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NEWS IN BRIEF

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FROM THE DIRECTOR'S DESK

Dr. S. Satpathy, Director (Acting), CRIJAF

Central Research Institute for Jute and Allied fibres (CRIJAF) is the apex institute of Indian Council of Agricultural Research (ICAR) which carries out research work for developing production technologies to enhance the productivity of jute and allied fibre crops (mesta, flax, sunnhemp, ramie, sisal). Since its inception from 1938, CRIAF is striving hard for technology development specifically for marginal and resource poor farmers of jute and mesta growing belts of India. Because of concerted efforts of the scientists of CRIJAF and AINP on Jute and Allied Fibres, the raw jute production of the country just doubled in last five decades from 5.16 million bales (1960-61) to 11.82 million bales (2009-10).

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FROM THE DIRECTOR'S DESK

Intensive efforts of CRIJAF scientists resulted in identification of one new *tossa* jute variety, JRO 2407 (Samapti) and a kenaf variety, AMV 7 during 2011. Out of these three varieties, JRO 2407 and AMV 7 were released by Central Variety Release Committee (CVRC).

Since jute has narrow genetic base, to create more variability in traits of economic importance various mutants like soft stem, hard stem, twisted ribbon, dwarf mutants etc. were developed at CRIJAF through gamma radiation in *tossa* jute. These mutants will help in understanding fibre development pathway in jute.

Till recently, the *tossa* jute variety JRO 524 was the most preferred one by the farmers of the state. The persistent efforts by CRIJAF scientists could convince the farmers about the superiority of other recently bred jute varieties. CRIJAF took initiatives to produce quality seeds of these superior varieties at its head quarter and substations and conducted several FLDs at its extension centres to impress upon the farmers. These awareness programmes resulted in large demand of new jute varieties.

With the initial success of pilot studies on jute seed production sponsored by the state and the central schemes in the district of Bankura and Purulia, for larger production of seeds of new jute varieties, CRIJAF has undertaken a new research project on jute seed production in drier tracts of the state under RKVY programme. I hope the success of this programme will make the state self-reliant in quality jute seed production and also open up avenue for more profitable agriculture to the tribal farmers of the districts.

Training and demonstrations on application of mulch for moisture conservation in jute field and application of elemental sulphur for nutrient management in jute at different extension centres of the institute were conducted to enhance the productivity of jute under limited irrigation and rainfed conditions with encouraging results.

Per capita availability of arable land is reducing day by day particularly in South East Asian Countries making agriculture less profitable. Submerged rice fields are unsuitable for cultivation of dicot vegetables because of its anaerobic nature. Crop diversification in waterlogged rice field may strengthen rice farmers' livelihood. Early establishment of cucurbits and other vegetable (Solanaceae and Malvaceae) crops (beyond 40-60 days) within rice field on soil columns can easily escape cool temperature, thus ensure good harvest and fetch higher return in early winter months (November to February). Efforts were made to utilize jute fabrics for raising soil columns in submerged rice fields for crop diversification.

The long duration vegetable crops grown on soil columns made effective use of resources applied in rice field with reduced irrigation requirement due to their long association (2-3 months) with dwarf/ semi dwarf rice. Using these systems, cucurbits, solanaceous and leguminous vegetable were successfully grown in waterlogged rice field in rice-vegetable relay system.

A ready reckoner for different yield targets of high yielding variety of jute (JRO 204) was developed to guide the resource-poor jute farmers of eastern India for judicious use of fertilizers. In order to reduce the labour requirement in ramie cultivation, RRS, Sorbhog designed and developed the tractor operated furrow opener by modifying existing nine tine cultivator. This technique will not only help to reduce labour cost in ramie but also regulate the planting depth and spacing.

FLDs on improved jute retting with talc based microbial formulation developed by CRIJAF was successfully demonstrated in jute growing districts of West Bengal. By this improved retting technique the period of retting was reduced by more than seven days with improvement in fibre colour and quality.

CRIJAF also organized several meetings, national level trainings and demonstrations during this period in collaboration with other departments and agencies to educate farmers and other stakeholders in jute and allied fibres production, protection and postharvest techniques.

Various field days and seed days were also organized at CRIJAF head quarter and its sub stations to enlighten the farmers about jute seed production technology.

CRIJAF is entrusted with the responsibility of educating people through its publications on basic, strategic and applied research on jute. In this endeavour, *Jaf News*, the CRIJAF newsletter plays a major role in disseminating the recent technologies developed at CRIJAF and elsewhere in India to far away places, besides creating awareness about the ongoing research activities of CRIJAF. I congratulate the editors and the contributors for excellent compilation and editing of the *JafNews* in a more informative manner.

I gratefully acknowledge the efforts of the Prof. B. S. Mahapatra whose leadership materealised many important events and achievements for the institute during this period.

