

Waste Watchers

That \$20 Cobb salad you're eating may have been grown in compost made from scraps of the \$20 Caesar salad you ate last year BY ELIZABETH ROYTE

FOR THREE DECADES, starting in the 1930s, Atilio Olcese drove up to San Francisco from his San Mateo County farm seven nights a week. Working from 9 P.M. until 3 A.M., he dumped cans of food scraps from city markets and restaurants into the back of his truck, then drove back down to Daly City, bleary-eyed, and fed his 10,000 hogs. In 1968, zoning regulations forced the Olcese family to move their pigs to the Central Valley, but Al Olcese, Atilio's son, continued to collect their rations in Chinatown, Fisherman's Wharf, North Beach, and Treasure Island. "Al was the last of the Mohicans, picking up all that food," says his sister, Marilyn Olcese. Al lasted another 28 years, then decided the economics of the swill route simply weren't worth it. He bequeathed his contracts to the Golden Gate Disposal & Recycling Company, which in 1996 was looking for ways to reduce the amount of wet and heavy scraps headed over the hills, across the bay, and into giant landfills owned by a competing waste-management company. Like others who worked in ag-

riculture, Al Olcese knew that vast quantities of potato peels and carrot tops were too valuable to bury in the ground, but he never imagined they'd someday be fetishized by foodies.

Today, Golden Gate Disposal and its sister company Sunset Scavenger Company (both owned by Norcal Waste Systems, Inc.) collect 300 tons of food waste a day from the back stoops and loading docks of San Francisco's four-star restaurants, food markets, and microbreweries. Norcal's transfer company, SF Recycling & Disposal, trucks the scraps 75 miles to Jepson Prairie Organics, also owned by Norcal, which transforms them over a period of months into "Four Course Compost." The fertilizer is sold to area farms, and the farms, in turn, sell their organic food and wine back to grateful restaurants. Give anyone a chance along the circle of scraps, and they're likely to announce that they're closing the loop. >

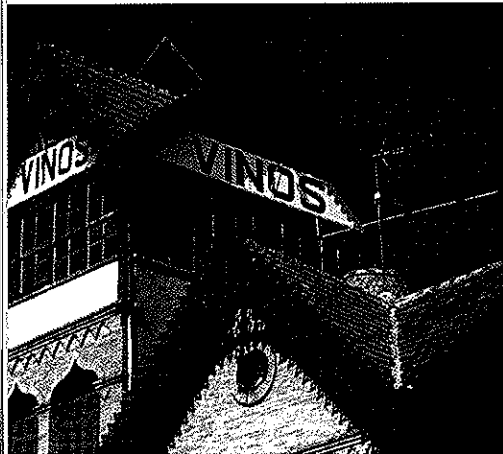
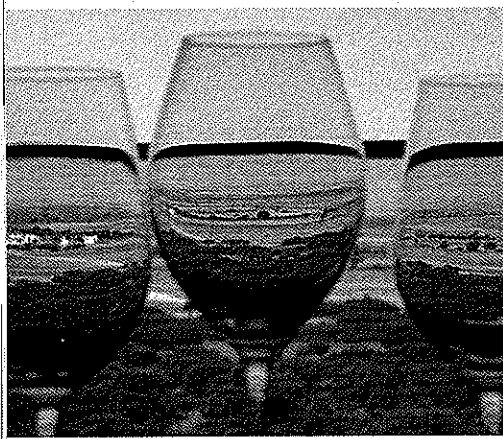
Steam rises from finished compost—created out of food scraps from San Francisco restaurants and markets—at a Sonoma County vineyard.

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ECO WATCH

On a balmy winter morning, the air wafting around Jepson Prairie's 15-acre compost operation smells only slightly piggy. Accompanied by general manager Greg Pryor, who stands six-foot-six and has wheat-colored hair and a goatee, I wander through the yard as big trucks dump food waste into a pile, which is then fed into a grinder that spews small chunks into another, slightly smaller pile. I make out parsley tops, orange peels, apples past their prime, cardboard, and coffee grounds.

There is a chance that the eggshells and bread crusts at my feet are the remnants of high-class restaurants like Zuni Café, The Slanted Door, and Greens, but the organic matter could just as easily be bedding straw from UC Davis's veterinary barns, or even food scraps from the state prison at Vacaville, which makes a four-ton drop five days a week. A front-end loader begins to mix scoops of food with yard waste (which includes leaves, pumpkins, Christmas trees, and grass clippings), then dumps them into the hopper of a bagging machine. With a 48-horsepower push ram, the machine stuffs would-be compost into a 200-foot-long, 10-foot-wide Ag-Bag made of black PVC. "It's like stuffing a sausage," Pryor says.

