

New love for ancient grains

And what it means for the future of food

by Jenna Blumenfeld

Ancient grains are crossing over. In January, General Mills will launch **Cheerios + Ancient Grains**, which contain oats, quinoa, Kamut wheat and spelt (and, ahem, 4 grams more sugar than Original Cheerios). **Kashi** will soon debut new Sprouted Grains, an addition to the brand's Organic Promise line. These are just two examples of the hundreds, if not thousands, of new products coming out as ancient grains mature from the bulk bins of hippie co-ops to the ingredient labels of mainstream packaged goods.

Like goji berries and kale before them, ancient grains like buckwheat groats, amaranth, millet, teff, farro, Kamut wheat, sorghum, and quinoa are now established parts of the American diet. Sales of bread, baked goods, crackers, and crispbreads (categories believed to capture a majority of ancient grain sales) rose from \$4.9 million in 2012 to \$6.4 million in 2013, according to SPINS. Even NASA has studied hardy quinoa for its potential as a hydroponic crop for long-term space missions, stating that “while no single food can supply all the essential life sustaining nutrients, quinoa comes as close as any other in the plant or animal kingdom.”

And in a trend that would seem to run counter to the increasing interest in gluten-free diets, the largest sales increases have been for ancient grains that contain gluten. Sales of Khorasan wheat, which goes by the brand name Kamut, were up 686 percent in July 2014 over the preceding year. Compare that with the more established quinoa, which was up 35 percent over the same period, says SPINS.

So what's going on? More nuanced understandings about gluten allergies and intolerances have paved the way to broader acceptance of various wheat cousins, while increased domestic supply and a mature global market have enabled more people to experiment with—and see the benefits of—ancient grains.

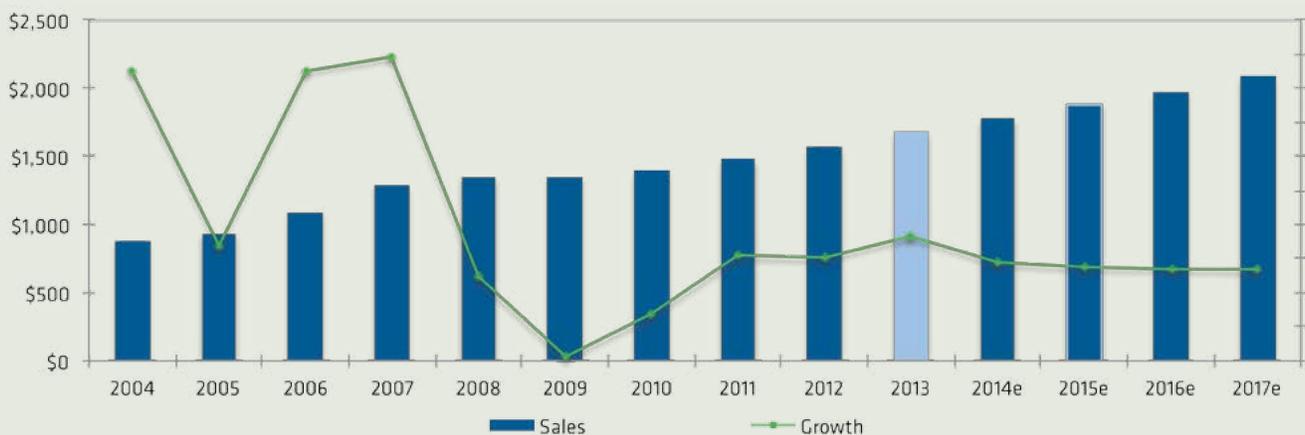
When wheat means sugar

As author and cardiologist William Davis pointed out in his 2011 New York Times bestseller, *Wheat Belly*, modern wheat bears little resemblance to the grain our ancestors ate thousands of years ago. “From the original strains of wild grass harvested by early humans, wheat has exploded to more than 25,000 varieties,” Davis writes, “virtually all

of them the result of human intervention.” Starting in the second half of the twentieth century, researchers and farmers focused on creating wheat strains that would increase yields, deliver greater bread volume, and be easier to process. (Nutrition was not a main driver.) This utilitarian focus earned a Nobel Peace Prize in 1970 for Norman Borlaug, the biologist who led these initiatives and who was credited with saving a billion people from dying of malnutrition and starvation.

For a perfect example of how wheat went from good to bad—and how that bad wheat made its way onto our plates—look no further than pasta. Prior to the Industrial Revolution, pasta was made by hand, either at home or in small shops. Fast-forward to today, and the only way to keep pace with the estimated 13.6 million tons of pasta produced globally each year is to rely on high-capacity extruders. In response, researchers created Durum wheat, which features a looser husk to make it much easier to process on an industrial scale. “Amber waves of grains” is a fallacy, as most modern wheat varieties are dwarfed (about thigh-height) and thick-stalked, allowing them to withstand more and bigger kernels without snapping.

