



A customer places her order at a Chipotle Mexican Grill in Miami in April. The popular chain obtains its ingredients from suppliers that use sustainable farming methods.

JOE RAEDLE/GETTY IMAGES

THE CHIPOTLE EFFECT

Can sustainable agriculture feed the nation?

By Matt Alderton

WHEREVER YOU ARE IN the U.S., the line at the nearest Chipotle Mexican Grill is already starting to swell at 11 a.m. By high noon — lunchtime — it's positively serpentine. The line punctuates the doorway and spills out onto the sidewalk, everyone in it salivating over the infant-sized burritos inside.

Those responsible for the line are fanatical about food and this food in particular, which they flock to not only for its spice, but also for its stewardship, inherent in Chipotle's commitment to "responsibly raised" meats, organic produce, pasture-raised dairy and non-GMO ingredients.

There's just one problem: What has thus far differentiated Chipotle threatens to also undo it.

So portends an incident last year that Chipotle fans dubbed the "Great Carnitas Shortage of 2015." It started in January, when Chipotle ceased serving its

popular carnitas at more than a third of its restaurants due to conflicts with one of its pork suppliers. During a routine audit, the supplier was found to be in violation of Chipotle's strict animal welfare standards. Chipotle subsequently suspended the rogue supplier, creating a void in its supply chain that left some restaurants pork-free for approximately nine long months.

Chipotle aficionados were outraged. "Omg if I do not get my #Chipotle #carnitas soon bad things will happen! #withdrawal #bringbackcarnitas #chipotlesmylife #ilovechipotle," one fan tweeted.

"Saddest moment in my life: walking into Chipotle and finding out they don't sell carnitas anymore. #BringbackCarnitas," tweeted another.

Meanwhile, the company's annual revenue growth slowed to 9.6 percent in 2015, down from 26.7 percent in 2014.

"Whether it's poultry, pork or beef, the premium, specialty product that places like Chipotle buy only represents a fraction of the total supply — in the single digits as a



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percent of the whole,” explained Jeff Tripician, general manager of Niman Ranch, the sustainable pork producer that ultimately helped Chipotle ease its carnitas famine when it dipped into its “pork reserves” to meet the company’s demand. “So when they experience either dramatic growth or a disruption in supply, companies like Chipotle don’t have the ability to say, ‘Well, I’ll just get the product somewhere else.’ It doesn’t exist.”

Tripician said it takes two years to raise cattle and seven months to raise hogs to the point where they reach market weight for slaughter. And that’s not counting the time it takes to convert a conventional farm’s infrastructure and operations into a sustainable business model.

“Ferrari only makes a very limited number of cars,” he said. “If a whole bunch of people decided they suddenly wanted Ferraris, Ferrari would have to say, ‘OK, but it’s going to take some time because we have to build them, and we build them by hand.’ It’s not a question of price; it’s

a question of availability. They don’t have extra product just sitting around. It’s the same thing with livestock.”

Which begs the question: As demand for sustainable food increases — including not only livestock, but also fruits, vegetables, dairy and grains — will the “Chipotle effect” multiply and spread to other suppliers and retailers?

According to Tripician and his agricultural peers, it could. But it might not be simple.

‘SUSTAINABILITY’ PROBLEM

Increasing the sustainable food supply to avoid future shortages will require overcoming a number of fundamental challenges, according to Steve Balling, former director of agricultural services and corporate responsibility at Del Monte Foods. “There are a whole lot of barriers to achieving fully sustainable agriculture,” said Balling, a retired entomologist who oversaw the company’s efforts to reduce pesticide use. “The first is the definition: Who makes the rules for what sustainability really is?”

Chipotle customers were unable to order carnitas for several months in 2015 after one of the company’s pork suppliers was found to have violated its strict animal welfare standards.

The answer right now is: anyone.

“It’s really being driven at the company level,” explained Bob Young, chief economist and deputy executive director of public policy at the American Farm Bureau Federation. “The Walmarts and Unilevers of the world all have their own certification systems.”

Chipotle, for instance, requires that hogs be antibiotic-free, allowed to freely root and roam outdoors, and sheltered in pens with straw beds. Whole Foods Market shares Chipotle’s opposition to antibiotics and its commitment to straw beds, but has no requirement about outdoor roaming.

Meanwhile, the National Pork Board’s *Swine Care Handbook* states, “There are a variety of housing and system types that can be appropriate for raising pigs.”

Hog farmers are, therefore, faced with competing standards.

