Ragi or finger millet is cultivated in Asia and Africa. It is one of the highly nutritional foods and is a great source to extract energy. Ragi tops the chart amongst nutrient consumption and achieves a high rank in grains. The botanical name for Ragi is Eleusine Coracana. Ragi is available as Ragi whole, Ragi flour, multigrain flour and breakfast mixes such as malted Ragi flour. It is a flat bloated cereal and the greater part of the fats are in the unsaturated form. If consumed regularly, Ragi could help in keeping degenerative diseases, malnutrition and premature ageing at bay. It is recommended for conditions of blood pressure, liver disorders, Asthma and heart weakness. Green Ragi is also recommended to lactating mothers in condition of lack of milk production.

Ragi has been cultivated in India, and especially in the south Indian state of Kar-nataka, for thousands of years. However, over the last three decades, this crop has been in decline. The low price of ragi in the market has forced farmers to shift to cash crop cultivation. The Government of India has increased the Minimum Support Price of ragi or finger millet to Rs. 1500 per quintal for the crop year 2012-2013.

With a view of promoting the commercial cultivation of Ragi in Mandla District, the ASA team started on its endeavor to conduct demonstration trials with willing farmers. Procuring the seeds was not an easy task, as Ragi seeds were not available at any of the common sources. However, a small quantity of the near extinct GPU 28 variety was available with the Agriculture Department of which a small quantity (2 Kg) of the breeder seed was made available to ASA team.

The next step was to arrange for a demonstration plot. Since, ASA was already working in exhaustively with the farmers in the district, arranging the demonstration plot was not too big a problem. Mrs Krishna Bai w/o Daulat Nanda of Mohaniya Patpara Village in Mandla Block offered about 0.2 hectares of her land for the Ragi Demonstration.

Major portion of Ragi Flour is carbohydrate, around 80%. The Fat percentage is quite less which is good. Protein and fiber content is relatively less as well. 100 grams of Ragi has roughly on an average of 336 KCal of energy in them.

Ragi also has some good number of Essential Amino Acids (EAA) which are essential for human body. Few of the key EAAs which Ragi has are Valine, Methionine, Isoleucine, Threonine and Tryptophan.

Nutritional comparison of ragi and rice

Action for Social Advancement (ASA) is a non profit organisation, head quartered at Bhopal and working for the livelihoods improvement of rural poor in over 1000 villages with over 120000 poor families in Madhya Pradesh, Jharkhand, Orissa and Bihar since 1996. ASA's approach to development is firmly founded upon participatory action at the community level. At the heart of the organization is the aim of developing livelihood security which is facilitated by an intensive participatory process of natural resources development and local institutional development. Particular emphasis is placed upon the poor and women.

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The seed requirement of Ragi for 1 hectare is about 12-15 Kg, and since the quantity of seed available was extremely small, it would not have been sufficient for the 0.2 hectare land offered by Mrs Krishna Bai. So it was decided to implement the SRI method for Ragi cultivation, which had the inherent benefits of low seed rate.

The challenge lay in the fact that the Mandla ASA team did not have any prior experience or exposure to Ragi farming. Add to this the fact that not many experiments have been conducted on using the SRI method in Ragi crop, and the informations in this regard was very scarce. The Farmer was also apprehensive regarding the success of SRI system for Ragi, given that Ragi seeds are very small and the team had a tough time convincing Mrs Krishna Bai.

To implement the SRI method, 3 nursery beds were prepared, and the seeds were sown in these 3 nursery beds. At the 13 day stage, the seedlings were transplanted into the main plot, and the markings were done using a rope.

Less than ½ of the available seedlings could be transplanted in the 0.20 Hectare plot, indicating that the nursery prepared was sufficient for about 0.5 hectare of land. This implies that the effective seed rate for Ragi will be about 5Kg / hectare using the SRI method. Post transplanting, about 40 Kg Vermicompost and 1 kg Urea was broadcast in the standing crop.

The sample yield taken in the month of November indicated the estimated yield of the 0.2Hectare plot to be about 2.10 Quintals, which translates to about 12 Quintals per hectare which can be considered as very good.

Mrs Krishna Bai, now plans to sell this seed to Mandla Adivase Kisan Utpadan Company, with whom she is associated, and this company plans to pack this produce into 1 KG packets and sell it to their months in Kharif 2014.

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**What is SCI / SRI**

System of Crop Intensification (SCI) is based on improved planting and growing techniques, rather than improved seed varieties and other inputs. It aims to produce more from less, using fewer seeds and less water, but carefully managing the relationship between the plant and soil. This low-input approach – and the results it can achieve – have made it popular among resource-limited farmers. In the case of rice (SRI), seedlings are planted earlier than usual, minimising transplant shock. They’re placed individually in spacious grid patterns 20-25cm apart, so there’s less competition for nutrients compared to conventional crowded fields. Soil is enriched with organic matter, and water use is controlled, with fields not kept permanently flooded. This encourages the development of large, strong root systems. Studies of SRI have reported yield increases of 40% or more. For small-scale farmers, such gains might mean the difference between food deficit and surplus, so it’s unsurprising that interest in the system has spread to other crops.

**Environmental Benefits of Ragi Cultivation using SRI**

In the context of global warming and changing rainfall patterns, millets also have the potential to combat poverty and hunger and ease the climate crisis. Their capacity to grow in poor soil with no irrigation and under low rainfall conditions has added to the belief that millets are the crops of the future. Rice and wheat, two of the highest produced foodgrains in India, come under the C3 group of crops. These absorb less carbon and are water-intensive. Millets, on the other hand, are C4 crops; they have a higher carbon intake and use water more efficiently. They can also serve as carbon sinks by absorbing more carbon di-oxide from the atmosphere.