S. Satpathy
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Date : 22.02.2014
Place : Barackpore

Interview with Dr. B. Senapati, former Vice-Chancellor, OUAT, Bhubaneswar, Odisha

Dr. B. Senapati, former Vice-Chancellor, Odisha University of Agriculture and Technology, Bhubaneswar is an eminent Agricultural Entomologist having immense contribution in the field of crop pest management. Most of his technologies are widely adopted by the farmers of Odisha and other states of the country. Dr. Senapati as a renowned academician and research manager made valuable contributions in different capacities of the university. He served as chairman and member of teams/committees of ICAR, Department of Biotechnology, UGC and Govt. of Odisha. In addition to toxicology, he has contributed immensely in the areas of integrated pest management (IPM) for pest complex of field and horticultural crops, storage entomology and bio-ecological studies. He has been associated with CRIJAF as a member of Institute Management Committee (IMC), Research Advisory Committee (RAC) and Quinquennial Review Team (QRT) during last 15 years and played important role in formulating research programmes, emphasizing priority areas of research on jute and allied fibre crops. It was a learning experience while interacting with him for his views about the "Golden Fibre of India" and here are the excerpts:

Sir, you have remained associated with CRIJAF for so long, what you feel the most important contribution(s) of CRIJAF for enhancing fibre production of the country?

India ranks first in terms of area and production of raw jute. It alone contributes about 60% of the world's raw jute production. The production of raw jute has been increasing gradually over the decades. Central Research Institute for Jute and Allied Fibres (CRIJAF) entrusted with the responsibility of technology development on jute and allied fibre crops in India has played the primary role in developing appropriate technology relating to crop improvement, crop production and crop protection, adoption of which resulted in increasing raw jute production in the country. CRIJAF-bred jute varieties in tandem with the production and protection technologies have contributed immensely to achieve the landmark production of over 110 lakh bales/annum as against only around 35 lakh bales during 1950s. The productivity of jute and mesta has increased to almost double of that produced during the time of independence to 24 q/ha and 11q/ha, respectively, by the continuous research efforts of CRIJAF.

Dr. B. Senapati, former Vice-Chancellor, OUAT, Bhubaneswar during interaction with Prof. B. S. Mahapatra, Director, CRIJAF, Dr. S. Satpathy, Principal Scientist & Head, Crop Protection Division and Dr. Hariom Sharma, Scientist

What are the major researchable areas with respect to jute farming that deserve attention in the near future?

There are some thrust areas of research on jute and allied fibre crops production. CRIJAF is addressing some of the issues. The work on development of location specific high yielding varieties should be continued. The varieties developed should be photo-insensitive and early flowering resistant. Research on marker assisted selection leading to isolation of promising recombinants to be further strengthened.

Work on the possibility of evolving jute strains having lower lignin content in the fibre in an attempt to improve the quality is a necessity. Physiological work on screening of germplasm with efficient photorespiration, photosynthesis towards identifying for future breeding work and better entries to combat the changing climatic scenario needs attention of researchers. Research efforts must have to be intensified for developing varieties suitable for alternative uses *i.e.* in paper industry, vegetable purpose, animal feeds etc. so as to enhance demand of the crops.

Crop production protocols for both jute fibre and jute seed to address the predominant abiotic and biotic stresses are to be standardized. It is necessary to explore the possibilities of jute seed production in the jute growing states and for which, cost effective seed production technology needs to be developed. Besides, it is also necessary to provide good quality seed to the farmers at reasonable price on time. Suitable retting technology with low volume of water needs to be developed. So far CRIJAF's progress in this direction is appreciable. The existing ribbon retting technology needs to be improved to make it cost effective.

Emphasis may be given for transfer of technology and popularization of the new varieties. In addition, proper support needs to be given to the farmers for adoption of novel technologies and high yielding new varieties. It is necessary to develop the marketing infrastructure so that the farmers can get remunerative prices for their produce. The diversified jute products should be commercialized with the development of modern technologies in order to make them cost effective. Social Science Research particularly economics of jute cultivation and Extension Research for quick popularization of the technology, needs to be initiated.

Sir, what could be the ideal research model for promoting the cause of jute?

ICAR institutes, SAUs, and other universities undertake research programmes to address the problems of jute production. Validation of the developed technology in multiple places in the farmers' fields is necessary. Therefore, ICAR institutes, SAUs, other universities and other stake holders of jute should work together for this purpose. Dissemination of developed technology to the farmers also needs close cooperation among all the different stake holders associated with jute production. This approach of research is visible in the model of All India Network Project on Jute and Allied Fibres and in the execution of Jute Technology Mission, Mini Mission-I.

Being the lead centre of, AINP on JAF, CRIJAF guides nine SAU based research centres to validate the production cum post-harvest technologies across the country. CRIJAF is disseminating its advanced technologies through FLD programmes in collaboration with the Directorate of Jute Development (DJD), Kolkata. CRIJAF is having close ties with 13 collaborating centres comprising 8 SAUs, 4 traditional universities and 2 ICAR institutes to execute the Technology Mission on Jute, Mini Mission-I which is appreciable.

Since jute is grown by small and marginal farmers, it is essential that the government of India needs to fix minimum support price (MSP) to safeguard the interest of growers. What is your opinion in this regard?

Yes, when the Minimum Support Price (MSP) is fixed the interests of growers and consumers are taken into consideration. Of course, remunerative price must have to be ensured to the jute growers who are small and marginal farmers. The cost of cultivation is ever increasing. The profit out of jute crop is less. Market price of raw jute is highly fluctuating. The MSP for raw jute of TD-5 grade is fixed every year by the Commission for Agricultural Costs and Price (CACP), Department of Agriculture & Cooperation, Govt. of India. It has to be proposed before the Commission on the basis of number of farm families involved in the cultivation of these crops and their annual production. All concerned should be careful in proposing the rate to safeguard the interest of growers and consumers.

