



In Ethiopia, If It Tastes Good, It Can Be Good for You

Quality protein maize,
developed and refined by
CIMMYT during the past 20
years, is promoted for its
superior nutritional quality.
But consumer and
agricultural characteristics,
not nutrition, usually
advance adoption by farmers.

The unexpected suitability of quality protein maize (QPM) for making injera, Ethiopia's universal food, seems like a dream come true to Dr. Girma Akalu, Head of the Food Science and Nutrition Research Department, Ethiopia Health and Nutrition Research Institute. What excites Girma, as he likes to be called, is the promise of a viable way to address protein deficiency diseases he has observed in some areas, and to boost overall nutrition.

Children in Test Villages Benefit from Quality Protein Maize

A rigorous scientist, Girma, with funding from Sasakawa-Global 2000, tested this possibility in 2002-03, following positive published studies on QPM's nutritional value and effects on lab animals. In his experiment, 160 farmers in the Bako area of western Ethiopia received either conventional or QPM maize seed to grow and harvest. Information concerning which farmers grew which type was kept from both

farmers and researchers during the course of the test, which lasted a year. The health and growth of children ranging in age from six months to two years was monitored in study areas. By the second and third quarters of the experiment, children in the QPM villages were showing greater height and weight gains and less stunting and wasting, even accounting for variable household diets or incidence of gastrointestinal parasites. The study's fourth quarter was disrupted by the region's worst malaria outbreak in many years.

The results, added to observations of local development and health care workers and farmers, have convinced Girma of QPM's potential to improve diets and health. Particularly because teff is relatively low in lysine, mixing QPM flour into teff injera would significantly boost its protein quality. In the poorer areas, where much of Ethiopia's maize is grown, maize flat breads, porridge, and roasted ears are a key part of local diets, offering further opportunities for improved nutrition. Finally, researchers are seeking ways and formulations to make QPM-based injera that's identical to the traditional product in processing, taste, and other properties.

Farmers Would Rather Eat It than Sell It

Bachu Chemed, a development officer for 17 years, is now stationed in East Wellega where Girma's study took place. Nearly all her client farmers strongly preferred the QPM for food preparation and commented that the children seemed healthier. Some farmers noted that yields of the QPM hybrid, BHQ 542, were somewhat lower than those of their favorite hybrid, BH 660, but all liked the fact

that the QPM was early-maturing and thus able to escape drought and provide an early harvest. Most telling, she said, was the fact that most farmers kept the QPM grain for home consumption, rather than selling it.

Takele Gebre, Ethiopia Coordinator for Sasakawa-Global 2000, has worked on introducing QPM to the country since 1997. He says that the BHQ 542 went through the national registration and release process in the shortest time of any maize hybrid in history. "We've named it 'Gabissa,' which means 'makes big and strong,'" he says. "We're looking to make a big and strong impact with it this season, as we go out to 300 additional demonstration plots." Gebre's enthusiasm is based partly on the four-fold or better yield advantage of hybrid maize over teff, and its lower market price—only 32% of that of teff.

New Recipes for Nutrition?

Meanwhile, CIMMYT breeder Strafford Twumasi-Afriye and partners from the Ethiopian Agricultural Research Organization are incorporating the quality protein trait into Ethiopia's two most popular hybrids—BH 660 for high altitude zones and BH 540 for mid-altitude zones—as well as into four elite, open-pollinated varieties in the registration process and three popular open-pollinated varieties already on the market, with funding from the Nippon Foundation and the Canadian International Development Agency.

Girma Akalu plans a second verification study for 2004, and is also formulating various recipes for adding QPM to the recipe for Ethiopia's age-old staple food.

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