors who, in turn, sold the almonds to consumers under various brand names in a variety of packaging. This could make identifying recalled almonds difficult; however, several sub-distributors have also initiated recalls. CDHS and FDA are completing recall effectiveness checks of all consignees receiving shipments of bulk product and at least 25% of all consignees receiving retail shipments. Recalled almonds were also distributed internationally (to Canada, Belgium, Mexico, Japan, Korea, Taiwan, Malaysia, France, and Italy). Processed almonds (roasted, blanched, etc.) are not subject to the recall as they are not considered to pose a risk of salmonellosis.

Costco has issued over 1,000,000 letters to customers who had purchased the recalled almonds. Local health departments may receive calls from consumers reporting illness; however, at this time, due to the extent of the recall, only those who are culture-confirmed to have SE infection with the outbreak pattern will be counted as cases. Consumers are directed to the toll free hotline number listed on the letter.

Although an unexpected vehicle for SE infections, raw almonds have been associated with SE outbreaks in the past. In December 2000, an outbreak of illnesses caused by SE PT30, an extremely rare phage type, was identified in Canada. A case-control study implicated raw almonds purchased in bulk from a Canadian natural food store chain as the source of the outbreak. Laboratory analysis of raw almonds taken from the retail stores and their central warehouse, as well as from the homes of ill persons, confirmed that the almonds were contaminated with SE PT30. The raw almonds were traced to a California supplier. Almonds and environmental samples collected from the supplier by the Food and Drug Branch, CDHS, also yielded SE PT30. There were 140 cases of SE PT30 infection with onset dates from November 2000 through May 2001 identified in Canada as part of this outbreak; 4 were identified in the U.S. In mid-April 2001, the California supplier reportedly issued a voluntary recall of raw almonds, notifying the companies it supplied in 6 states.

The specific mechanisms for contamination of the almonds in the 2000-2001 or the current 2003-2004 outbreak have not been identified with certainty. Intensive investigations are in progress to identify and remediate the problem. In an effort to address the potential contamination of this raw commodity, some processors are now treating their almonds by disinfection with propylene oxide or steam.

Of note, almonds are reportedly California's largest agricultural crop, representing 85 percent of the world's production and amounting to 1.1 billion pounds/year valued at $1.5 billion.

**West Nile Virus Update**

As of May 26, 2004, West Nile virus (WNV) activity has been detected in 18 states, with New Mexico, Ohio, and Oklahoma reporting their first activity this week. New Mexico announced the first human case on Wednesday, May 26, 2004. A second human case was reported from Arizona on Thursday, May 27, 2004. The human case previously reported in Ohio was determined to be negative for WNV infection upon further testing.

In California, WNV has been detected in eleven mosquito pools from Riverside and Los Angeles counties. WNV has also been detected in 52 dead birds from Los Angeles, Riverside, San Bernardino, and Ventura Counties. No human cases have been detected in California to date in 2004.

For additional information, please go to the CADHS WNV website: [http://www.westnile.ca.gov](http://www.westnile.ca.gov)
Raw Almond Recalls

The Food and Drug Administration is advising distributors, wholesalers and consumers that a recall of raw almonds due to reports of *Salmonella Enteritidis* that was announced by Paramount Farms, Lost Hills, CA, on 5/18/04 has expanded. Before eating any raw almonds having a "best before" date of 8/21/04 or later, consumers are advised to check with the store where they purchased the product to see if the almonds came from Paramount Farms. FDA has learned that Paramount Farms distributed the recalled almonds in bulk or packaged nationwide to brokers, distributors and grocery store chains which in turn sold the almonds to consumers in a variety of package sizes with a variety brand names. The almonds were also distributed to Mexico, Japan, Korea, Taiwan, Malaysia, France, England and Italy.

Individuals who have purchased the recalled raw almonds should not consume them but instead return them to the place of purchase for a full refund.

