

REPORT

प्रशिक्षण /Training on

भीमल (*Grewia optiva*) रेशा निकालने की उन्नत तकनीकी

An advance technology for extraction of bhimal (*Grewia optiva*) fibre

on 17th Nov 2021

ग्राम भटौली में, केम्प्टी फॉल, मसूरी, देहरादून

at village Bhatauli, Kempty fall, Mussoorie, Dehradun

Grewia Optiva locally known as bhimal, bheku, bhimu or bihu is small to medium size deciduous tree with 9-12m height and mainly occurred up to 2000m in Himalayan region of India like Uttarakhand, Himachal Pradesh, Jammu and Kashmir. It is a multipurpose tree and generally grown on the boundaries of farmer's field and homestead. This species is hardy and provide quality fodder for livestock around the year, used as supplement in lean periods. It provides natural fiber, fuel wood, edible fruits and it also produces natural shampoo due to presence of a foaming agent saponin in bark which is medicinally tested for dandruff control in hair. Traditionally, its natural fibre is used to spin ropes, weaves mats, doormats, boots, chappal/slippers, shawls and door curtains etc. from dates back to hundred years. Fibre yielding species like bhimal is contributing to both domestic requirements and income generation for livelihood and playing a key role in the village economy. Demand for fibre of bhimal in Himalayan region is growing up day by day and small scale industries are entering in production process, which has created good economic value of the species. NGOs and Self help Groups are entered in the making of various products from fibre of bhimal. Owing to there is an urgent need to encourage this art of making fibre among people for enhancing their income in better way. In addition, it also helps to stabilize the soil and the environment.

Bhimal fibre is extracted by using traditional method. Farmers cut the twigs and remove leaves of bhimal for use as fodder. After taking the fodder from twigs, they usually collect twigs and make bundles for putting into khall or gadhera (pond). These bundles are completely drowned in gadhera for more than 90 days. After taking out these bundles, fibre is extracted and dried in sunlight.

Undoubtedly, Bhimal is an intrinsic part of villagers giving implicit services in the Himalayas. But, neither villagers have any sustainable harvesting technique nor specific technique to extract the fibre from bhimal. The traditional retting method by which, they extract the fibre, consumes more time and new generation think; it is done by old men only. The local people continue to collect fibres from trees_naturally grown traditional retting method. In addition, Shampoo cannot be collected by this method. Besides this, the young generation is generally not very keen at inheriting this craft and migrating towards cities for instant cash earning.

Following technique is showing the extent of sustainable raw material production, processing and marketing of bhimal fibre, which can support the rural livelihood in the remote area of Uttarakhand.

Keeping in of above an advance technology for extraction of bhimal (*Grewia optiva*) fibre has been developed by forest research Institute, Dehradun and a training programme has been fixed demonstrate the technology developed at village bhatauli, kemptyfall, Mussoorie, Dehradun on 17th November 2021.

Ms. Kanhkashan Naseem, IFS DFO, Mussoorie was the Chief Guest of the training programme. In the onset of the programme Dr. Charan Singh, Head, Division Extension, FRI welcomed the chief guest and all the participants of the training. He also delivered the lecture on “Agroforestry with bhimal, livelihood improvement and utilization of bhimal fibre”. He explained well on benefits of agroforestry with the bhimal tree and various uses of fibre in modern age and generates the income. Thereafter, Dr. Devendra Kumar, Scientist E who is PI of the project and developed the fibre extraction technology delivered a lecture on “An advance technology for Extraction of bhimal (*Grewia optiva*) fibre through Eco friendly method”. He explained well fibre extraction technology developed and carried out live demonstration of Steam Explosion Treatment Machine (SETM). He explained SETM operation as follows:

Take 25 to 30 kg bhimal twigs, open the lid of drum and put them inside the drum. Lid of drum should be closed tightly. Set the temperature. Generally 151 °C are kept. Switch on the compressor after ensure water connectivity with the compressor. Water is sucked by compressor and takes 40 to 60 minutes to generate the steam. Check the meter of compressor if it is ok then valve of compressor is to be opened to inject the steam into drum through high pressure tube. Run it for 1 hr for green bhimal twigs and 2hr for dry bhimal twigs. After the incubation time release the steam immediately from durm and after 10 to 15 min lose screw of lid of drum and remove carefully. Take out the bhimal twigs from drum and remove bark from all twigs within 15 to 30 minutes. Collect the bark and put again into drum to agitate half an hour for obtaining saponin. Collect the saponin from bottom of the drum where valve is available to drain it. Thereafter, take bhimal bark and put into a steel pot and add one or two spoons of washing powder per litre and heat it for one hour. After one hour wash manually bhimal bark and get good quality fibre. Dry it in sun. To run 3 hour only consumes 17 units that fall Rs. 51 for 10 to 20kg of bhimal twigs steaming and agitating for obtaining saponin and fibre. The consumption of electricity may be reduced automatically when increase the attempts of steaming process. The washing powder cost is of Rs. 30-50 per kg. When we collect the saponin and sale out it in market then our profit automatically will be increased and input cost will become zero. You are in win win situation if you take as business to extract the bhimal fibre. This is the fastest method to obtain fibre within a day from bhimal twigs to support the livelihood. He showed live demonstration of SETM and within total 3 hours fibre was in hand of trainees. He also showed calculation of economics in the presentation.

The chief guest addressed the gathering and she was very confident that fibre extraction technology developed by FRI will be useful for villagers for their livelihood improvement and definitely it may check the migration upto some extant. She also announced if trainees are interested then State Forest Department of Uttarakhand may be made available a SETM and donate it to villages for their improvement of livelihood. There were 40 participants in this training. All the trainees were happy to hear this technology and promised to work on it.

Vote of thanks was delivered by Dr. Charan Singh, Head, Extension Division, FRI. Anchoring was done by Dr. Devendra Kumar, Scientist E and PI Extension Division, FRI. Other staff member of Extension Division, FRI such Mr. P.P. Singh, RFO, Mr. Anil Kumar, Lab.Astt. and Mr. Sarwar Ali, JPF were contributed a lot to make training successful.

प्रशिक्षण की झलकियां
The glimpses of training:



The poster features two logos at the top: the Forest Research Institute (FRI) logo on the left and the Forest Research Institute, Dehradun logo on the right. The background is a lush green forest. The text in the center reads: "एक दिवसीय रोजगारोमुखी प्रशिक्षण कार्यक्रम भीमल (*Grewia optiva*) से रेशा निकालने की उन्नत तकनीक दिनांक : 17 नवंबर, 2021 आयोजन स्थल ग्राम भटौली, केम्प्टी फॉल मसूरी, देहरादून (उत्तराखंड)". At the bottom, it states: "आयोजक: विस्तार प्रभाग, वन अनुसंधान संस्थान, देहरादून (उत्तराखंड) Organizer: Extension Division, Forest Research Institute, Dehradun (Uttarakhand)".