As the organic material inside the tube decomposes, the temperature climbs, ultimately reaching 140 to 150 degrees. "We need to get one hundred and thirty-one degrees for three readings in a row," Pryor says, in order to nurture thermophilic organisms. "From ninety to one hundred and twenty-one degrees is the mesophilic range. Bugs like that. The pathogens are killed at one hundred and thirty-one. Let it get too hot and you kill the good ones." He regulates the temperature with a blower, which forces air through four-inch perforated pipes that run the length of the tubes.

After a month in plastic, the compost is released into long windrows that cure in the California sunshine for another month. A turner worms its way down the row every three days to aerate it. At this stage the compost looks rough—more like mulch and uncut tobacco than a fine loamy soil. It smells earthy, of fungus and rot and mold, which take the shape of orange blobs and lacy white frills. It's the basis for new life, this evidence of death.

Cured and screened, the compost will be sold to wineries like Alexander

Valley Vineyards and Bouchaine Vineyards, to Terra Firma and Earthbound organic farms, and to area landscape suppliers at \$5 to \$10 a cubic yard. "That's a good price, and it's good quality," Pryor says. Before I leave the area, he brings me to Eatwell Farm, which spreads about 500 yards of Four Course a year over 70 bucolic acres. We pull into the farm's muddy driveway, and an unshaven man in wire-rim glasses, felt hat, dirt-stained canvas jacket, and Wellingtons greets us, but barely. This is Nigel Walker, Eatwell's founder. Sipping from a mug, he wearily runs through his inventory: "I grow sunflowers, lavender, alfalfa, apricots, nectarines, peaches, plums, and a lot of vegetables." The compost, which he applies after every crop, he says, is "a little hot," meaning it has a high nitrogen content—that's because of the food in it. "I think of the soil as a fire: You add a little compost, you stoke the fire. In five years, it's roaring away." Crates of Walker's butternut squash are headed for Greens this very day, and boxes of rutabagas and garlic are destined for San Francisco's bustling Ferry Plaza Farmers Market, along with small jars of rosemary salt and lavender honey.

"A lot of San Francisco restaurants buy produce that's grown in their own compost," Pryor says, and I cringe in anticipation of what he'll say next. "We're closing the loop!"

IT'S HARD TO ARGUE WITH COMPOST.

Converting foods scraps and other organic waste to fertilizer improves soil health, water quality, root penetration, temperature stabilization, and topsoil stability. It reduces the need for chemical additives, and it nourishes our fruits and vegetables.

But businesses don't cook up rotting food only because it makes people feel virtuous. For Norcal, separating food scraps from other rubbish is a way to avoid having to take wet and heavy stuff to the landfill (the one owned by Norcal's competitor), and a way to keep recyclable soda bottles and tin cans, which have value to Norcal, somewhat cleaner. Diverting banana peels to compost bins also has a profound effect on the inner workings of landfills. In the oxygen-starved confines of a dump, anything that was once alive—from baby spinach to baby's-breath bouquets—is going to rot. As organic material decomposes, it produces leachate



Trucks bring 300 tons of food waste a day to Jepson Prairie Organics; finished compost is applied before vines go in at Bouchaine, in Napa.

(the contaminated liquid gunk that courses through landfills) and methane, a potent greenhouse gas. In fact, landfills are the largest man-made source of methane emissions in the United States. But material that's composted properly emits virtually no methane.

In an attempt to save valuable space in dumps that are difficult, if not impossible, to expand, 21 states have banned yard waste from burial. From excluding yard waste to excluding kitchen scraps is a small but radical step. Many towns and cities, including Monterey, Los Angeles, Seattle, Toronto, and Portland, Oregon, are currently experimenting with the collection of commercial and/or residential food waste. The potential for diverting organics from dumps is enormous: According to the EPA, food scraps and yard waste make up 25 percent by weight of the municipal solid-waste stream. Add wood and paper, and the total of compostable material goes up to 67 percent. San Francisco has made much hay with its "closing the loop" message. The program has reduced by 90 percent the volume of trash at some produce markets and restaurants, and has sliced some garbage bills in half (Norcal charges less to collect organics than it does to collect non-recyclable waste).