Do you think that the jute seed production needs to be strengthened in the fibre producing states (i.e. non-traditional areas) of India? CRIJAF has initiated efforts in pilot scale to explore possibility of seed production in drier tracts of the state. How do you look at this effort?

Non availability of quality seeds is one of the important issues to be addressed to realize the maximum yield potential of high yielding jute varieties. Although West Bengal ranks first in terms of area (71%) and production (81%) of jute, almost the entire quantity of seed is produced in Andhra Pradesh and Maharashtra. Many areas under jute seed in Andhra Pradesh and Maharashtra are being diversified for other crops posing serious threat to jute fibre growing states. It is learning to know that drier tracts in Purulia, Bankura, and West Midnapur districts of West Bengal have been identified as potential areas for jute seed production by CRIJAF and adoption of "Jute seed production technology" in these non-traditional areas is expected to meet the target of 55% of certified seed requirement of the state in the near future. A viable roadmap is possible in consultation with all the stakeholders in the jute seed sector. The universities and CRIJAF can reinforce their efforts for better seed yielding technologies for West Bengal. Seed industry and developmental agencies also have greater role to play in this front. State Govts and SAUs of the concerned states are to make sincere efforts to produce jute and mesta seeds at least to meet their requirement.

Sir, you have watched CRIJAF so closely for so long. How you look at the progress made by the institute over last few years?

CRIJAF is moving in right direction to address the various issues of jute and allied fibres farmers. CRIJAF has bred quite a few superior varieties suitable to address different requirements. Institute has taken required efforts to popularize the new varieties by opening up extension centres in major jute growing districts. CRIJAF has developed different technologies to suit to different socio-economic and agro-climatic situations for jute and allied fibres cultivation. CRIJAF, of late, has put earnest efforts to promote the causes of allied fibre crops. The acreage under allied fibre crops has gone down to an alarming extent. Recent efforts during last few years by CRIJAF to increase the acreage of allied fibre crops are appreciable.

CRIJAF has taken timely initiation of Biotechnological research for improvement of jute and allied fibre crops. The current seed production programme of CRIJAF will promote and popularize the new jute and allied fibre varieties among the farmers. The All India Network Project on Jute and Allied Fibres is performing appreciably in coordinating multi-locational research activities conducted in ICAR and SAUs based centres. CRIJAF has made right efforts in protecting the intellectual property rights of the institute. The publication quality of the institute has also improved markedly over last few years. The infrastructure of the institute both in terms of laboratory and farm development has made remarkable improvement.

Could you please express your vision about the future of jute and allied fibres?

Jute being the natural fibre is biodegradable and non-toxic thus is an environment friendly crop. People worldwide are more concerned with the ecological degradation and hence, trying to overcome this problem by accepting the natural products. Jute has bright prospect in this regard. However, the traditional and diverse uses of jute have to be made cost effective for its commercialization and popularization besides withstanding the stiff competition posed by the synthetics.

Jute and allied fibres have not yet been properly utilized in the field of product diversification. Jute and other natural fibres owing to their annual renewability and eco-friendliness have great prospects in geo-textiles, agro-textitles, bio-composites, bio-fuels and other value added products. It is beyond doubt that the tremendous potential of jute plant in sequestering the atmospheric carbon will certainly receive worldwide appreciation in combating the global warming.

The demand for jute fibre in its traditional use as packaging material is also increasing day by day as the food grain production is increasing over the years in the country. It is heartening that in recent past the market price for jute touched the all-time high of Rs.3300/quintal. I have confidence that the jute and allied fibres are having bright future as packaging material also as the peoples mind set has changed towards the eco-friendly, bio-gradable materials for food grain packaging.

In totality, given the increasing public awareness about advantages of using the ecofriendly natural products, the technological advancement along with the prospect of jute in producing diversified products, its compatibility in the context of climate change and last but not the least, the encouraging price the raw jute has fetched in recent past despite its due share of constraints, I am very hopeful that jute has immense possibility to flourish in the years to come.

Farmers' Day at CRIJAF

CRIJAF organized "Farmers' Day" on 30th July, 2011 with the prime objective of disseminating the improved production cum post-harvest technologies among the jute farmers of West Bengal. More than 150 progressive farmers from jute growing districts of West Bengal, *viz.* Nadia, Hooghly and 24-Parganas (N) participated in the programme besides representatives from NGO's and jute industries. Prof. B.S. Mahapatra, Director, CRIJAF welcomed the dignitaries and farmers and briefed the house about recent developments in jute and allied fibres research at CRIJAF and its substations. Padmashree Dr. E. Siddiq, former DDG (CS), ICAR; Dr. R. Raghava Reddy, former Vice-Chancellor, ANGRAU, Hyderabad; Prof. S. K. Sanyal, Vice-Chancellor, BCKV, Mohanpur; Dr. C. S. Chackrabarti Vice-Chancellor, WBUA&FS, Kolkata; Dr. A. P. Sharma, Director, CIFRI, Barackpore and Dr. S. K. Biswas, Director, DJD, Kolkata addressed the farmers and scientists during the inaugural session of the programme. "Best Farmer" award was conferred to five farmers who had excelled in jute farming during 2010 cropping season.

Padmashree Dr. E. Siddiq, former DDG (CS), ICAR addressing farmers

Prof. B.S. Mahapatra, Director, CRIJAF presenting best former award

Interactive session between the farmers and the scientists of CRIJAF was also organized to clarify the queries of the farmers about the improved package of practices and plant protection measures for jute and allied fibres production. The programme ended with the concluding remarks from Dr. S. Ghosal Chowdhury Principal Scientist and in-charge, Agricultural Extension Section, CRIJAF.

