

System of Crop Intensification

AMEF Experience in Red Gram

Red gram is one of the important pulse crops under rainfed conditions in Kolar district of Karnataka. Usually it is grown as an inter crop in Ragi or Groundnut crop. But it is being increasingly realized that the redgram production needs to be improved for various reasons - to meet the nutritional security, to realize higher returns, and also for soil enrichment. Hence, growing Red gram as a sole crop becomes imminent. In recent years, the area under Red gram has been increasing largely owing to the good market price.



SCI in Red gram

AMEF has been promoting SRI in Paddy in its operational areas in AP, TN, Karnataka, both under irrigated (Kolar, Tiruchi, Krishanagiri, Dharmapuri, Anantapur) as well as under rainfed conditions (Dharwad). The successful achievement in promoting SRI Paddy made AMEF to move beyond paddy crop. In 2009-2010, it started promoting SRI principles in Ragi (finger millet) among 209 farmers with good results. In 2010-11, AMEF initiated promoting SRI principles in Red gram crop among 35 farmers in 5 villages of Bangarpet taluk.

The principles tried in Redgram crop are lesser seed, transplanting seedlings of right age; wider spacing; weed management and sustainable agriculture practices which included in-situ soil and water management practices, seed treatment, use of bio agents etc.

To start with farmers were motivated to follow insitu soil and moisture conservation practices. Deep ploughing two times during land preparation helped in more retention of rainwater and facilitated the roots to go deeper into soil. Land smoothening was done at final tillage operation helped in avoiding stagnation of rainwater also controlling wilt disease. The farmers also followed cultivation across the slope

Interaction with farmers revealed that the main challenge in redgram was the time of sowing. Farmers could harvest good yields if they were able to sow during late May or early. Any delay in sowing affected yields badly. However, sowing was completely dependant on the receipt of rainfall. Rainfall being erratic in this region and good amount of rainfall is received only in the month of July, farmers were forced to sow during July, thereby harvesting low yields. To overcome this problem, farmers were guided to raise seedlings in polythene covers and transplant in the main field when seedlings are 30 to 35 days old after receiving good rains.

Role of SAPs and Rural youth

A number of trainings and study tours were organized to farmers to understand the impact of applying SRI principles in crops. Besides, AMEF has also identified local youth and trained them as Sustainable Agricultural Promoters. These youth who are part of the communities, work closely with the farmers in project villages providing continuous support through out the season. They are the key-persons in bringing the farmers for such innovative ideas.

Farmers were helped to procure seeds of improved varieties like BRG-1 and BRG-2 from the Agriculture University in Bangalore. Before sowing, seeds were treated with Rhizobium culture @25gms/kg of seeds for effective root nodulation. The seed rate used was 2 kg/acre which is about one-third less than what was being used conventionally.

Seedlings were raised in polythene covers during May/June and transplanted in the main field during July. The spacing of 2.5ft between plants and 3.5ft (even up to 4ft) between rows was followed.

Farmers took up the nipping of younger shoots after 30days of planting in order to encourage more number of branches. Intercultivation was done twice and sometimes thrice, with local implements and Cycle weeder.



A farmer displaying the harvest

Results

By following SRI principles, the growth of the crop was profuse. There were more number of branches per plant and the pod weight was significantly higher.

The yield increased by more than 70%. Farmers harvested around 6 quintals per acre while the normal average yield in the area was 3.5 quintals/acre.

Activities	Conventional method	SRI method
Sowing Method	Direct seed sowing after receiving of rains	Raising seedlings in polythene covers and later transplanting
Variety used	Both local & improved varieties	Improved varieties like BRG-1 and BRG-2
Seed rate (Kg/ Acre)	5 to 6 Kg	2 Kg
Seed Treatment	Not done	Done with Rhizobium @25 gms / Kg seeds
Planting	-	Planting of 30-35 day old seedlings
Spacing	2ft in lines only	2.5 ft X 3.5 ft
Weeding	Not done	Twice
Nipping	Not done	Done after 30 days of planting
Yield	*3.5 q/acre	6 q/acre

Also, there were fewer incidences of pest and disease during crop growth stage however during pod formation stage *pod borer* was observed. Farmers resorted to neem spray to control the pest, rather than high cost chemicals.

Lesser seed rate and decrease in use of external inputs reduced the cost of cultivation also considerably. With increased yield and reduced costs, the net incomes for the farmers increased.

A lot of people are showing interest in this method of cultivation. Farmers from neighboring taluks, districts and states (AP & TN) visited the SRI-Red gram plots. Staff from the Agriculture Department and the scientists from the University of Agricultural Sciences have also visited the plots. More farmers are now showing interest in adopting SRI in Red gram