

Seed to supermarket

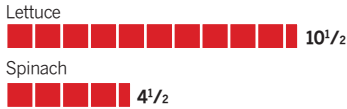
Fresh Express, the No. 1 maker of packaged salads, is considered an industry leader in food safety. Fresh Express processes 1.2 billion pounds of raw lettuce and spinach a year. It buys lettuce and spinach from growers, who must meet certain standards.

Here's the production chain, and some of Fresh Express' safety measures:

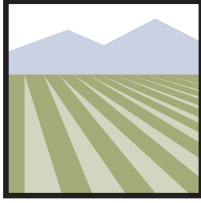
1 Growing

Fresh Express gets most of its product from California's Salinas Valley. Fields and operations are inspected three times each crop cycle.

Growing times (in summer, weeks)



Nearly ready: Executive Vice President Jim Lugg inspects heads of iceberg lettuce for harvest in Salinas, Calif. Jack Gruber, USA TODAY



Fields

Fresh Express won't accept produce from fields if:

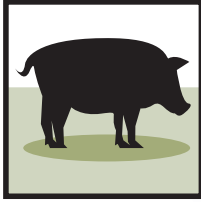
- ▶ They're within one mile of a cattle feed lot or dairy operation. Cattle operations may cause E. coli to get into runoff water and onto a field, especially during floods.
- ▶ They've been flooded within five years.
- ▶ They're within several hundred feet of a cattle pasture.
- ▶ They're within 150 yards of rivers, or habitat that attracts wildlife that may spread contaminants.
- ▶ They catch water runoff from cattle pastures.



Water

In Salinas, Calif., well water irrigates fields and is drawn from aquifers 800 to 1,000 feet below ground.

- ▶ Water is tested monthly for pathogens during the growing and harvesting season. Before the recent E. coli outbreak, water was tested at least three times a year.



Animals

Because animals can spread E. coli, tracks in a field make that part of the field unfit for harvest. Often, 30% to 40% is affected. Two years ago, Fresh Express stopped buying lettuce from Florida because growers couldn't keep frogs out of the crop, which then had to be destroyed. To protect fields:

- ▶ Rodent traps, checked daily, are set about 50 feet apart along the field's edge. Carbide cannons, which sound like shotguns, are set off by timers to scare off birds.
- ▶ Fences may be required to keep out deer, wild pigs, cattle and other animals. Evidence of wild pigs makes land unharvestable for two years.
- ▶ Workers' dogs are not allowed in fields or in trucks.



Fertilizing

Fresh Express prefers growers use cover crops to add organic matter. Crops such as wheat and barley are planted but plowed under before harvest.

- ▶ Raw animal manure is banned because it may contain E. coli.
- ▶ Composted animal manure is being phased out because of fear that bacteria may survive fermentation and heating.

2 Harvesting

Spinach is typically harvested between 2 a.m. and 6 a.m., when cooler temperatures help keep product fresh. Lettuce, which is hardier and is a bigger crop, is typically harvested in the morning and afternoon.



Iceberg lettuce

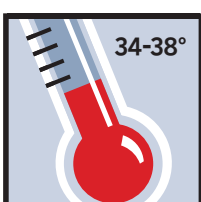
- ▶ Worker cuts lettuce from root.
- ▶ Outer leaves taken off.
- ▶ Core cut out.
- ▶ Each head is placed onto tray and a water jet sprays the cut area, where bacteria can cling.
- ▶ Lettuce goes up a conveyor belt, is sprayed with chlorine-based solution for cleansing and goes into plastic-lined bins on truck. Plastic liners are used only once.



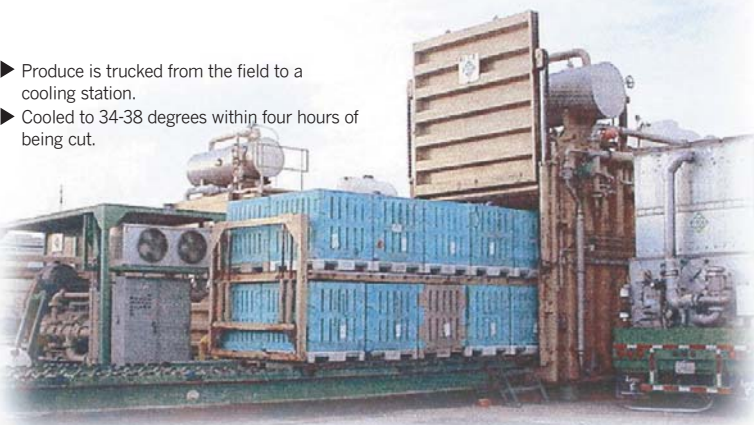
Workers

- ▶ Workers must wear gloves, hairnets, aprons, long sleeves so that no skin touches produce.
- ▶ Portable latrines with water for hand-washing must be within a 5-minute walk, or 1/4 mile, from workers. One latrine is needed for every 20 employees of each gender.

3 Cooling



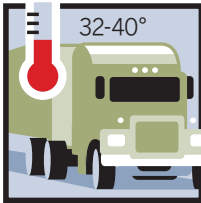
- ▶ Produce is trucked from the field to a cooling station.
- ▶ Cooled to 34-38 degrees within four hours of being cut.



