



Tenera Grains grows two types of teff: ivory and brown, marketing the flour online.

Alternative Grain Gains Michigan Farm Taps Teff Market

BY SHAWNDR A MILLER

Meet the first farmers east of the Mississippi to grow teff for human consumption. Brad Smith, an attorney, along with his daughter Claire Smith team up on their seventh-generation family farm to grow the desert crop in humid southern Michigan.

Teff, for the uninitiated, is *Eragrostis tef*, an annual lovegrass native to Ethiopia and Eritrea. There it is grown for its minuscule seeds, which are eaten as a grain or ground into flour – the key ingredient in injera, a fermented flatbread that is a staple in Ethiopia.

While a handful of American growers have begun to raise teff, most of them are in the dry west, and the vast

majority of the crop is fed to livestock as hay. In Michigan, less than 10 farmers grow teff grass as forage, according to Jerry Lindquist, grazing and crop management educator with Michigan State University Extension.

At Maple Drive Farms, a 2,500-acre row crop operation near Addison, Michigan, the father-and-daughter Smiths produce food-grade, non-GMO teff. They began Tenera Grains, their teff enterprise, in 2015.

According to Claire Smith, the overall farm is largely no-till.

“My grandpa was one of the original no-tillers,” she said. “So the farm has been no-till for about 40 years now.” Leaving the fields untouched between harvest and planting means

their soil retains more nutrients and microorganisms and absorbs more water. Together with cover cropping, the practice reduces soil erosion.

However, the Smiths are still experimenting to see exactly what conditions give the best teff performance.

Claire grew up looking out on a backyard of corn, then soy, then corn. These days Brad rotates teff with soybeans in Tenera Grains’ fields, which admittedly are a very small portion of the total crops raised on Maple Drive Farms.

Until 2012, the fields were managed by other family members, but at 51, Brad decided to return to his roots. He still maintains his law practice while farming, juggling clients with his law partner and enlisting family members from time to time to pitch in during busy periods on the farm.

The majority of the acreage on the farm is still devoted to corn, soy and wheat, but Brad is also experimenting with adzuki beans. He sows rye, oats and oilseed radishes as cover crops.

An ancient grain, teff flour is enjoying a surge of popularity stateside as a gluten-free alternative.

Tenera Grains grows two types of teff: ivory and brown, marketing the flour online.

Corn prices had tanked to \$3.50/bushel when the Smiths began to consider alternatives. Seeing the farm’s need to diversify, a family friend suggested teff because he had encountered it in travels to Ethiopia. He touted its reputation in the West as the “newest super food,” according to Claire. “We hadn’t heard of it. We had no idea how to grow it, and obviously Ethiopia is very different from Michigan.”

Brad researched teff’s requirements and found that the crop prefers a firm seedbed, shallow planting and warm soil temperatures. In preparation for broadcasting the 1-mm-diameter seeds, he rolled a 33-acre test plot to pack the soil hard, in mimicry of Ethiopian fields.

After meticulously preparing the field, they planted Memorial Day weekend of 2015. They broadcast the last handfuls of tiny seeds from the back of a pickup truck after the planter broke down.



ABOVE: Brad Smith rotates teff with soybeans in Tenera Grains' fields. LEFT: Claire Smith helps her father farm teff and a variety of other grains at Maple Drive Farms in Michigan.

Despite that uncertain start, the crop flourished. "It came up so well, and we were so pleased with it," said Claire. "Our friend who works in Africa said, 'This is exactly what it looks like.'"

When that first season drew to a close, they knew they would continue to work with teff. By 2017, they devoted three fields to the crop, and Claire looks to see the expansion continue, with the potential to add other alternative grains like quinoa and buckwheat.

At harvest, Brad cuts the teff with a windrower and allows it to dry in the field. With Michigan's moist late summers this can take several days of hot sunshine. A miller in Pennsylvania grinds the cleaned seeds into flours, which are packaged for the consumer market and sold via Amazon.

"I'd like to grow more of these alternative grains and seeds, like chia. I see that as people start going healthier and more plant-based and are becoming more aware of what they're putting in their body, the demand for those ingredients will only go up."

