

Reviving ‘Guli-Ragi’ – a traditional agronomic practice of Finger Millet cultivation in India – as a solution to malnutrition of Indian women and children.

A look at similarities to popular ecological principle of System of Rice Intensification

By Jacob Nellithanam and G.Krishna Prasad *

Introduction

Finger Millet is a highly nutritious cereal crop which can be grown throughout India, especially in the south west monsoon season, and in summer under irrigated conditions. Presently, it is a major crop only in a few southern states and Himalayan region, and is also grown in areas populated by indigenous people in the states of Orissa, Chhattisgarh, Jharkhand, etc.

Finger Millet or Ragi (as it is known in south India) has superior nutritional value compared to major cereals like Rice and Wheat because of higher content of Calcium and Iron in addition to calories. This nutritional benefit is particularly important for women and children.

Finger Millet (Ragi) is better adapted to both low rainfall and high rainfall conditions and has high genetic variability to suit a host of conditions. It can be grown productively in poor soils with less clay content and soil depth. It can easily be integrated into multi-cropping systems involving pulse and oil seeds. Intensive application of organic inputs can increase Finger Millet productivity to the average levels achieved for rice and wheat in India in the respective areas. Thus this neglected crop can be an easy local solution to counter the agricultural problems posed by climate change. It can also effectively remedy malnutrition in Indian population, which is so grave in many women and children.

Guli Ragi is a traditional agronomic practice of growing Finger Millet in some parts of the state of Karnataka. This received the revived attention of farmers when the System of Rice Intensification (SRI) started getting popular and demonstrated in farmers’ fields. SRI is based on agro-ecological principles of harvesting sunlight through higher bio-mass production; and by facilitating more root-volume growth and microbial population in the root zone through aeration and more organic inputs. Like SRI, the traditional Indigenous organic system of Guli-Ragi also follows almost similar agronomic practices of wide spacing, early transplanting of seedling and inter-cultivation to create more aerated soil.

With the increasing adoption and success of SRI in rice cultivation, the principles of SRI were experimented with other crops. During this time, the traditional Guli Ragi practice of growing Finger Millet was reported by civil society in Karnataka state. Learning from the practices and ideas of such farmers of Karnataka, a package of practices was tested for the central Indian states of Chattisgarh, Orissa and Jharkhand. It was found to show the potential of tripling of yields compared to the best yields of farmers in these states. This package of practices is now being tested with more than 2000 farmers in 2013 in the above states.

A productivity range of 3 tons to 6 tons per hectare is possible depending on soil types and the availability of crop saving irrigation from harvested rainfall in case of moisture deficiency during the crop’s reproductive stage and maturity period before harvesting.

Similar experience had been reported from Africa in Finger Millet and crops like Teff.

Wide spread experimentation of SRI principles in other cereal crops is already underway in India . Crops like wheat, barley are being experimented and getting popularised, with less water use and increased productivity.

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