



Feed the Future Country Fact Sheet

Online Version: <https://www.feedthefuture.gov/article/climate-smart-pearl-millet-variety-may-be-game-changer-nutrition>

Climate-Smart Pearl Millet Variety May Be a Game Changer for Nutrition



HarvestPlus

Balikavikas Rao Raut of Maharashtra, India, shows off the crop of iron pearl millet she harvested with her husband.

Pearl millet is a staple food for nearly 100 million people in Africa and Asia, particularly for those living in arid and semi-arid climates. In India, about 50 million people consume pearl millet regularly in states such as Rajasthan, Maharashtra and Gujarat.

These states also happen to be among the worst affected by micronutrient deficiencies, a major public health challenge in India. Iron deficiency, for instance, affects seven out of ten Indian children under the age of five, and affects 55 percent of Indian women. Lack of iron impairs mental development and increases fatigue, while severe anemia, often caused by iron deficiency, increases the risk of women dying during childbirth.

Recent scientific studies suggest that pearl millet that is bred to contain increased levels of iron, or “iron pearl millet,” could be key in reducing iron deficiency.

A [Journal of Nutrition](#) study found that Indian children under the age of three could meet their full daily iron needs from just 100 grams of iron pearl millet flour. Children under two years old, who might eat less, would still benefit substantially from eating iron pearl millet. Another study in West Africa found that iron-deficient Beninese women who consumed this variety absorbed twice the amount of iron compared to those who ate ordinary pearl millet.

“Globally, women and children are the two groups who suffer the most from mineral deficiencies,” says Dr. Erick Boy, Head of Nutrition at [HarvestPlus](#), a global program of the [CGIAR](#) and a Feed the Future partner that seeks to improve nutrition. “These findings, from two different parts of the world, have established that pearl millet rich in iron can be an excellent source of iron and even zinc, much more so than wheat and rice.”

To date, more than 30,000 Indian farmers in Maharashtra are cultivating a new improved variety of iron pearl millet that was first sold to farmers in 2012. In Pimpangaondhepa village, farmer Vikas Rao Raut recently harvested this high-iron pearl millet on his one-acre farm for the first time. Any doubts his wife, Balikavikas, might have had about this new variety were put to rest once she saw the shiny grains.

“The grains are shinier than previous varieties and the taste of the Bhakri [local bread made out of pearl millet flour] is good, too. If this variety can provide good nutrition to my child, he will be strong and not get sick so often,” says Raut, who has the new harvest carefully stored in sacks to provide for her family over the whole year. “We were not sure about the new variety,

but we know that Bhau, the seed vendor, is a good man and always gives the right kind of advice.”

The significance of iron pearl millet extends beyond its nutritional potency; the variety released is also high-yielding and disease-tolerant. Iron pearl millet is also a climate-smart crop - its drought tolerance and efficient use of water makes it an increasingly critical food source in the face of climate change.

Using conventional breeding methods, scientists at the [International Crops Research Institute for the Semi-Arid Tropics](#) are now developing more varieties that will have even higher levels of iron as part of the HarvestPlus program.

Over the next five years, with support from Feed the Future, HarvestPlus expects to considerably scale up the delivery of iron pearl millet to reach more than 1.5 million farming households in India, with the potential to impact nutrition in other countries across Africa and Asia over the long term.

HarvestPlus leads a global effort to improve nutrition and public health by developing and disseminating staple food crops that are rich in vitamins and minerals. HarvestPlus is part of the [CGIAR](#), a global agriculture research partnership for a food-secure future. Its science is carried out by its 15 research centers in collaboration with hundreds of partner organizations. The HarvestPlus program is coordinated by two of these centers—the [International Center for Tropical Agriculture](#) and the [International Food Policy Research Institute](#).

[Learn more](#) about HarvestPlus' work on iron pearl millet.