Staying cool: Produce is removed from a cooling station. Fresh Express

4 Shipping to process

Produce is trucked from cooling stations to Fresh Express processing plants in Salinas, near Dallas, Chicago, Atlanta and Carrollton, Ga.



- ▶ Trucks are cooled to 36 degrees and are swept and hosed down before loading.
- ▶ Temperatures inside the trailer are monitored. If temperatures aren't kept above 32 degrees and below 40 degrees, produce is discarded. Salinas Valley to Atlanta is the longest drive, about 66 hours.

5 Processing

Iceberg lettuce is the largest-volume product. No hand, even gloved, touches the lettuce.



Safety measures

- ▶ Workers wear gloves, gowns, hairnets and hard hats.
- ▶ Gloved hands go through a hand-sanitizer rinse.
- ▶ Trays filled with ammonia-based solutions are spaced throughout the plant so workers disinfect soles of shoes.
- ▶ Packaged produce is washed and rinsed several times with chlorinated water, which the industry says removes 90% to 99% of microbes, including bacteria.



Keeping clean: Gloved hands go through a hand-sanitizer rinse. Fresh Express

How iceberg lettuce is processed

- ▶ Cut automatically.
- ▶ Drops into agitating chute with chlorinated wash water.
- ▶ Goes up conveyor belt where water drains off.
- ▶ Drops into another agitating chute with chlorinated water. Sprayed with water from above.
- ▶ Moves to another conveyor belt where produce is sprayed from above and water drains off.
- ▶ Dried and bagged.

6 Shipping to customers

Produce is on supermarket shelves within 24 to 72 hours of harvest.



- ▶ Bagged salads, packed in boxes, go into trucks that have been swept and cooled to 36 degrees.
- ▶ Trailer temperature is monitored throughout the drive. If temperatures aren't kept above 32 degrees and below 40 degrees, produce is discarded.
- ▶ Trucks are locked until unloaded at a customer's distribution center.

SAFETY/ Standards already are in place

From Page 1

Fresh Express launched the packaged-salad industry in 1989 and makes 40 percent of the packaged salads bought in most U.S. supermarkets.

Dole Fresh Foods, which also produces packaged salads, also has several measures in place for its lettuce and spinach growers, said company spokesman Marty Ordman.

Among other things, the company's growers are audited for water quality, equipment is sanitized and fertilizer is tested, Ordman said.

"We do have these and other specific measures to make sure the product that consumers buy is of the safest quality," Ordman said. "We are absolutely committed to food safety in all our products."

'Leads the pack'

The Fresh Express company, which Chiquita Brands International bought last year, has spent decades crafting and tightening what it says are the most stringent food safety standards in the leafy green industry — a claim supported by at least one of the industry's most ardent critics.

"From what I've seen, Fresh Express leads the pack," in terms of food safety, said Michael Doyle, director of the University of Georgia Center for Food Safety and a longtime advocate of tougher regulations for the packaged-salad and fresh-cut produce industry.

Doyle won't eat packaged salads. He said the packaging process, including the mixing of leafy greens inside a processing plant, increases the risk of contamination.

Other food safety experts say consumers washing produce at home adds more risk.

Fresh Express had no product recalled as part of the E. coli outbreak. Yet it and other area packaged-salad companies are suffering just the same.

Sales of packaged salads tanked 30 percent industry-wide after news of the outbreak hit Sept. 15, and sales remain 15 percent to 20 percent below normal, said Fresh Express President Tanios Viviani. "We are guilty by association," he said.

But Viviani says not all bagged salads are the same, and not all companies follow the same standards.

While the U.S. Food and Drug Administration regulates processing plants, growers are largely policed by themselves or by companies such as Fresh Express and Dole that buy their produce.

"There's a real diversity in

the industry, and it really does matter how it is done," said Michael Osterholm, a University of Minnesota expert on infectious diseases and public health.

Osterholm has been a paid consultant to Fresh Express since 1999. He said it is the only food company he consults with because it's made a major commitment to food safety and quality.

"I'm not here to help them sell more produce," Osterholm said. "We want the Maytag Repairman Syndrome here. We don't want another outbreak."

Anticipating risks

Fresh Express buys lettuce and spinach from 49 growers in California, Colorado, Arizona and Mexico.

Most of its product comes from the Salinas Valley, the nation's No. 1 producer of leafy greens.

Lugg, a 43-year industry veteran, said 70 percent of the food-safety risk occurs before produce gets to a processing plant, starting with how and where it's grown.

Before Fresh Express contracts to buy crops from growers, growers must complete a five-page questionnaire that details everything from the water used to irrigate crops to how growers keep birds off fields to whether worker toilets are cleaned by growers or service companies.

"We prefer an outside company because we know the (toilets) are getting done, and the records are on the door," said Lugg.

Preventing contamination is key because washing lettuce or spinach in a processing plant doesn't remove all microbes, including bacteria.

Also, E. coli can contaminate produce through water absorbed by the roots. That means no amount of washing can eradicate contamination.