“Chipotle got hung up on one or two tiny little things because they wanted to look like they have higher standards than everybody else,” said eighth-generation hog farmer Brandon Whitt, manager of Batey Farms in Murfreesboro, Tenn. “The fact is, the National Pork Board and farmers all across the country already are upholding 99 percent of Chipotle’s standards. So when Chipotle said there was a pork shortage, there wasn’t. There was plenty of pork to go around.”

Chipotle spokesperson Chris Arnold called this a misreading of the situation: “There was not enough pork that met our standards. There are a number of options that come close, but that is not enough. The pork supplier that we suspended (which prompted our shortage) was in violation of some of our standards with regard to welfare for the animals. We could find additional domestic suppliers that met most of our antibiotic standards, but not the antibiotic standards and the welfare standards.”

Simply put: The difference between an abundance of product and a shortage depends on whose standards you’re considering.

Many farmers have no choice but to adopt the least onerous standards, according to Tripician, who noted that converting one’s farm from a conventional to a sustainable business model takes time, money and land. Those who invest in supply without demand risk losing their livelihood.

“A couple years ago, corn spiked at

more than \$6 a bushel, so a lot of farmers switched what they were planting to raise more corn. Well, by the time their harvest came in, corn prices had dropped down to \$3,” Tripician explained. “Farmers need to know that all the work, effort and risk it takes to increase our sustainable food supply will be worth it, and right now they don’t have the confidence that it will be.”

The market for sustainable food is so tenuous because there is a disconnect between consumers’ beliefs and behaviors, according to Arthur Gillett, head of research at HowGood, an independent research organization that rates foods based on its sustainability.

Sustainable agriculture, Gillett pointed out, produces smaller yields and is more labor intensive for farmers, who have to rely less on automated machines and more on skilled workers to maintain the requisite quality. That creates extra costs, and extra costs cause higher prices, which Americans thus far have been unwilling to pay.

“We have been accustomed to what is effectively underpriced food for a long time in this nation; food takes up a smaller percentage of our annual income than it ever has in history,” Gillett said. “While that makes food more available to people who need it, at the same time it creates the conditions for a ‘race to the bottom,’ where the only way to make money is to create highly processed foods that can be sold for significantly more than the cost of their ingredients because they’re ‘value-added’ ... If we want farms to be more sustainable, we have to make it possible for farmers to make more money per calorie than they’re making right now.”

Echoed Young, “Just look at what it costs to shop at Whole Foods versus what it costs to shop at Kroger. There is a significant difference. If folks are willing to pay that, farmers will provide the supply.”

BIG AG TO THE RESCUE?

In sustainability circles, industrial agriculture is typically cast in the role of “supervillain.” Because of the gap between supply and demand, however, Big Ag isn’t just part of the problem; since it constitutes a majority of the food system, it also has to be part of the solution.

“You can have a much greater impact on overall sustainability by focusing on the big

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Many farms, including this one in Mechanicsville, Va., are using techniques such as crop rotation to increase yield in sustainable ways.



LANCE CHEUNG/USDA

“If we want farms to be more sustainable, we have to make it possible for farmers to make more money per calorie than they’re making right now.”

— **Arthur Gillett, head of research at HowGood, which rates foods based on sustainability**

guys,” Balling said. “Small, integrated farms have a role to play, but we have to move all of agriculture forward, not just the margins.”

Field to Market, an alliance of nearly 100 food producers and retailers committed to agricultural sustainability, is focusing in particular on the environmental impact of commodity crops such as corn, cotton, potatoes, rice, soybeans and wheat.

According to president Rod Snyder, the organization and its members — including the American Farm Bureau Federation, Coca-Cola, General Mills, McDonald’s, Syngenta, Unilever and Walmart, among others — are developing scientific baselines against which to benchmark industry progress.

“We’ve come up with some really important metrics and indicators for things like irrigative water use, soil erosion, water quality and greenhouse gas emissions, which is allowing us for the first time to have a common approach to measuring our (environmental footprint),” Snyder said. “Once you get the underlying science right, you can begin applying it to supply chains within companies to help them make improvements with their growers.”

The gestational nature of agriculture means it will take years — perhaps even decades — to effect radical change within the food system. Instead of prescribing specific standards or practices, therefore, Field to Market’s goal is continuous improvement.

“It’s not a one-size-fits-all approach. Depending on geography, crop and supply chain, there might be different solutions that need to be applied,” Snyder said. “The most critical thing right now is for food companies to begin this journey by establishing relationships with suppliers and asking the questions that will help them identify which improvements are going to be most impactful.”

One improvement that’s already creating positive impact is no-till, cover-crop farming, which helps farmers improve soil quality, limit greenhouse gas and reduce the use of synthetic fertilizers by foregoing plowing and instead planting fall cover crops — plantings that “cover” what would otherwise be fallow ground in winter, then rot in place come spring.