Courtesy: **S. Ghosal Chowdhury**
Central Research Institute for Jute and Allied Fibres, Barrackpore, Kolkata

Farmers' Training on Improved Production Technology of Ramie

A farmers' training on ''Improved Production Technology of Ramie'' was organized at Ramie Research Station (CRIJAF), Sorbhog, on 25th & 26th August, 2011. About 20 progressive farmers and educated rural youths from Lakhimpur, Sonitpur, Dhimaji & Barpeta Districts of Assam participated in this training program. Prof. B. S. Mahapatra Director, CRIJAF was the chief guest of the inaugural function, he emphasized on the need of Public-Private-Panchayat Partnership, Farmers Participatory Approaches and Industry-Institution Initiative approaches for popularization of this industry based crop, Dr. Ranjit Sarma, Program Coordinator, KVK, Howly (Barpeta) and Mr. Hemanta Kalita, Secretary of a NGO, were the other dignitaries.

Inaugural address by Director, CRIJAF

MEETINGS/WORKSHOPS/TRAININGS etc.

Dr. A. K. Sharma, Scientist in-charge of the research station in his welcome address briefed about the ongoing research and development activities on ramie.

Lectures as well as practical demonstrations on different techniques of ramie cultivation, pest management, processing (decortication and degumming), diversified uses of ramie, finance, marketing *etc*. were arranged. Ramie seeds and rhizomes were distributed to the famers. A training manual on ramie cultivation was published in local language and distributed to the farmers.

Dr. A.K. Sharma explaining improved production technology of ramie

Courtesy: **A. K. Sharma** and **S. P. Gawande**
Ramie Research Station (CRIJAF), Sorbhog, Assam

Hindi Week Celebration at CRIJAF

Hindi week was celebrated during 14th-20th September, 2011 at CRIJAF, Barrackpore to promote Hindi as official language. Dr. S. Satpathy, Head, Division of Crop Protection, inaugurated the programme. Dr. V. S. Mishra, Principal, Kendriya Vidyalaya, Barrackpore graced the inaugural session as chief guest.

Dr. S. Satpathy welcome Chief Guest Dr. V. S. Mishra

Dr. S. K. Pandey, Senior Scientist & in-charge, Hindi Cell, highlighted the progress made in using Hindi as official language at CRIJAF and its substations. Various competitions such as Hindi extempore, dictation, translation, debate, self-written notes and their reading, and substitute words were conducted and prizes were also distributed to the winners for encouragement. Shri Ravi Kumar, Chief Administrative Officer, in his address highlighted the importance of Hindi and explained the responsibility of government officials to spread the language. Valedictory function was held on 20th September, 2011 under the chairmanship of Prof. B. S. Mahapatra, Director, CRIJAF. He congratulated the participants of various competitions for their interest in the national language. The seven day long Hindi week celebration ended with an assurance of promoting the national language to the extent possible in the day to day official work.

Courtesy: **S.K. Pandey**
Central Research Institute for Jute and Allied Fibres, Barrackpore, Kolkata

World Food Day Observation at CRIJAF-KVK, Burdwan

Krishi Vigyan Kendra of CRIJAF, Burdwan, West Bengal celebrated the ''World Food Day'' on 16th October, 2011 to highlight the means to tackle prevailing poverty and hunger in the country. Dr F. H. Rahman, Programme Coordinator of the KVK, informed that F.A.O. selected "Food Prices: From Crisis to Stability" as theme of 2011. He expressed con cern over ever increasing food prices and its non-availability. To mitigate the effect of price volatility, house felt that national or regional safety nets possibly featuring emergency food reserves can help assure food supplies to needy and vulnerable population during crisis. The scientists took the opportunity to elaborate the need of scientific fish culture towards sustained and profitable fish production in the region. Seventy farmers took part in the programme.


Farmers-Scientists interaction on World Food Day at KVK, Bud Bud

Courtesy: **F. H. Rahman** and **C. Jana**
Krishi Vigyan Kendra (CRIJAF), Budbud, Burdwan

MEETINGS/WORKSHOPS/TRAININGS etc.

Training on Technological Advances in Production of Jute and Allied Fibres

National Level Training on ''Technological Advances in Production of Jute and Allied Fibres'' was organized in collaboration with Directorate of Jute Development (DJD), Govt. of India during 17th-21th October, 2011 at CRIJAF, Barrackpore. Sixteen participants from various states including West Bengal, Bihar, Orissa, Uttar Pradesh, Andhra Pradesh, Tripura and Nagaland attended the training programme. In his inaugural speach Prof. B. S. Mahapatra, Director, CRIJAF emphasised the need of adopting modern technologies of jute production for better profitability. The trainees were enlightened about the latest crop production and protection technologies of jute and allied fibre crops developed and commercially available at CRIJAF. A visit to Gloster Jute Mill at Bauria, Howrah, West Bengal was also arranged for the trainees in order to make them aware about different jute products and quality requirement of jute and allied fibres for industrial uses. The training programme was coordinated by Mr. S. K. Laha, Principal Scientist and in-charge, Agricultural Extension Section, CRIJAF.

