

### **Success Story of CRIJAF Nail Weeder**

Goaldah is one of the predominantly jute growing village of North 24 Parganas district of West Bengal, where jute is intensively grown by majority of farmers in upland condition. From a long time, jute growers of the village were facing the problem of weed infestation in their field be it broad leaved or sedge type. Though, they had heard about pre and post emergence herbicides available in the market for jute crop but, they were not effective in their field situations restricting them to use it on a limited scale. Hence, they were forced to depend on manual weeding only which often result in delayed completion of weeding and reducing the farm profitability due to heavy dependency on manual labour.

Mr. Asit Sarkar, a 35 year old young and educated farmer of the above mentioned village was having 0.56 ha (5 bigha) land and earning livelihood from farming. He actively and regularly participates in various types extension activities be it, trainings or meetings held at block level as has eagerness to learn new things to increase his profit from farming. In this way, he came in contact with the Scientists of ICAR-Central Research Institute for Jute and Allied Fibres (CRIJAF), Barrackpore. He narrated his existing field problem of weed flora which was eating the profit from jute cultivation. He was asked about his earlier effort with respect to weed management. Thereafter, he was invited to our institute and have a look at our technologies regarding that. He visited our institute and liked the functioning of CRIJAF Nail Weeder. He requested the Extension scientists for its field demonstration in his field. The institute then demonstrated this technology in his field. CRIJAF nail weeder works on the principle of mechanical uprooting of germinating weed flora in broadcasted / line sown crops. First of all, Mr. Asit agreed to operate CRIJAF Nail Weeder in his 3 bigha (1 bigha=1333 m<sup>2</sup>) broadcast sown jute field whose soil was light in texture. By the time, his jute crop was around 8- 10 days old he operated the nail weeder and he couldn't believe that it took only three hours and two labours (including himself) to uproot the weed flora. After 3- 4 days, he himself collected the uprooted grass, weeds etc. and threw them. Therefore, practically only three man-days of labour were used to clean his 1333.33 sq. m. land (1 bigha). Whereas, in conventional way it used to be 8 – 10 man-days. On an average it took 3 hours to cover one bigha jute crop. However, the operational time varies according to soil texture, field capacity, density/stage of the crop and weeds. He operated the weeder four times after the interval of every five days. Excess unwanted jute as well as weed plants were uprooted during field operation of CRIJAF Nail Weeder. In initial stage, a line (width of around 4 inches) was made which further helped in carrying out intercultural operations. Uprooting of excess plants (beyond 60-70 jute plants/m<sup>2</sup>) helped in judicious utilization of available soil moisture and nutrients. Soil pulverization through nail weeder also helped in better air circulation in the soil and helped in the plant growth. In this way, Mr. Asit was able to eradicate more than 80% composite weed flora in early stage (initial first month) by saving around Rs.10,000/ha on manual weeding. It eliminated dependency over labour and herbicides. In the next year, fellow farmers approached him for his guidance and he gladly assisted them in field operations of CRIJAF Nail Weeder. Getting first hand successful experience in jute crop, now farmers are applying it also in other wide spaced vegetable crops like-lady's finger, french bean etc. Mr. Asit Sarkar has set up an example for other farmers. Since last three years, he has saved more than Rs. 30,000/ ha on manual labour besides saving on the cost of purchasing herbicides, that too around Rs. 10,000/ ha. Mr. Asit has now become a role model for other farmers of the village. He also shares his knowledge of new technology with other farmers

and helps the institute in dissemination of this technology for its Transfer of Technology (TOT) activities. He has been instrumental in motivating others by establishing the credibility of the technology in nearby areas.

**Economical evaluation of the technology for 1 ha area during 2013 -16**

Particulars	Without Nail Weeder	With Nail Weeder
Input Cost ( Rs./ ha)	Rs. 9300	Rs. 7672
Human Labour Cost ( Rs./ ha)	Rs. 70,416	Rs. 61,380
Total Cost of Cultivation ( Rs./ ha)	Rs. 79,716	Rs. 69,052
Avg. Fibre Yield (q / ha)	30.12	32.62
Increase in fibre yield	-----	8 – 10 %
Gross Return (Rs. / ha)	Rs. 91,013	Rs. 1,00,527
Net Return (Rs. / ha)	Rs. 11,297	Rs. 31,475
<b>Net Profit over conventional method</b>	-----	<b>Rs. 20,178 /- ha</b>

**Advantages of Mechanical Weeding with CRIJAF Nail Weeder**

- Controls 80 85 % weeds of inter-row space.
- Controls composite weed flora
- Saves labour requirement for weeding by 55 – 60 man-days
- Increase in fibre yield by 8 – 12 %



Saving in labour cost for weeding (Rs. / ha)	Gain due to Yield advantage (Rs. / ha)	Gross Profit (Rs./ ha)
55 man-days /ha x Rs. 200 = Rs. 11000	2.50 q/ha x Rs. 3000 /q = Rs. 7000	Rs. 18,000

- Commercial production & marketing by :
- Creative Displays, S N Banerjee Road, Barrackpore & Krishi Udyog, Howrah
- Unit price Rs. 1850 / pc



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