U.S. SALES AND GROWTH FOR DRY BREAKFAST FOODS, 2004-2017E



Source: Nutrition Business Journal estimates: (\$mil., consumer sales)

Such hybridizations have wrecked wheat's nutritional value by making its sugars more easily digested. "Wheat products elevate blood-sugar levels more than virtually any other carbohydrate, from beans to candy bars," Davis writes. Refining processes exacerbate our glucose response by separating the bran and germ from the white, starchy endosperm, giving us an addictive sweetness. There is no avoiding sugar without avoiding modern wheat.

Modern wheat: zero. Ancient wheat: one

One of the main drivers and beneficiaries of the ancient grain trend is Kamut, which has independent research to back its health claims. In a 2013 study published in the *European Journal of Clinical Nutrition*, subjects who swapped out bread, crackers, and pasta made with conventional wheat for products made with Kamut experienced significant reductions in metabolic risk factors like total cholesterol, blood glucose, and even pro-inflammatory cytokines. "Kamut wheat actually improved [the study participant's] health," says Bob Quinn, president and founder of

Kamut International. "Results weren't just neutral."

After years of increasing gluten vilification, a growing number of consumers now identify as gluten-intolerant—a condition often called non-celiac gluten sensitivity. They have found that ancient grains don't cause gastrointestinal distress despite the presence of gluten. While these people wouldn't touch white bread, they will embrace wheat relatives like Kamut, spelt, emmer, and einkorn, whether in finished products or as a standalone ingredient. (Many are available through **Bob's Red Mill Grains of Discovery**, launched at Expo West 2013.)

Such innovation in packaged foods drives ancient grain popularity. "People are finding that ancient grains are easier to digest than [commodity] wheat," says Elizabeth Stein, founder and CEP of **Purely Elizabeth**. "I think this is a huge contributor to the ancient grain trend. Ancient grains have turned into the backbone of our product formulation going forward." For example, Purely Elizabeth's Original Ancient Grain Granola contains puffed amaranth, quinoa flakes, and chia seeds.

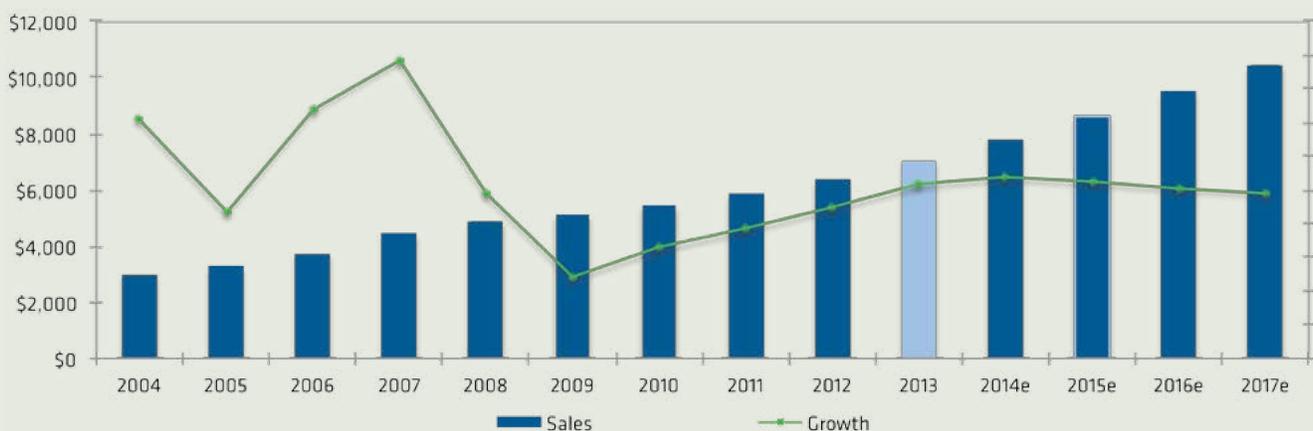
As food manufacturers seek to boost fiber and protein in hot cereals, snacks, crackers, and even beverages, shoppers can access ancient grains like never before—even in junk food: According to New Hope Natural Media's NEXT Trend Database, 19 percent of snacks, cookies, and candy exhibited at Natural Products Expo contained ingredients like flaxseed, quinoa, chia, and millet.

Global impact—good and bad

The booming appetite for ancient grains has had unintended consequences. As consumers in developed nations drive up demand, prices rise everywhere, including in developing countries where these grains have been traditional (and affordable) staples. Case in point: quinoa prices shot up more than 86 percent from January to December 2013 in Peru, threatening to price the grain beyond the reach of many residents of Peru and Bolivia who rely on it to meet their nutritional needs. "Consumers in the United States are willing to pay a higher price," says Carolyn Dimitri, associate professor of food studies at New York University. "This diverts a lot of production out of the home country."