Inaugural address by Prof. B. S. Mahapatra, Director, CRIJAF

Trainees with the Director, CRIJAF

Courtesy: **S. K. Laha**
Central Research Institute for Jute and Allied Fibres, Barrackpore, Kolkata

Seed Day at Central Seed Research Station for Jute and Allied Fibres, Budbud, Burdwan

''Seed Day'' was organized at Central Seed Research Station for Jute and Allied Fibres (CSRSJAF), Budbud, Burdwan, West Bengal on 26th November, 2011 under ICAR sponsored AICRP on ''Seed Project (Crops)'' to emphasize the need for quality seeds in increasing the jute fibre yield and to enlighten the farmers about their rights on plant variety protection. As many as 200 farmers and government officials involved in agricultural research, education, certification and distribution of seeds, participated in the programme. Further, the participants were given exposure to the methodology of nucleus and breeder seed production, conducting grow-out tests (G.O.T.) for observing the purity of breeder seed, during field visit. In the technical session, different aspects of seed production, certification etc. were dealt by different speakers with special reference to jute and allied fibres. Technical session was followed by farmers-scientists interaction meeting.

Inaugural address by Director, CRIJAF

Dr. A. Bera explaining seed production technologies to farmers

Courtesy: **A. Bera** and **C. S. Kar**
Central Seed Research Station for Jute and Allied Fibres, Budbud, Burdwan
Central Research Institute for Jute and Allied Fibres, Barrackpore, Kolkata

MEETINGS/WORKSHOPS/TRAININGS etc.

Farmers' Training and Monitoring of Jute Seed Production at Bankura, West Bengal

The climatic condition of the drier tracts of Purulia and Bankura districts of West Bengal are suitable for jute seed production. CRIJAF had undertaken research project "Adaptive Research on Jute Seed Production in West Bengal" sponsored by Directorate of Jute Development (DJD) under Jute Technology Mission (MM-II) for production of jute seeds of new varieties at these drier tracts. As jute seed crop is totally new to the farmers of the area, selected farmers were trained by CRIJAF scientists on modern technologies and packages of practices for jute seed production.

ADA Puncha, Purulia, West Bengal and CRIJAF scientists discussing with the farmers of Arjunjora village regarding jute seed production

Monitoring team inspecting jute seed plot at Sares village, Bankura

Five training programmes on jute seed production during end-August to early-September, 2011, were conducted at different villages of Purulia and Bankura districts under the project. Farmers were motivated and encouraged to go for jute seed production as a cash crop. They were advised to grow jute as seed crop in upland to midland of that area to avoid crop loss from waterlogging.

A monitoring team visit-cum-field day was organized on 4th December, 2011 at Sares village in Onda block of Bankura district in West Bengal. A total of 150 farmers attended the field day including 29 farmers from Hura block of Purulia and 30 farmers from Chhatna block of Bankura. The monitoring team consisting of representatives from Directorate of Jute Development (DJD), Kolkata; State Dept. of Agriculture; Seed Certification Officer, Burdwan, West Bengal; along with Dr. C.S. Kar, Nodal Officer (Seeds), CRIJAF and Dr. Amit Bera, Scientist in-charge, CSRSJAF, Budbud visited the jute seed plots at the Sares village.

Courtesy: **A. Bera, C. S. Kar*** and **H. R. Bhandari**
Central Seed Research Station for Jute and Allied Fibres, Budbud, Burdwan
*Central Research Institute for Jute and Allied Fibres, Barrackpore, Kolkata

Farmers' Training-cum-Field Day at Purulia, West Bengal

One day farmers' "Training-cum-Field Day" was organized at Chuna village, Kashipur, Purulia, West Bengal, on 1st December, 2011 under DST, Govt. of WB, sanctioned project "Jute seed production in WB: exploring a new horizon". About 150 farmers from different villages of Kashipur and Hura blocks of Purulia District were present in the programme.

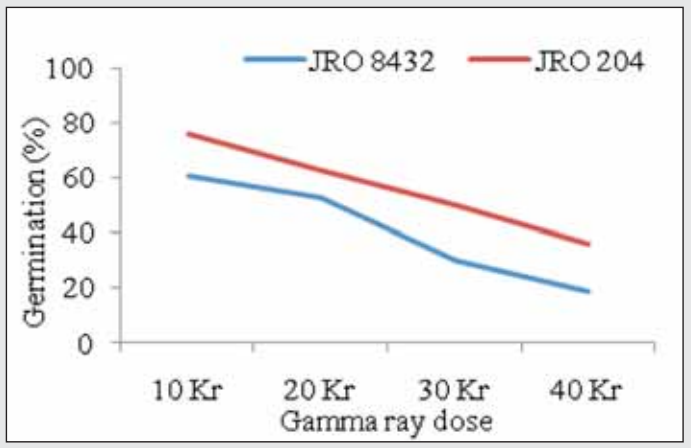
On this occasion, seed processing and other post-harvest operations were discussed in detail. During field visit, farmers were given exposure to identification of off types and methods of rouging in jute seed crop.