— Claire Smith, Tenera Grains



At harvest, Brad cuts the teff with a windrower and allows it to dry in the field.

Claire is licensed to cook teff granola, dubbed teffola, in a commercial kitchen, and she is currently selling it directly to consumers via Etsy ([etsy.com/shop/teneragrains](https://www.etsy.com/shop/teneragrains)).

The moisture content of the finished product is somewhat higher than that grown in dryer climates: Tenera Grains' moisture measures at 12 percent, while the typical teff is closer

to 9 percent. However, this doesn't impact storage or quality – unless it's for the better. An Ethiopian restaurant in Chicago tested Tenera Grains' products. "They really liked it because of higher moisture content," said Claire.

Food blogger Katherine Chalkley of Houston says teff's strong protein content, nutrient profile and nutty

flavor make it a winner in gluten-free baking. She showcases recipes on her food website [DeliberateFare.com](https://www.DeliberateFare.com), creating comfort food options for people with special dietary needs.

Teff's hearty flavor makes it pair well with chocolate, says Chalkley. She used a major brand until Claire reached out to her with ivory teff flour from Tenera Grains.

"It's a little lighter in color, and I think it feels finer ... than standard brown teff," she said. "I like it because I can use that in things like pizza dough and other things that should appear to be white."

Chalkley said she had never seen ivory teff flour offered anywhere else, and she appreciates that the product is family farmed.

For Claire's part, while she knows that corn, wheat and soy will remain a mainstay on the farm, she foresees Tenera Grains making inroads into other boutique markets.

"I'd like to grow more of these alternative grains and seeds, like chia," she says. "I see that as people start going healthier and more plant-

based and are becoming more aware of what they're putting in their body, the demand for those ingredients will only go up."

GROWING TEFF FOR FORAGE

While teff's seeds have a proud history of pleasing human palates, Ethiopians have long grown teff grass as a versatile crop for animal feed as well. Now some farmers across the United States have begun following suit, diversifying their forage crops with teff.

According to Jerry Lindquist of Michigan State University Extension, teff's value as a hay crop is threefold:

- As an annual, it grows fast and can produce two cuttings in longer-season regions.
- Teff is a C3 grass, so it can follow alfalfa in a rotation – a boon to hay farmers who prefer not to raise corn or soybeans.
- Low in nonstructural carbohydrates, teff grass is a superior feed choice for underexercised horses that tend toward obesity and diabetes.

Lindquist advises waiting to plant until soil temperatures warm to 70°F. For optimum production, take a soil test and adjust nitrogen levels before planting. Sow seeds at 8 to 12 pounds per acre. Lindquist has seen teff grass grown successfully as a no-till crop in a multispecies annual mix for grazing in late summer. "The teff grew OK in that instance," he recalls. "So being similar to alfalfa in size and seedling vigor, I believe no-till can be a successful planting method for teff just like it is for alfalfa."

Since no-till soils do not warm up as quickly as tilled soils in the spring, it would be even more critical to wait for soil temperatures to rise. With tilled soils, teff's small seed size necessitates planting into a firm seedbed. Lindquist advises packing prior to sowing "to the point that the heel of your boot does not sink out of sight." Pulling a cultipacker behind the grain drill is also advised to put the seeds in good contact with the soil.

For hay production, the grass should be harvested in its vegetative state; once the crop goes to seed, the feed quality declines.

In humid climes, special care must be taken at harvest time. "It has a

very fine stem," said Lindquist. "So when you mow it, you don't get good air and sunlight filtration if you make the hay windrow too small. Spread the windrows out wide and it will dry better."

In regions where summers can vary wildly between hot and dry and cool and wet, Lindquist sees teff as a good hedge against weather variables.

"I talked to one of our farmers yesterday, and he told me that in cool summers, his cool-season grasses like orchardgrass do well, but in hot dry conditions, if they have teff grass planted, they get more production out of the teff grass. So it's a way to cover their bases." Despite the drawback of needing to replant each year, teff can be a good fit for farms in that situation.

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