

COTTON *Innovate*



Weekly Newsletter from Central Institute for Cotton Research, Nagpur

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RESEARCH ROUND UP

Bike handle Trimmer - mechanical weeding in cotton

Cotton (*Gossypium hirsutum* L.) being the most important commercial crop of India contributes to around 60 per cent of the raw material to the textile industry and provides employment to nearly 60 million people with productivity of 552 kg/ha. Cotton crop needs weed free situation up to 60 DAS (critical period) to produce higher yield. Cotton, being a labour intensive crop, requires on an average 240 man days per hectare from planting to picking. Labour scarcity at critical stages of weed competition and higher wages result in poor weed control and higher cost of cultivation for the growers. Analysis of component wise cost of cultivation revealed that human labour, animal power and mechanical power constitute 40-50 per cent of total cost. More than the cost involved, the availability of agricultural labour is of greater concern. In addition, drudgery involved in weeding (heart rate 114 beat/min) is above the physiological critical threshold level. Application of pre emergence herbicide under rainfed condition has limitation because of insufficient soil moisture. The continuous incessant rain may not permit manual weeding or mechanical weeding by animal drawn/ tractor drawn implements because of poor workability of soil in most of the situation. The situation warrants for selective post emergence/self propelled machine for weeding. The Bike handle trimmer may suit for the purpose.

Bike handle trimmer is a self propelled machine with a displacement of 40.2 cc, engine power of 1.6 kW, weight of 6.3 kg, fuel capacity of 640 cc and cutting swath of 16.5". Bike handle trimmer have starter handle, fuel primer bulb and electronic ignition providing quick and comfortable starts. The carburettor is designed to automatically adjust the fuel/air ratio when the air filter becomes clogged and maintains the engine's correct RPM for maximum performance. And its bike-handle design with soft-grip handles makes it easy to complete large weeding with less time. The machine has good balance and can be handled with little effort. The performance of bike handle trimmer was tested for weeding at CICR, Coimbatore. The machine could cover one hectare of land for weeding at the stage of 20 days old weeds within 12 hours by consuming six litres of fuel. The cost of weeding is estimated as 2000/ha by the trimmer. The recently available post emergence weedicide application (tank mixing) of quizalofop-ethyl @ 50 g/ha and pyriithiobac sodium @ 75 g ai /ha at 30 DAS costs about 3700/ha. Manual weeding costs about 5000/ha. Weeding by bike handle trimmer is cheaper by 46 and 60 per cent respectively as compared to manual weeding and post emergence application. In addition, the weeds removed by the trimmer act as bio mulch and aid in moisture conservation.

A.H.Prakash, SESA Khader, K.Sankaranarayanan and Karthick
CICR Regional Station, Coimbatore-641 003



SCIENTIFIC TALKS

Scientific Talks were delivered by Dr. Anuradha Narala, Scientist, Agricultural Economics, and Ms. Swetha, RA, Biotechnology Section, CICR, Nagpur under the aegis of CICR innovation cell on 5th July, 2014.

Dr. Anuradha Narala, in her wild idea “**Waste Plastic Mulching Material for Agricultural Purpose**” opined that cotton stalk can be binded with plastic wastes at higher temperatures to be used as a cheaper alternate to polyethylene mulching. The thermal stability, softening temperature and binding property of plastic wastes make it suitable to be binded with cotton stalk aggregates to produce waste plastic resulting in useful way of disposal of plastic wastes.

Ms. Shweta Chhajed, in her wild idea on “**Space Cotton farming: A World with a different angle**” provided an insight into the world of biological research being carried out in space. Space agriculture is one solution which offers huge advantages for long duration space travel. The International Space Station (ISS) located in the lower orbit of the Earth serves as a microgravity and space environment research laboratory in which crew members conduct experiments in biology, human biology, physics, astronomy meteorology and other fields. She proposed the idea of space farming of cotton as cotton plant has appropriate size, grows rapidly and is well studied. Ms Shweta considered cotton plant perfect model for plant cell research at microgravity. Cotton farming on moon will gather more insight into the fundamental biological systems and processes inside the plant so that we can learn more about plant growth here on Earth, and improve our crops.



TRAINING PROGRAM FOR TRIBAL COTTON GROWERS



A training program on “Integrated Cotton Management Practices” for tribal cotton growers was conducted at CICR Regional Station, Coimbatore during July 03-04, 2014 under All India Coordinated Research project on Cotton (AICRP) – Tribal Sub Plan (TSP). Twenty tribal cotton growers from Sadivayal, Thondamuthur villages of Coimbatore District participated in the two days programme. A total of 12 lectures by scientists and a field visit were included in the programme. The importance of quality cotton seed for higher productivity, physiological disorders of cotton and their management and agro techniques for increasing the yield in cotton were dealt well in the training. In addition much information was given on the novel technology – High Density Planting System (HDPS) in cotton. Information on IPM / IRM strategies, emerging pests and their management and nematodes management were also given to the trainees. The trainees visited the trials of pruning techniques in the CICR farm. The trainees were explained about e-Kapas network and all of them joined willingly in the e-Kapas program. The researchable problems in cotton identified with the participation of farmers in Best Cotton Cultivation Program were also dealt by Mrs. Vasantharekha, Assistant Director of Agriculture, Thondamuthur block and Mr. Senthilkumar, Livelihood Facilitator from Department of Rural Development in the training program.

Drs. A.H. Prakash and S. Usharani

MOU WITH DR. P.D.K.V. AKOLA FOR SEED PRODUCTION

CICR, Nagpur entered into MoU with Dr. P. D. K. V, Akola for seed production of AKH 081. The MoU was signed on July 4, 2014 by Dr. K. R. Kranthi, Director, CICR and Dr. P. G. Ingole, Director of Research, Dr. P. D. K. V. Akola in the presence of witnesses Dr. D. T. Deshmukh, Dy. Director of Research, Dr. Suman Bala Singh, Pr. Scientist and Head I/c, Division of Crop Improvement, Dr. P. R. Vijaya Kumari, Pr. Scientist and Dr. V. Santhy, Sr. Scientist, Division of Crop Improvement, CICR, Nagpur. Dr. Sandhya Kranthi, Head, Division of Crop Protection was also present.



MEETINGS ATTENDED

Dr. K. R. Kranthi, Director, CICR, attended the meeting regarding Demonstration of High Density Planting System (HDPS) at Directorate of Cotton Development (DOCD), Mumbai on 1st July, 2014.

Dr Rishi Kumar, Sr. Scientist (Agril Entomology) delivered a talk on the pest management in cotton to 25 Agriculture Development Officer at Haryana Agriculture Management and Extension Training Institute (HAMETI), Jind on 30th June, 2014.

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Chief Editor : Dr. Nandini Gokte-Narkhedkar

Editors : Dr. J. Annie Sheeba, Dr. Vishlesh Nagrare, Dr. J. Amudha, Dr. M. Saravanan

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Post Bag No. 2, Shankar Nagar PO, Nagpur 440010

Phone : 07103-275536 Fax : 07103-275529; email: cicrnagpur@gmail.com