CRIJAF scientists interacting with the farmers at Kashipur, Purulia

Courtesy: **A. Bera, C. S. Kar*** and **H. Chowdhury***
Central Seed Research Station for Jute and Allied Fibres, Budbud, Burdwan
*Central Research Institute for Jute and Allied Fibres, Barrackpore, Kolkata

Effect of Gamma Radiation on *Tossa* Jute

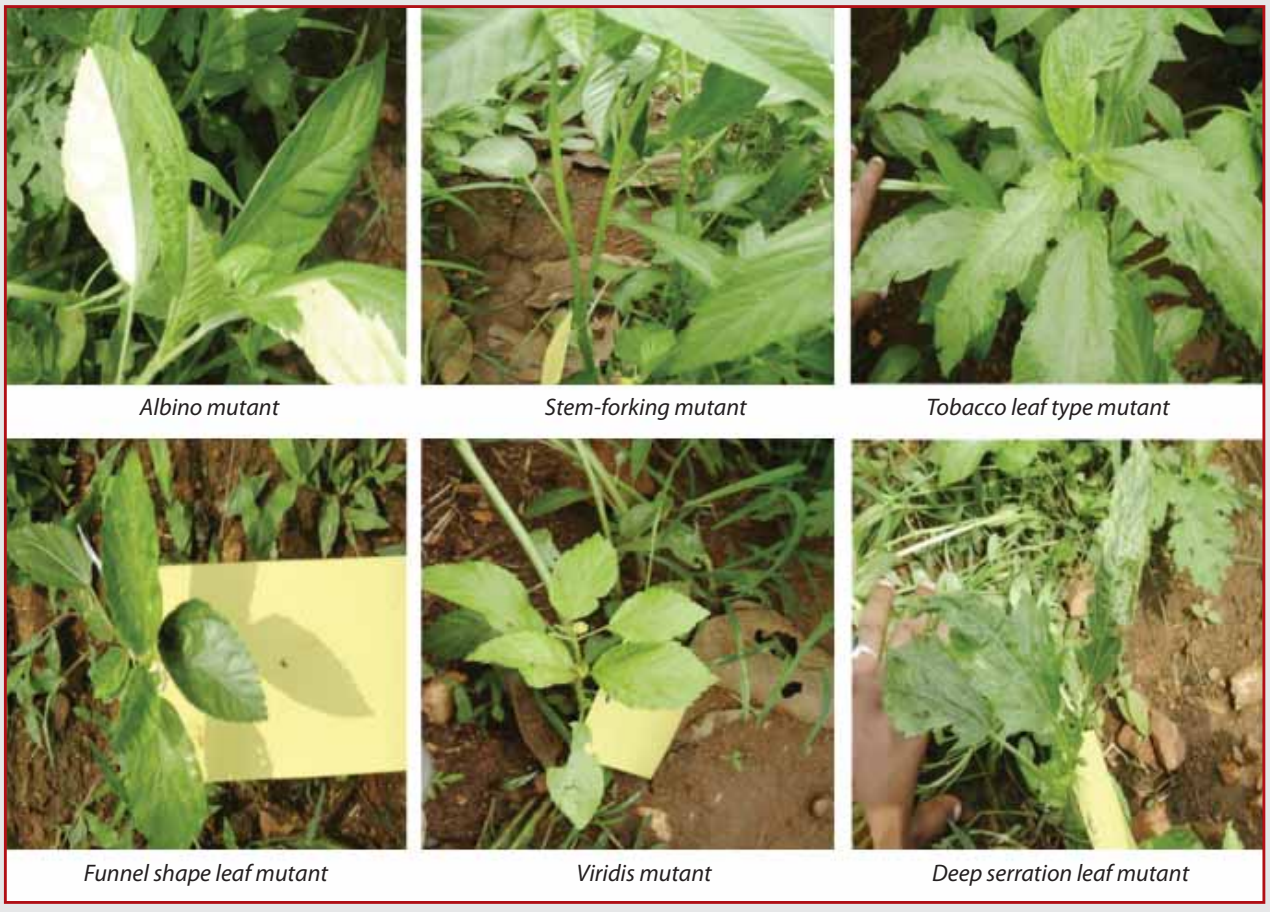
Mutation leads to heritable changes in genetic makeup of an individual. It is well established that mutation is one of the important sources for creation of new genetic variation for economically important traits of crop plants. Thus, 1000 seeds each of two *tossa* jute varieties (JRO 204 & JRO 8432) were irradiated with different doses of gamma radiation (10kr, 20kr, 30kr, 40kr) for creation of variability for morphometric traits and sown in the field during 2011. The sprouting ability and attainment of autotrophic status are considered as the best indicators for radio sensitivity assessment. In the present study, the treated seeds did not show any significant difference with control seeds in germination capacity but sprouting ability significantly deviated. In general, JRO 204 expressed more radio sensitivity than JRO 8432. Moreover, the LD_{50} doses for gamma rays were 20 kr and 30 kr for JRO 8432 and JRO 204, respectively.



Effect of gamma radiation on seed germination of M_1 generation of JRO 204 and JRO 8432

Courtesy: **S. B. Choudhary, H. K. Sharma, A. Anil Kumar** and **P. G. Karmakar**
Central Research Institute for Jute and Allied Fibres, Barrackpore, Kolkata

A number of leaf colour and shape mutants (*albino, xantha, viridis*, *funnel shape*, *tobacco leaf*, *serrated leaf*), stem mutants (*fork stem*) were found in M_1 generations of both the varieties.