**FDA Press Release:**

Bucks County Distributors Recalls California Dyno-Trail Mix (*June 14, 2004*)

Certain Germack Brand Almonds Recalled Due to Potential Contamination (*May 25, 2004*)

FDA Issues Alert on Additional Recalled Stocks of Paramount Farms Raw Almonds (*May 21, 2004*)

**Company Recalls:**

Royal Food International Recalls Almond Raw because of Possible Health Risk (*June 16, 2004*)


Royal Food International Recalls Almond Raw Because of Possible Health Risk (*June 10, 2004*)

Sahadi Fine Foods Inc. Recalls Shelled Almonds Because of Possible Health Risk (*June 10, 2004*)

Apple Valley Natural Foods Recalls Raw Whole Almonds (*June 9, 2004*)

Fort Fudge Shop Recalls Vanilla Nut Fudge (*June 8, 2004*)

Jeppi Nut and Candy Company Almonds Recalled (*June 7, 2004*)

Anton-Arigi, Inc. Recalls Argires Brand Tropical Mix (*June 4, 2004*)

Kanan Enterprises Recalls Raw Whole Almonds (*June 4, 2004*)

Jacks Markets Recalls Raw Almonds (*June 3, 2004*)

Kastoria, Inc. Recalls Oasis Brand Almond Garlic Spread Because of Possible Health Risks (*June 2, 2004*)

American Spoon Foods Recalls Cherry Nut Mix and American Spoon Bar Mix Due to the Possible Contamination with Salmonella (*June 2, 2004*)

Cherry Republic Recalls Raw Whole or Diced Almonds (*June 2, 2004*)

Barcelona Nut Company Recalls Barcelona Nuts Due to the Possibility of Contamination with Salmonella Enteritidis (*June 2, 2004*)

Metropolitan Market Expands Recall of Whole Raw Almonds Because of Possible Health Risk (*June 1, 2004*)

Royal Candy & Nut Co. Recalls Raw Whole Almonds and California Mix (*June 1, 2004*)

Harvest Health Foods Recalls Raw Almonds (*May 28, 2004*)

Mr. Nature Recalls Mr. Nature Raw Whole Almonds (*May 28, 2004*)
Del Laurenti Specialty Food Store Recalls Raw Whole Almonds Because of Possible Health Risk (May 28, 2004)

Superior Nut and Candy Recalls Raw Whole Almonds (May 28, 2004)

Larry's Markets Recalls Bulk Bin Almonds Because of Possible Health Risk (May 28, 2004)

Pacific Seasonings Recalls Almonds Due to Potential Health Risk (May 27, 2004)


St. Laurent Brothers Recalls Raw Whole Almonds (May 27, 2004)

Whole Foods Market Recalls Almonds Because of Possible Health Risk (May 27, 2004)

Metropolitan Market Recalls Whole Raw Almonds Because of Possible Health Risk (May 27, 2004)


Koeze Company Cooperates with Paramount Farms Expanded Recall of Natural Raw Almonds (May 27, 2004)

Almond Recall Due to Possible Health Risk (May 27, 2004)

GKI Foods Inc Recalls Milk Chocolate English Almond Toffee, Milk Chocolate Jumbo English Almond Toffee, and Gourmet Sugar Free English Almond Toffee, Because of Possible Health Risk (May 26, 2004)

Due to Paramount Farms Recall of Raw Almonds Awrey Bakeries, Inc. Recalls Tropical Chocolate Cake (May 25, 2004)

Bear Foods Market Recalls Raw Almonds and Raw Almond Products Due to Possible Health Risk (May 26, 2004)

Thrifty Products Co. Recalls Thrifty Nuts Due to the Possibility of Contamination with Salmonella Enteriditis (May 26, 2004)

Ferris Coffee & Nut Company Issues Recall on Raw Almond Products Due to Possible Contamination (May 25, 2004)


Paramount Farms Announces Nationwide Recall of Whole National Raw Almonds (May 18, 2004)