

SUCCESS STORIES...2013



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- Compilation and Editing** : **Dr. CR Mehta**
Project Coordinator, AICRP on **FIM**
CIAE, Bhopal
- Editorial Assistance** : Sh. YS Bhokardankar
Dr. GS Chouhan
- Word Processing** : Sh. AS Barod
Mrs. M Lohani
- Proof Reading** : Sh. YS Bhokardankar
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Hand Operated Winnower for NEH Region

Arvind Kumar
NEH, Barapani

Introduction

The rice is the main food grain crop of the NEH region and grown on an area of about 3.5 million ha which is around 10% of the total rice growing area of the country. The season-wise area under rice in Meghalaya during the years 2005-2010 is given in Table 6.1. Most of the paddy cultivation operations in the region are performed manually with the help of traditional tools and implements. Multipurpose dao, spade, hoes, sickles, country plough, bamboo made leveller and transporting baskets are the common hand tools and implements being used. Threshing of paddy is generally done manually by beating on wooden log and cleaning by natural wind breeze, which requires more labour and time.

Table 6.1 Season-wise area (thousand ha) under rice in Meghalaya during the years 2005-2010.

Season	2005-06	2006-07	2007-08	2008-09	2009-10
Kharif	90.9	94.5	94.8	95.3	95.4
Rabi	9.8	10.0	11.6	12.8	12.8
Total	100.7	104.5	106.4	108.1	108.2

The farmers of the region mainly depend on natural wind breeze for cleaning/winning of threshed paddy and other cereals, which is uncertain by nature. The winnowing/cleaning of paddy some times takes many days and is likely to be spoiled due to rain occurring during that period as the cleaning is done in the field itself. Use of hand operated winnower can complete the cleaning operation quickly saving time and labour requirement.

Traditional Practice
Traditionally for cleaning of paddy, the farmers of NEH region make a raised platform using bamboo frame and put a gunny bag filled with



Fig.6.1. Traditional method of cleaning paddy.

paddy on the platform (Fig. 6.1). One person stands on the raised platform and waits for natural wind breeze. When there is strong wind breeze, he releases the grains slowly from conical basket made of bamboo. The dust and other light weight impurities get separated due to strong wind and cleaning is achieved. This process is labour and time intensive and dependent on natural wind breeze. Therefore, there is a need of winnower which can complete the cleaning operation quickly without depending on natural wind.

Salient Features of Hand Operated Winnower

It is a manually operated hand winnower used for cleaning of threshed paddy grains and separation of husk, dust and other light weight foreign materials from paddy and other cereals and pulses (Fig. 6.2). It has a pair of sprocket and chain for increasing the speed of the fan blades to a ratio of 1:3. The use of chain and sprocket arrangement makes the operation of fan easier with less effort. Four blades each having a length of 610 mm are fitted to the fan. A fan guard is provided to prevent any accident. One person is required for the operation of this



Fig. 6.2. Winnower with chain and sprocket arrangement.

equipment while another person releases grains from height to enable the separation of dust and other unwanted light weight materials from the grain. The average output of the machine was 250-350 kg/h. The weight of the winnower is approximately 29 kg.

Status of the Technology

After the introduction of manually operated winnower with chain and sprocket drive, the farmers are able to complete winnowing operation quickly. Due to faster operation, it is gaining popularity among the paddy growing farmers of this region.

During the year 2012-13, 6 hand winnowers were fabricated at NEH, Barapani workshop and supplied to farmers in Meghalaya and KVK in Nagaland as per details given Annexure VI.

Success of Hand Operated Winnowers on Custom Hiring

The hand operated winnower was demonstrated to Mr. Dwan Khream and other farmers of Nongpyrdet village of Ri-Bhoi district of Meghalaya (Fig. 6.3). Mr. Dwan Khream was an illiterate farmer having 0.6 ha land, out of which 50% was plain and 50% sloppy land. He mainly cultivated paddy, maize, vegetables (French bean, cabbage and cauliflower) and broom grass. The farmer was very much convinced with the machine and purchased one number of winnower from NEH, Barapani for his own use. Seeing the performance of the machine, the other farmers were tempted to use it. Therefore, after completing his work quickly Mr. Dwan Khream started giving the winnower to other neighbouring farmers on rent @ Rs. 100/- per day. This way he could earn Rs. 1500/- during November-December, 2012 by renting the machine to other farmers.

Farmer's Feedback

- The equipment is easy to operate and maintain.
- It saves time, labour and money.
- The quality of cleaning is better than traditional way of cleaning.
- The equipment can efficiently be used for cleaning of threshed paddy, milled rice and other cereals and pulses.
- The equipment is not dependent on natural wind breeze for cleaning purposes.
- It is light in weight and easy to operate and transport.



Fig. 4.3. Cleaning of paddy by a farmer of Meghalaya using hand operated winnower.

Annexure VI

Supply of hand winnower to farmers in Meghalaya and KVK in Nagaland

S. No.	Users	Address	Quantity
1.	Mr. Philiti Marbaniang (Farmer)	Village Nongstaniang, Distt. Ri-Bhoi, Meghalaya	1
2.	Mr. Dwan Khream (Farmer)	Village - Nongpyrdet, Distt-Ri-Bhoi, Meghalaya	1
3.	Programme Coordinator, KVK	NRC on Mithun, Porba, Pfutsero, Nagaland	4