Different types of leaf and stem mutants in M_1 generation of *tossa* jute

Effect of Date of Sowing and Spacing on Fibre Yield of Flax

Field experiment was conducted at Sunnhemp Research Station, Pratapgarh, Uttar Pradesh during winter season (*Rabi*) in 2011 to study the effect of date of sowing and row spacing on fibre yield of flax (FT 895). The experiment comprised of four dates of sowing (15th Oct, 30th Oct, 15th Nov and 30th Nov) and three row spacing (15 cm, 25 cm and 35 cm) constituting 12 treatment combinations. Plant height, dry biomass and fibre yield were influenced significantly by different dates of sowing and row spacing. The crop sown on 30th October recorded highest plant height (118.9 cm) as compared to other dates of sowing whereas lowest value (94.9 cm) was noted when the crop was sown on 30th November. Similarly, crop sown on 30th October recorded highest dry biomass (71.68 q/ha) and fibre yield (14.44 q/ha) followed by crop sown on 15th November (61.63 q/ha and 12.99 q/ha). Highest plant height (109.3 cm) was found in closer row spacing (15 cm) and the lowest (102.8 cm) was observed in wider row spacing (35 cm). The row spacing of 15 cm recorded significantly higher dry biomass (62.22 q/ha) and fibre yield (13.27 q/ha) followed by row spacing of 25 cm. The lowest dry biomass (55.29 q/ha) and fibre yield (11.68 q/ha) were found in wider row spacing (35 cm). The fibre yield realized under the row spacing of 15 cm was 13.61% higher as compared to row spacing of 35 cm. The experimental results indicated that sowing of flax on 30th October coupled with the row spacing of 15 cm may be ideal for better fibre yield in eastern Uttar Pradesh.

Fibre yield of flax at different dates of showing and plant spacing

Treatments	Plant height (cm)	Dry biomass (q/ha)	Fibre yield (q/ha)
Date of sowing			
15th October	105.6	59.42	12.54
30th October	118.9	71.68	14.44
15th November	104.6	61.63	12.99
30th November	94.9	43.93	10.41
CD (P=0·05)	4.7	7.78	1.28
Spacing			
15 cm	109.3	62.22	13.27
25 cm	105.9	59.98	12.84
35 cm	102.8	55.29	11.68
CD (P=0·05)	3.4	2.54	0.59

Courtesy: **M. K. Tripathi, Babita Chaudhary, S. R. Singh*, S. K. Pandey*, H. R. Bhandari** and **S. P. Prajapati**
Sunnhemp Research Station (CRIJAF), Pratapgarh, Uttar Pradesh
*Central Research Institute for Jute and Allied Fibres, Barrackpore, Kolkata

Use of Jute Fabrics in Agricultural Field

Submerged rice fields are unsuitable for cultivation of dicot vegetables because of its anaerobic nature. Crop diversification in waterlogged rice field may strengthen rice farmers' livelihood. Soil columns raised in submerged rice fields can provide the environment for growing dicotyledonous crops avoiding anoxia and providing sufficient aeration to these crops by facilitating drainage through gravitational and lateral flow. Major cucurbits normally require hot and humid climate which is not available after rice harvest due to onset of winter. These vegetables are thus not available in early winter months. Early establishment of cucurbits and other vegetable

crops (Solanaceae and Malvaceae) beyond 40-60 days within rice field on soil columns can easily escape cool temperature, ensure good harvest and fetch higher return in early winter months (November to February).

Jute fabrics can be used for raising soil column in submerged rice fields for crop diversification. The long duration vegetable crops grown on soil columns can make effective use of resources applied in rice field with reduced irrigation requirement due to their long association (2-3 months) with dwarf/ semi dwarf rice.

Thus, trials were conducted to explore possibility of utilizing jute fabrics in submerged rice fields to reinforce soil columns (30-40 cm height and 30 cm diameter) to grow early vegetable crops for higher profitability. Jute packets of different dimensions (10.0-20.0 cm height and 7.5-10 cm diameter) were also tested for raising advance seedlings for both field and horticultural crops.

For making jute reinforced soil column, meshy jute hessians (180-230 GSM) were cut into pieces of 85 cm in length and 30-45 cm in width. Both the cut ends at length were stitched together with jute thread and were given the hollow cylindrical shape having a radius of 15 cm and 30-45 cm height and soaked in systemic fungicide and insecticide solutions for an hour to increase its longevity in waterlogged rice field. The cylindrical meshy jute hessians were fixed vertically on puddled soil and were kept stretched-round at periphery by inserting inside 4-5 in number strong jute sticks (45 cm length) and few bamboo pegs. The jute sticks and bamboo pegs were inserted 15 cm deep in puddle soil for the firmness of the column. Farm yard manure and fertilized puddled soils were filled alternately in four layers of equal thickness in the hollow cylinder for healthy establishment of vegetable seedlings on the soil columns. For deep clay, the place selected for column, has to be dug 1 feet and filled it with dry/rotten water hyacinth, straw or FYM for easy

Jute reinforced soil columns in rice field

Amorphaphalus in rice

Ash gourd crop in rice field

Grown up tomato in matured rice

Ginger and elephant yam growing in jute columns

Dioscorea alata growing in jute columns

establishment of root hairing better aeration. The soil columns were left for fifteen days for drainage of excess water to create an aerobic zone above puddled soil for easy growth and development of dicot vegetable crops. Vertical positioning and messiness of jute hessians encircling the soil columns easily drained out the excess water received from rain and maintained proper moisture regime for the dicots. The capillary movement of water through the soil column from the submerged rice field prevented drying of top soil in the column. Soil columns (30 cm height and 15-20 cm diameter) were also made in rice field using jute, mesta and sisal fibres.