Lugg said the company's requirements have grown with the years and with each E. coli outbreak. Since 1995, fresh lettuce or spinach has been associated with 20 E. coli O157:H7 outbreaks, the FDA says.

Each safety step adds costs. Fresh Express products, including packaged lettuce, spinach and blends, sell at the retail level for about \$1.49 to \$3.49, 5 percent to 10 percent more than competing products, said Viviani, Fresh Express' president.

Two years ago, Fresh Express started requiring companies that harvest the crops to swab equipment after it was hosed down and disinfected to make sure it was clean.

Because of the extra swab test, Fresh Express' major harvester required extra payment, Lugg said.

"We are the most expensive player in the valley, and we will always be the most expensive," Viviani said.

Ordman of Dole said his company's safety procedures are continuously under review.

Dole's safety measures, he said, are "as stringent as possible and have been stepped up in accordance with latest news."

Investigation continues

The FDA, California officials and the FBI are still investigating the E. coli outbreak.

All of the tainted spinach was processed by Natural Selection Foods of San Juan Bautista. The spinach was recalled.

The match between the E. coli in the manure on one ranch and the E. coli in the tainted spinach, while an important finding, doesn't prove that the manure was responsible for the outbreak, investigators say.

Nor do they know how the spinach was contaminated, although they're examining the possibility that wild pigs may have spread the bacteria as they foraged.

Nothing has been ruled out, they say, including flooding, or wildlife than pigs, irrigation or poor worker hygiene.

Three other ranches are also being investigated.

Since the outbreak, Fresh Express has stepped up water-quality testing.

It is considering fencing for more fields and whether 500 feet should be the formal minimum for spacing between crops and pastures.

Jerry Rava, owner of Fresh Farms in King City, has grown for Fresh Express for 18 years. He grows almost all of the company's spinach and said he has no field within 500 feet of a cattle pasture.

Over the years, Fresh Express has refused produce from parts of fields because wild pigs have stomped through them and because nearby brush may have attracted wildlife.

He's given up dogs as field companions because they may defecate in fields. And he swabs down harvest equipment at the end of each day, even though he has not once found that it needed to be cleaned.

"They pay a premium," he said. "But they require more."

GANNETT NEWS SERVICE and Salinas Californian staff writer VICTOR CALDERON contributed to this report.

FAITH/ Consumers need reassurance

From Page 1

A PMA survey completed in October by 1,000 respondents who purchase groceries for themselves or a household showed 37 percent don't know when they will resume purchasing bagged spinach. Means said that number is troubling and an indication that the industry must help reassure consumers about the safety of salad greens.

"I don't like to see that kind of uncertainty in the consumer," she said. "That's where I think we need to have an impact."

That same survey, Means said, also showed a significant change in consumer attitudes toward spinach safety between September, when the FDA issued its warning, and October, when fewer consumers said they would never buy spinach and considered it unsafe.

Forty-eight percent of respondents said they had confidence in food safety after Salinas-based The Nunes Co. voluntarily recalled some of its Foxy brand green leaf lettuce because of possible E. coli contamination in October, she said.

"They need to be reassured that we are doing our job," Means said.

Awaiting investigation's end

and what they need to know about food safety to overcome any hesitation about buying fresh, bagged leafy greens.

The details of the marketing campaign are not finalized, and officials say it likely won't start until the FDA concludes its investigation into the outbreak.

Amy Philpott, vice president of marketing and industry relations for United Fresh Produce Association, based in Washington, D.C., said her organization and several other industry groups have been meeting to outline a publicity plan.

"We're talking mostly (public relations) strategies," Philpott said.

The program, she said, will have different messages for food service customers, such as restaurants; buyers for retail stores, such as supermarkets; and consumers, but will underscore in each message the safety of leafy greens.

"(Growers) need to reassure consumers they are taking a second look or a closer look at what might have gone wrong and how to prevent that in the future," said Jill Hollingsworth, vice president of food safety for the Food Marketing Institute, which represents retailers.

Last week, the nation's largest supermarket chains gave produce growers until Dec. 15 to establish new safety rules to prevent E. coli outbreaks. Meanwhile, Western Growers has proposed a set of "best practice" regulations for California growers, which the ag

industry must endorse and which would be enforced by the state Department of Food and Agriculture.

Tim Chelling, vice president of communications for Western Growers, said the guidelines are a "big deal" and part of the industry's overall efforts to show it's addressing food safety concerns.

TV campaign unlikely

Means said it's unlikely a nationwide marketing campaign for produce will feature a catchy television campaign like the dairy industry's "Got Milk?" campaign or pork's "The Other White Meat" commercials. Produce groups don't usually advertise that way and don't always have the resources to launch an expensive television commercial blitz, she said.

What the produce industry's marketing effort will do, Means said, is complement many regional campaigns, such as New Jersey's "Jersey Fresh" promotion encouraging people to eat New Jersey-grown spinach.

The major trade groups working on the marketing campaign — the Grower-Shipper Association, PMA, United Fresh Produce Association and Western Growers — also are drawing up more stringent food-safety rules in consultation with the federal government.

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