“Large-scale producers are using cover crops to build soil organic matter, capture carbon, hold water and maintain nutrients in soil,” explained Rob Hedberg, national director of the U.S. Department of Agriculture’s Sustainable Agriculture Research and Education Program (SARE), which provides federal grants and education to advance innovations in sustainable agriculture. “That’s taking place on farms of 23,000 acres, and they’re very excited about it. So, sustainable practices are definitely finding their way into very-large-scale food production.”

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BOB NICHOLS/USDA

Farmers in Rockingham County, Va., check the results of no-till techniques, a method of farming that cuts down on soil erosion and increases the amount of water and nutrients in the soil.

Even companies as large as seed behemoth Monsanto are getting in on the act. A founding member of Field to Market, it announced in December 2015 a commitment to be carbon-neutral by 2021.

"You often hear people say, 'Save the planet; plant a tree.' That's because planting a tree can reduce climate change by reducing carbon in the air. Well, you can also save the planet by planting a corn crop," said Monsanto President and Chief Operating Officer Brett Begemann. "Because it sequesters carbon in the soil like a tree does, utilizing cover crops and reduced tillage in high-productivity systems will actually produce a negative carbon footprint."

DAVID TEACHING GOLIATH

Although companies like Monsanto promise they're moving in an ever more sustainable direction, Big Ag is climbing a peak whose summit is years away.

"Companies like Chipotle are making sustainability announcements on Tuesday and expecting everything to be different on Thursday, but the system just doesn't move that fast," Young said. "We only grow one corn crop a year, for example, which means you only get to make decisions once a year, too. We're not talking about changing chips

on a computer; it's a biological process."

Technology is an apt comparison. In that industry, small start-ups are incubators for innovation due to their flexibility and agility, which allow them to quickly develop new capabilities that can be acquired later by larger competitors. The same potential exists in agriculture, where small and midsize farms in many cases are illustrating proofs of concept that may one day prove scalable by Big Ag.

SARE is fueling many of those farms with its grants, which have advanced research in areas as diverse as water management, aquaponics, livestock breeding and integrated pest management. In turn, that research has helped spawn an array of alternative food systems, from farmers' markets to urban agriculture.

"We have a thousand different types of systems in a thousand different locations, and the ones that are successful are becoming a model that can help others," Hedberg said. "Diversity in and of itself is a strength, because even if a system is only 1 percent or half a percent of our national market, at least it's there, providing opportunity, income and family enterprise for somebody who can then keep growing, expanding, changing and evolving."

Examples of innovators include The

Happy Egg Co. of San Francisco, which this year plans to double its production of free-range eggs sourced from Mennonite farms; PRE Brands of Chicago, whose 100 percent grass-fed beef went from distribution at seven local stores to more than 200 stores nationwide in a span of just eight months; and Urban Produce of Irvine, Calif., which plans to build 100 vertical farms in urban locations across the country by 2020.

Then there's Niman Ranch, which has been demonstrating the scalability of sustainability since 1969.

"Niman is a company that's tied to family farmers," explained Tripician, who said the company acts as a broker between small local farms and large national buyers; it helps the latter source sustainable meats by helping the former execute sustainable business practices, and paying them a premium to do so.

As the middleman, Niman secures demand before it builds supply, ensuring farmers' investment in sustainable operations. "Ten years ago we had a couple hundred farmers and ranchers. Today, we have more than 700. We bring them all on one at a time, and only when we're sure we can do a good job helping them grow and thrive."

Although Niman Ranch was acquired

last year by poultry giant Perdue Farms, Tripician insists the relationship has helped rather than hindered its mission. In fact, he said it's illustrating how agricultural innovators can educate Big Ag to make the entire food system more sustainable.

"We're run as a separate company, but we spend a lot of time talking to the Perdue family about how to engage farmers at a deeper level to provide them with greater assurance and move in the direction of more antibiotic-free, more organic product," Tripician said. "They're doing it the same way we are, just with more zeros at the end. And because of their scale, they're making a greater impact than we are."

For now, the impact is small. If food systems can collaborate on sustainable solutions, however, it will continue growing — diminishing the Chipotle effect with every incremental step.

"People have different definitions of what 'sustainability' is, but I think everybody agrees that agriculture should be as sustainable as possible," Begemann said. "How we get there isn't a question of big agriculture or small agriculture; it's a question of how big agriculture and small agriculture can work together to accomplish a sustainable food system by leveraging the capabilities of both." ●