

California FARMER

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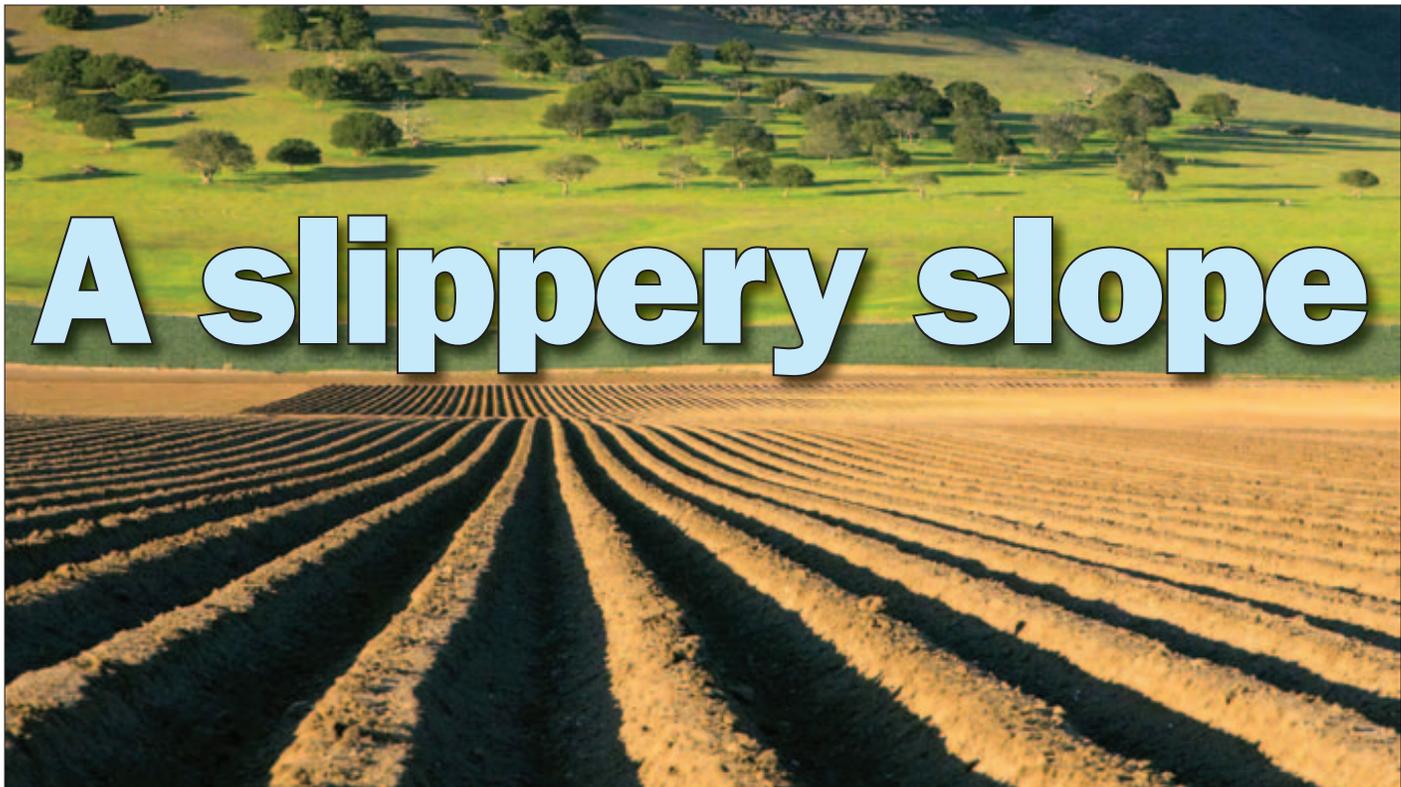


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A slippery slope

FAST TRACK: The spinach field on the Paicines Ranch is bordered to the north by a cattle pasture that slopes upward from the field — a potential *E. coli* fast track.

By **CHUCK BENBROOK**

WITH new food-safety practices in place and state inspections beginning this month, let's consider possible causes of the *E. coli* O157 outbreak and lessons learned — and relearned.

The strain of *E. coli* O157 isolated in patients stricken during the September outbreak was found in bags of Dole baby spinach. The fresh-cut spinach was grown and packed under contract by Natural Selection Foods, best known for its Earthbound organic produce.

Since the outbreak, the Food and Drug Administration

Key Points

- Cattle on the Paicines Ranch were likely contagion source.
- Dust can carry *E. coli* O157 bacteria long distances.
- Irrigation can create ideal conditions for O157 growth.

and the California Department of Health Services has carried out a mammoth investigation. Their final report includes:

- No water, raw spinach or finished product from the San Juan Bautista plant where the Dole spinach was processed tested positive.
- Cases were traced to raw product processed during one

shift. Records show spinach from four fields in Monterey and San Benito counties was processed on that shift.

■ *E. coli* O157 was found in samples collected near each of the four fields, but the exact strain was found only near the Paicines Ranch field.

■ The field was leased to Mission Organics and was transitioning from conventional to organic production.

The Response Team conclusion: "No definitive determination could be made regarding how *E. coli* O157:H7 pathogens contaminated spinach."

The report says three possible problems could have trig-

gered the 2006 outbreak.

1. *E. coli* O157:H7 moved to a field in ample amounts late enough in the season to contaminate at harvest.

2. The harvest crew missed signs that wild pigs were in the field.

3. The processing plant failed to find the bacteria.

Cattle grazing at nearby Paicines Ranch are the most likely source of the bacteria involved in this outbreak. A spinach field on the ranch is bordered by a pasture that slopes upward from the field.

E. coli O157 can persist for three or more months in the soil; thus, spring runoff is a

plausible cause.

Also, dust can carry *E. coli* O157 long distances, and summers in the Salinas Valley are dry. A layer of dry manure was likely on the ground nearest the spinach field, where cattle may have gathered in winter and spring for water and salt. Farm activity could have stirred dust, blowing it onto the spinach.

Sprinkler irrigation was likely applied, creating ideal conditions for O157 growth.

Benbrook, Ph.D., is chief scientist at The Organic Center.

■ **Goto www.CaliforniaFarmer.com for the complete story. See a related story on Page 6.**

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