But large-scale composting has its problems. Jepson Prairie, despite its evocative name, is a full-on industrial operation,

COMPOST FACTS

Number of states that have banned yard waste from landfills: 21

Tons of compostable waste generated daily by Hunts Point Terminal produce market, in New York City: **66**

Tons of greenhouse gases that would be eliminated annually by anaerobic digestion, rather than burial, of New York City's organic waste: **1.8 million**

Kilowatt hours of electricity that would be generated annually by anaerobic digestion of New York City's organic waste: **1.4 billion**

Tons of organic waste New York City sends to landfills each year: **11 million**

Percentage of municipal solid waste made up of food waste and yard trimmings: **25**

replete with grinders, bulldozers, front-end loaders, transfer trailers, and turners, plus a fleet of heavy trucks that run on diesel, spew particulate matter into the air, and tear up the roadways (Norcal is gradually replacing older diesels with liquid-natural-gas vehicles). It's a far cry from my front-yard composting bin, or even a modest operation like Chez Panisse's, in which food scraps from the Berkeley restaurant are dropped off twice a week at Bob Cannard's farm in Sonoma. Cannard grows *mâche*, kale, bok choy, mustard greens, and radicchio that he sells back to—you got it—Chez Panisse.

And then there's the odor. The smell that wafts through the air at Jepson Prairie troubles its neighbors, especially in the summer, and it troubles California's increasingly powerful Air Resources Boards. The odor derives from volatile organic compounds (VOCs) released by decomposing food; these include ammonia, seven stinky kinds of fatty acid, aldehydes, and alcohols, most of which contribute to air pollution.

CALIFORNIA HAS THE MOST STRINGENT air-quality standards in the nation. In counties south of San Francisco, the state has begun to look into clamping down on methane and VOC emissions from dairy farms, which compost their manure. San Francisco itself is a bystander so far, but Norcal sees the writing on the wall. More than 2,200 businesses and 75,000 households participate in its food-recycling program; between 2002 and 2004, sales of Four Course Compost increased by 37 percent. But Jepson Prairie has only so much space in which to form its windrows. It recently won approval to expand operations to accept 600 tons of food waste a day, twice the current throughput. But according to the project's draft environmental-impact statement, the expansion would put as many as 23 transfer trucks on the road, each making a 120-mile round-trip. The region's air board allows the site to emit no more than 82 pounds of VOCs daily, so Jepson can only expand as fast as the technology allows. Sucking air from the compost and running it through a biofilter would cut emissions significantly, but they would still top the threshold, and this type of mitigation would be expensive. Among other things, the company is experimenting with bacteria—found in lagoons—that break down VOCs.

Jepson Prairie is under a lot of pressure to serve the city and to make a good product, and San Francisco is under pressure to meet state recycling and (Continued on page 262)

GRAINS

Continued from page 240

QUINOA AND BULGUR SALAD WITH FETA

SERVES 4 (SIDE DISH)

Active time: 20 min Start to finish: 40 min

Made with crisp radishes, salty olives, and feta, and dressed with minted olive oil and lemon, this salad really sings.

Not technically a grain, but rather the seed of an herb, quinoa hails from South America. (It is often called a "supergrain" because it contains more protein than any grain.) Bulgur comes from the hulled, cracked berries of whole wheat, and has a nutty flavor.

- 1/3 cup quinoa (see Shopping List, page 262)
- 4 cups water
- 1 1/2 teaspoons salt
- 1/3 cup medium bulgur
- 2 tablespoons olive oil
- 2 tablespoons fresh lemon juice
- 3/4 teaspoon dried mint, crumbled
- 1/4 teaspoon black pepper
- 4 brine-cured black olives, such as Kalamata, pitted and cut into slivers
- 2 radishes, quartered and thinly sliced
- 2 oz feta, coarsely crumbled (1/2 cup)
- 1 head Bibb lettuce, cut into 1/4-inch strips (4 cups)

► Wash quinoa in 3 changes of cold water in a bowl, draining in a sieve between changes of water.

► Stir together quinoa, 4 cups water, and 3/4 teaspoon salt in a 2- to 3-quart saucepan, and simmer, uncovered, until quinoa is just tender and germ starts to separate from grain, about 20 minutes. Drain well in sieve, then transfer to a medium bowl.

► While quinoa is simmering, cover bulgur with warm water by 2 inches and soak until tender and chewy, about 10 minutes. Drain well in a sieve, then stir into drained quinoa. Cool grains completely, about 20 minutes.

► While grains cool, stir together oil, lemon juice, mint, pepper, and remaining 3/4 teaspoon salt in a small bowl and let stand 15 minutes, then stir into grains along with olives, radishes, feta, and lettuce. Serve immediately.

Cooks' note:

Grains can be made ahead and kept, chilled and covered, 1 day. Bring to room temperature while dressing stands. ☞

WASTE WATCHERS

Continued from page 136

reuse mandates (the goal is to divert 75 percent of waste from the landfill by 2010; the city was at 67 percent, 10 percent of which was food waste). But if large-scale composting isn't going to work, what will?