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U.S. SALES AND GROWTH FOR BREAD AND GRAINS, 2004-2017E



Source: Nutrition Business Journal estimates (\$mil., consumer sales)

Still, research shows that quinoa's increasing prices are a boon for rural quinoa farmers. According to the Food and Agriculture Organization of the United Nations, 81 percent of Bolivian farmers interviewed between December 2012 and March 2013 reported quinoa as their primary source of income. As a result, quinoa farming communities enjoy improved living conditions, increased education opportunities, and capital to invest in infrastructure. The grain's global popularity also allows farmers to gain political sway through influential farmer cooperatives. Originally created to lessen the impact of corrupt middlemen, cooperatives "bring greater political power to the region," says a 2012 report published in the journal *Agriculture and Human Values*. "Farmers also credit cooperatives for their historic position in defending farmers' interests against intermediaries and their reputation for offering fair prices and using fair practices."

Predictably, as demand has gone up, farmers in the United States—and nearly every other country with a hearty appetite for quinoa—have been experimenting with domestic production. For example, White Mountain Farm, which sits at a Bolivia-worthy 7,600-ft elevation in the mountains of Colorado, was the first U.S. farm to cultivate quinoa in 1984. Though yields are small, White Mountain Farm continues to sell quinoa online and in some regional

natural stores. Likewise, after learning about teff in the 1970s, founders of the Teff Company started to grow this sturdy grass in Snake River Valley, Idaho. American-grown teff is now available nationally.

With more farmers understanding the merits of growing ancient grains, some organizations are working to establish infrastructure to build local grain economies. For example, **Community Grains**, a nonprofit founded in 2007 in Northern California, connects growers of nonhybridized wheat varieties with local mills, bakers, and distributors to "use a production cycle that favors flavor and nutrition over efficiency," says founder Bob Klein. Community Grains also sells a line of "identity preserved" wheat products that display traceability information directly on the front of package.

Domestic farming of ancient grains not only assuages concerns over carbon footprints and industrial grain operations but also boosts global food security. Ancient grains evolved in harsh environmental conditions. Cultivated in drought- or flood-prone areas, acidic soils, and places with wide temperature fluctuations, these crops are hardy. Teff, for example, requires little water and flourishes in the hot, dry regions of Nevada and Idaho.

"Think of commodity crops as purebred dogs," says Laurie Scanlin, founder of

Keen Ingredients, which makes quinoa-derived protein concentrates and flours. Scanlin, who holds a doctorate in food science and human nutrition, fears that temperature increases from climate change could reduce yield for conventional wheat, corn, and soy, threatening our long-term food security, especially for a population expected to swell to 9 billion by 2050. Longer, hotter growing seasons may kill off finicky commodity crops, which are bred to thrive in very specific conditions. Not so for resilient ancient grains.

A double-edged sword

Again, though, while spreading the cultivation of ancient grains around internationally could help the respective countries (and those that they export to), the Perus and Bolivias of the world would take a big hit, particularly in communities where quinoa farming is the backbone of the local economy.

This is a huge deal for the Bolivian government. In an effort to protect quinoa strains, the country has placed export embargoes on many quinoa varieties. In 2006, Ethiopia, facing similar problems with burgeoning international interest in teff, banned exports of raw teff grain. (U.S. brands like Bob's Red Mill frequently source teff from Idaho.) So we, as both consumers and manufacturers, are faced

U.S. GLUTEN FREE PRODUCT SALES & GROWTH, 2010-2018E



Source: Nutrition Business Journal estimates (\$mil., consumer sales)

with a dilemma: How can we meet and even expand worldwide demand for ancient grains while maintaining support for the countries that have led in production and that continue to rely on grains for economic development?

Edouard Rollet, co-founder and president of Alter Eco Foods, which has been importing quinoa directly from farmers since 2003, suggests establishing a type of protected denomination of origin—like champagne or Roquefort—for Royal Quinoa, a prized, large-grain variety that grows above 13,000 feet in Bolivia. If Royal Quinoa were officially recognized, farmers could charge a premium, allowing them to protect price independent of quinoa production in other countries. “It’s really the conditions—the terroir—that create the product, which is crunchier and superior to other types of quinoa,” says Rollet. “Under this model, the quinoa farmers would own Royal Quinoa.” Alter Eco is actively working with the Bolivian government, universities, and chemists to protect Royal Quinoa as a premium product. The benefit, says Rollet, is that with more domestic supply in the world from other quinoa strains, prices within Bolivia would drop, allowing more people to afford this nutritious grain.

It’s a well-intentioned plan and could indeed solve some problems, but can we truly expect consumers to be as discerning of quinoa varieties as they are of wines and cheeses—to the point that they would pay a premium? Would a denomination of origin for teff matter if most people don’t even know what it is?

It also remains to be seen if these are intractable problems within the ancient grains space or merely the growing pains expected in any new market category. So Alter Eco, Bob’s Red Mill, Kashi, Nature’s Path, Purely Elizabeth, and other ancient grain producers are focusing on education. But one thing is certain: Consumers will continue to seek ancient grains produced by farmers in developing regions, which leaves those farmers susceptible to global trends in ways that their counterparts in more established economies might not be. “It’s extremely important that farmers have control of their destiny,” Rollet says. “That’s really the key.” 🌱



Amaranth is among the ancient grains experiencing a surge in sales.