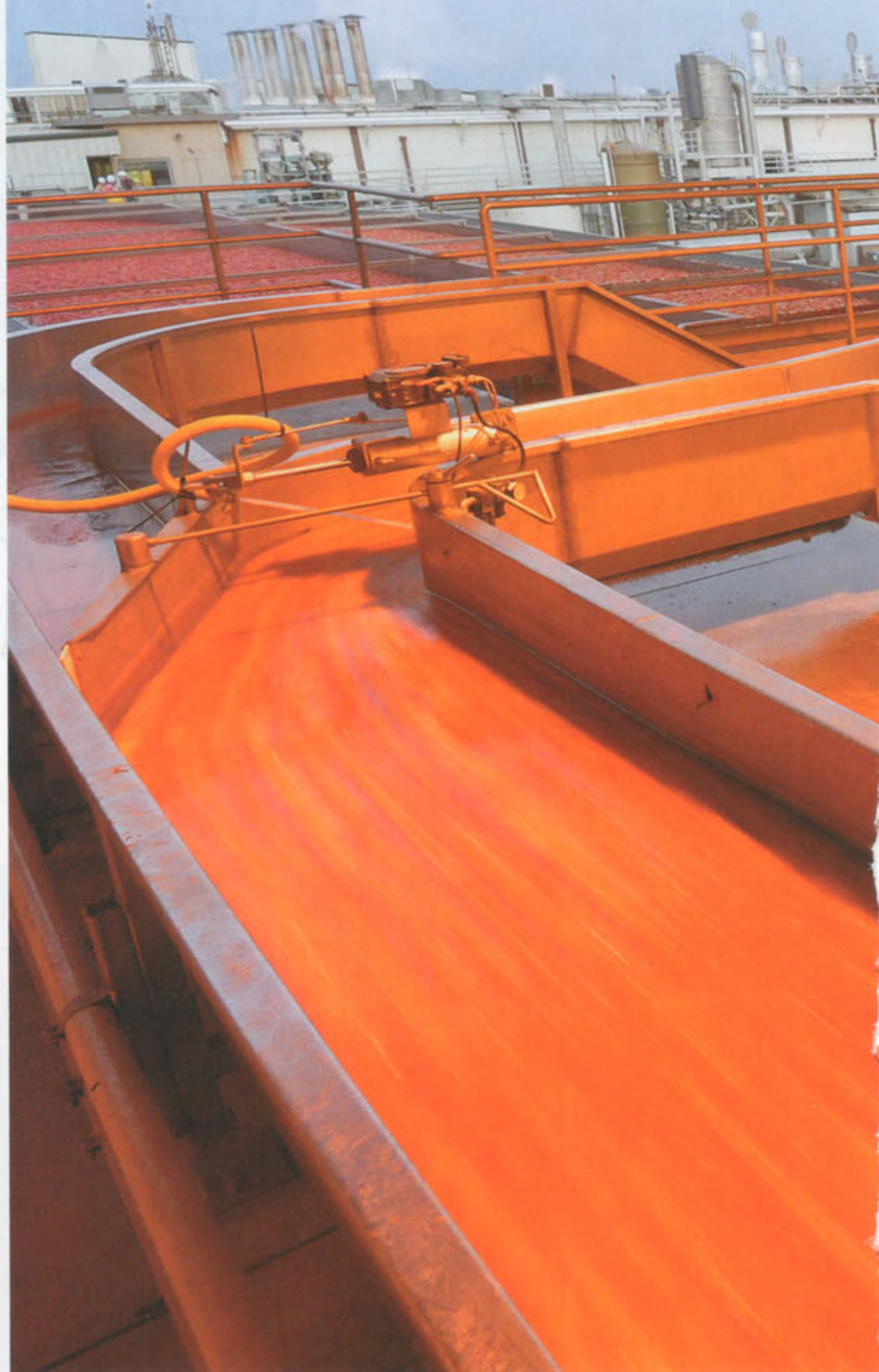


Nothing quite showcases the industrial bounty of California agriculture like a vast field of tomatoes baking in the August sun. A rich, dusky red emanates from beneath the curled, dying leaves. A nearly two-story-tall mechanical harvester run by the Morning Star tomato-processing company clatters through the Sacramento Valley field. As the machine hums along at about three miles per hour, it uproots two rows of plants and lays them on a belt that conveys them to the top of the harvester, where the vines are sucked through a shredder and blown back onto the field as the tomatoes cascade onto other belts. Electronic eyes send signals to plastic fingers that pop out anything not red or green. Dirt clods, last year's squash and the errant toad and mouse tumble to the ground. The ripe fruit is funneled into a tandem trailer. In ten minutes, the machine gathers more than 22,000 pounds of Roma-type processing tomatoes.

I get into a pickup truck with Cameron Tattam, a Morning Star supervisor, and we follow a semitractor that hooks up to the trailer, pulls out of the field and then barrels down Interstate 5 to a Morning Star cannery outside the town of Williams. This 120-acre facility is the largest of its type in the world. During the three months of the local harvest, it handles more than 1.2 million pounds of tomatoes every hour. The tomatoes I just saw getting picked are washed down a stainless steel flume and plunged into a 210-degree cooker. The heat and pressure blow them apart. After passing through evaporators and cooling pipes, they will end up three hours later as sterile-packed tomato paste in 3,000-pound boxes. For the next two weeks, the facility will produce nothing but paste that is destined to become Heinz ketchup. Among Morning Star's other large customers are Pizza Hut, Campbell's Soup and Unilever, maker of Ragu.

Processing tomatoes—condensed or canned—make up 75 percent of the tomatoes that Americans eat. Farmers think of them as an entirely different crop than fresh-market tomatoes. The variety that Tattam and I watched being harvested is a hybrid called Heinz 2401. It was bred to maximize yield, with thick-skinned, fleshy fruit that ripen simultaneously so they can be picked all at once and withstand a machine's rough handling. Its genes maximize the conversion of solar rays into sugars and solids. These tomatoes have thin cavities, or locules, where the seeds and juices—and many flavors—are stored. There is little point in having a lot of volatile flavors in a processing tomato because cooking boils them off, and, besides, much of the flavor of ketchup and tomato sauce comes from whatever the tomatoes are mixed with. The Heinz 2401 is also bred for resistance to tomato pathogens, of which there are many: beetles and nematodes, fungi such as fusarium and verticillium, and viruses such as yellow leaf curl and spotted wilt, which are carried in the

Heirlooms get the glory, but consumers eat mostly processed tomatoes. At a Morning Star plant in Los Banos, California, Romas in fast-moving flumes are sorted by color before being canned, sliced, diced or concentrated.



wind, the soil or the mouths of pests such as whitefly and thrips. Because it doesn't really matter what processing tomatoes look like, they require fewer applications of pesticides than do fresh-market varieties. The Romas I saw being harvested had been sprayed only once.

There's something a bit brutal about the production methods exemplified by Morning Star's operations, which are all about maximizing yield and efficiency. But the industrial tomato has its place, even if foodies turn up their noses at it. "You want us to be out there with hoes, like in a third-world nation?" Tattam says. "How else are you going to feed 350 million people?"

The next day I drive 30 miles south to the live-oak-shaded compound of Full Belly Farm, a small operation in the Capay Valley. An organic farm that grows up to 100 crops, including 25 tomato varieties, it couldn't be more different