In Europe, which has even less room to bury or compost waste, private food processors and municipalities alike have turned to digesters—tanks that cook food scraps, without oxygen, until they're about 50 percent decomposed, then finish them off aerobically. The by-product of these digesters is roughly 40 percent carbon dioxide and moisture and 60 percent methane, which can be burned in fuel cells or in a microturbine, or scrubbed and then used as natural gas. Since the early 1990s, more than 125 anaerobic digesters, producing enough electricity to supply 300,000 households, have been built in Europe. The crumbly brown end product of anaerobic digestion, say compost experts, has as much value to agriculture as compost produced the old-fashioned way. All this, and digester gas also reaps a tax credit for creating sustainable energy.

Industrial food companies such as Kraft and Anheuser-Busch rely on digesters to reduce the volume of their waste, and feasibility studies of digesters are underway in Toronto and Seattle for both pre- and postconsumer food waste, and at New York City's Hunts Point Terminal produce market, which generates 66 tons of food waste, corrugated cardboard, and waxed paper a day. (New York, with its 18,000 restaurants, currently landfills more than 11 million tons of food and other organic waste a year. According to the EPA, digesting this stuff in tanks would not only avoid pumping 1.8 million tons of greenhouse gases into the air but also generate 1.4 billion kilowatt hours of electricity, enough to supply more than 100,000 households.)

While collecting vast quantities of rotting food presents a daunting logistical challenge for San Francisco officials, Norcal is gamely forging ahead, testing whether digested compost will meet organic standards and produce enough methane to justify the high cost of acquiring the anaerobic contraptions. If the answers are yes and yes, the makers of Four Course Compost may soon be bragging about the creation of yet another sustainable sideline. First it was potato peels to potatoes; next it could be potato peels to power. ☞

SHOPPING LIST

FOOD

YOU ASKED FOR IT Page 46: Chinese fermented black beans—adrianascaravan.com. **LOVE TO LOVE YOU, BABY Page 82:** Yellow grits—bobsredmill.com. **FIVE INGREDIENTS Page 160:** Spanish chorizo—Latino markets, many supermarkets, and tienda.com. **THE MEAL THAT RUTH BUILT Page 220:** Kombu—Japanese markets and Uwajimaya (800-889-1928). **Page 224:** Maytag Blue cheese—cheese shops and some supermarkets. **Baba au rhum molds**—bakeware shops and Sweet Celebrations (800-328-6722). **GRAINS Page 236:** Green wheat—kalustyans.com. **Page 240:** Instant-espresso powder—specialty foods shops, some supermarkets, and bakerscatalogue.com. **Spelt flour**—natural foods stores. **Confit duck legs**—dartagnan.com. **Farro**—farawayfoods.com. **SEASON OF A CHEF'S CONTENT Page 246:** Coarse stone-ground grits—Anson Mills (803-467-4122) and hoppingjohns.com. **Fresh exotic mushrooms**—specialty foods shops. **COOKING FOR A CAUSE Page 261:** Gigante beans—kalustyans.com.

OTHER THINGS

GOURMET EVERY DAY Page 149: Fork—iitalia (800-448-8252). **Knife**—WMF of America (800-999-6347). **Page 150:** Tray by Tampopo—Dandelion (888-548-1968). **Page 152:** Platter by Christiane Perrochon—Takashimaya New York. **Page 154:** Bowl by Brickett Davda—H Groome (631-204-0491). **Page 158:** Bowl by MUD Australia—ABC Carpet & Home (212-473-3000). **Spoon**—Takashimaya New York (800-753-2038). **Page 160:** Fork—Takashimaya New York. **Page 163:** Plate—Alex Marshall Studios (530-824-3800). **Marrow spoon** by ARCA—Bridge Kitchenware (800-274-3435). **THE MEAL THAT RUTH BUILT Page 216:** Large "Peacock" plates by Christiane Perrochon—Takashimaya New York. **Fumo wineglasses** by Calvin Klein—macys.com. **Bread and butter plate**—Bennington Potters (800-205-8033). **Small purple tumbler**—Authentiques Past & Present (212-675-2179). **Page 217:** Small purple bowl by MUD Australia—Global Table (212-431-5839). **Blue ceramic bottle and green pitcher**—The End of History (212-647-7598). **Page 218:** Serving bowl—Bennington Potters. **Page 219:** Brown vase—The End of History. **Page 223:** Plum dinner plates by Calvin Klein—macys.com. **Tall Blenko vase and green Aseda vase**—The End of History. **KITCHEN NOTEBOOK Page 253:** Square plate by Barbara Eigen—Eigen Arts (201-798-7310). **Clear "Dip-set" bowl** by Jenaer Glas—unicahome.com. ☞