

Making it with millets



Manually pounding millets to separate the hull from the seed is tedious and time-consuming

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Under conditions where major cereals would fail to give sustainable yields, minor millets are a versatile crop that performs well in regions with erratic rainfall, or low-quality arable land. But research has paid little attention to improving the crop and the way it is cultivated and used. Manually pounding millets to separate the hull from the seed is also tedious and time-consuming, work usually carried out by women. However, with the support of the national and international research and funding agencies over the last ten years, cultivation of millet has improved, processing made easier and millet is once more becoming a popular staple.

Minor millets are small-seeded crops grown for food and fodder. With up to three times more calcium than rice, high amounts of iron, fibre and other micronutrients, millets are far more nutritious than rice and wheat. The important millets cultivated in India include finger millet, little millet, foxtail millet, barnyard millet, proso millet and kodo millet, which have been cultivated and conserved because of their grain characteristics (texture, flavour, colour), productivity, adaptability and significance and use in cultural dishes. However, traditional cultivation includes broadcasting of seed with no other crop management practised (e.g. weeding) so yields (500-600kg/ha), and calories

provided per household, are traditionally low. However, in the past, while locally important, millets were rarely traded outside farming communities because of the grain's reputation as food for the poor. More recently, farmers have turned to cash crops such as cassava, resulting in a decline in millet cultivation.

Increasing production

However working in collaboration with agricultural universities in Bangalore and Dharwad, and Bioversity International, the MS Swaminathan Research Foundation (MSSRF) has been working with tribal farming families in the Indian states of Uttarakhand, Odisha, Tamil Nadu and Karnataka to increase production and commercialisation of three minor (little millet, finger millet, foxtail millet). By improving planting techniques (sowing seed in rows, use of farmyard manure and weeding) and working with the farmers' traditional knowledge to select higher yielding varieties, villagers have been able to grow more food (up to 70 per cent more yield) for their families and have a surplus to sell, increasing incomes by 30 per cent.

Traditional milling and grinding was carried out by using a pestle and mortar and hand grinding stones which took several hours. To reduce the drudgery of processing, simple mechanical pulverisers and dehulling units were introduced and women trained to operate and maintain them. Using the new machines, processing was reduced to ten minutes and consequently led to a revival amongst the women for cultivating and using the crop.



Farming families are increasing production and commercialising three minor millets
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Adding value



Women have been trained in quality standardisation, packaging and production
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The project partners also worked with rural women to add value and develop popular snack foods. By training the women in quality standardisation, packaging and production, new millet-based recipes were developed for urban consumers and schools, which led to increased sales of millet-based products. The new recipes were developed to be cost-effective without being labour or time intensive, leaving the women with more time for other responsibilities.

The new recipes were also promoted to combat nutritional deficiencies among school-aged children, as the snacks are higher in protein and vitamins than equivalent products made of rice or wheat. In another initiative, women who produced and packaged a

finger millet-based, hot malt drink, used the fact that it tasted similar to chocolate, but with more nutrients, to market it both to mothers and children creating a higher demand and increasing their profits. Tamil farmer, Malliga Seerangan, has noticed a change with her family eating more millet: "Nowadays we've started eating millet. That's why we're going to hospital less and our children also have more energy and good health."

Expanding markets

With support, the women have established their own shop, and their 'Kolli Hills Natural Foods' branded products are being distributed across the state including to high-end supermarkets and health food stores in peri-urban and urban areas. Farmer, Latha Chandra Kumar, explains how earning an income has made a difference to the life of her family: "Now we have started adding value to millet production we are earning money. Before we had to depend on our husbands but now we are earning money which we use for our children's education and our family expenses."

Nationally, fairly distributed markets for millets is currently still very limited. However, recent legislation passed by the Indian government could make a real difference to the future of the crop. The Food Security Act 2013 legislates for the provision of subsidised food for the country's poorest people and minor millets are amongst the crops the government shall procure for distribution. The Indian government has traditionally promoted only rice and wheat but the efforts of MSSRF founder, Professor M.S. Swaminathan, was instrumental in having millets included in the Act. "The State will pay and the farmer will directly get the benefit by having a fair price through this process," says Dr E.D. Israel Oliver King, principal scientist at MSSRF. "This will really help these farmers to continue to cultivate these millets."



Rural women have developed popular snack foods
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