Bio-fortification: Has India found a new solution to help tackle its double burden of malnutrition?

A bio-fortified variety of an unpopular staple food has attracted attention for its potential to tackle India's double burden of malnutrition.

Parbhani Shakti is being touted as India's first bio-fortified variety of sorghum, a plant from which grain and other crops are grown.

While it remains a traditional crop grown throughout India, insufficient marketing, high labour costs, and competing foods such as soybean have diminished sorghum's popularity as a staple food.

Sorghum 2.0

However, now that climate change poses a rising threat to many crops, sorghum could well be making a comeback, thanks to its drought-resistant nature.

To further counter the effects of higher CO₂ levels in the atmosphere — which are known to compromise the nutrient content of crops — breeders at the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) developed Parbhani Shakti, using gene modification to increase the bioavailability of sorghum's zinc and iron content.

After multi-centre trials in Maharashtra, as well as extensive tests in farmers' fields, Parbhani Shakti was released in May this year.

This has important implications for India, where approximately 500 million people (66% of the population) suffer from micronutrient deficiencies.

Speaking to Nutraingredients-Asia, principal scientist at ICRISAT A. Ashok Kumar explained that bio-fortification involves raising the concentration of vitamins and minerals in grains and edible plant parts using conventional breeding methods.