Fibres were encircled around jute sticks (45 cm length and 15 cm of which was embedded in puddled soil) to create a hollow cylinder within which fertilized puddled soil and farm yard manure were filled alternately. Used gunny bags were also utilized for column making (4" to 8") in rice field during *kharif* and *boro* season.

The row to row spacing between columns was 4 m and within the row the column distances were 2 m. In one hectare area, around 1250 columns were made with a cost of Rs. 19,000/ha @ Rs.15/column. Whereas, the cost required to transform a rice field with ridges (1m base width x 50 cm height, at a spacing of 50 cm) for vegetable cultivation in rainy season is around 40,000/ha with full sacrifice of rice crop. The hydrograph of ponding in rice field varied from 0-20 cm and 0-10 cm in *kharif* and *boro* seasons respectively.

Plants of each column were allowed to grow in an area of 8 m^2 only. In this diversification system, only 78 m^2/ha rice area was sacrificed for vegetable crops. But for easy movement and intercultural operations of vegetable crops in rice field, the rice transplantation along the jute reinforced columns was skipped. Loss of rice field in this process was around 625 m^2/ha which sacrificed about 3 q/ha of raw rice when rice yield was 5 t/ha.

Treated seeds/sprouted seeds of vegetable crops (bottle gourd, bitter gourd, red pumpkin, cucumber, sponge gourd, field beans, ladies finger) and seedlings of tomato and brinjal were planted/sown the surface of the soil column after 15-20 days of rice transplantation in *kharif* and 45 days after transplanting in *boro* season.

Starting from planting of seed/seedling, the column soil surfaces were sprayed repeatedly with fungicides (Carbendazim, Mancozeb, Blitox etc.) and systemic insecticides at weekly interval to prevent the seedling from pests and diseases. Two hundred ml of 3% sufala (N:P:K::10:26:26) solution and 2% urea solutions were given alternately in each column at 15 days interval for healthy eastablishment of vegetables on soil column.

After rice harvest, the vines trailed on ground and were managed as per management practices of each vegetable crop. For cucumber and field beans scaff holds were made. Root system of the vegetables spread well in the uncultivated rice field even if the soil remained sticky after rice harvest. Thus irrigation and granular fertilisers were applied directly in the field in zero till situation immediately after rice harvest.

To cope up with the late harvest of rice crop and waterlogged situation, raising of field crop/vegetable seedlings (mustard, arhar, cucurbits, okra, rajmash) (20-25 days old) in small jute bags (10 cm x 7-10 cm) were found very effective for timely planting of sequential crops. Transplanted mustard yielded up to 28 q/ha after *kharif* rice when seedlings were raised in jute bags to escape delay in sowing. Average early season okra (Nov-May) yield was up to 65 q/ha worth about 1.0 lakh/ha.

In summer rice, these vegetable crops were also grown on soil columns in waterlogged rice field without affecting rice yield (5.4 t/ha). Water productivity of rice field was also increased as remunerative vegetables were grown in it. Ginger (400-500 g/ha) (maximum weight is 5 Kg/Column), Amorphophallus (120 q/ha) and *Dioscorea alata* (212 q/ha) were also successfuly grown on jute gunny based soil column at CRIJAF farm. Colacasia yield was 200 q/ha when grown in rice field on small column.

Using these systems, vegetable crops like, cucurbits, solanaceous and leguminous crops were successfully grown in waterlogged rice field in rice-vegetable relay system and generated additional income (1.5-3.00 lakhs/ha) without hampering rice yield. Cucurbitaceous vegetable crops (60-70 days old) sown in 1st week of September in jute reinforced soil column could sustain and produce higher yield in winter months**.** In this attempt fine rice yield varied from 3-4 t/ha (Banskathi and Satabdi) with vegetable yield of 15-50 t/ha.

Courtesy: **A. K. Ghorai, H. Chowdhury** and **D. K. Kundu**
Central Research Institute for Jute and Allied Fibres, Barrackpore, Kolkata

RESEARCH NOTES

New Planting Technique for Ramie Cultivation

Ramie cultivation discourages the small and marginal farmers due to high input cost (rhizome) and high labour requirement. Labour consumption in conventional manual planting method is very high and planting depth is also not uniform. In order to reduce the labour requirement in ramie planting and to make the ramie planting more uniform, tractor operated furrow opener was developed by modifying existing nine tine cultivator at RRS, Sorbhog, Assam, in which the tines were maintained at 27 cm apart from each other. Out of nine tines, five were replaced by bigger size tines (9 cm x18 cm) and rest four tines were removed but the tine bases remained attached as such which regulated the depth of the furrows. Small tine bases in between big size tines also opened small furrows which facilitated sowing of seeds of another crop (inter crop) in between two rows of ramie. The larger tines opened five numbers of big furrows (18 cm wide and 5-6 cm deep and 52 cm apart from each other). Rhizome cuttings of 10-15 cm length were placed in the big furrows and pressed by foot followed by laddering with the tractor.

Uniform sprouting in ramie rhizomes was observed in the new planting technique due to uniform planting depth as compared to the conventional manual planting technique. This new technique helped to reduce 60-70% labour cost as only four labourers were found enough to plant one hectare of land in one day. Time saving is another important merit of the new planting technique. It is also helpful in weeding of ramie field when planting is done by the same implement.

Courtesy: **A. K. Sharma., S. P. Gawande** and **S. Mitra***
Ramie Research Station (CRIJAF), Sorbhog, Assam
*Central Research Institute for Jute and Allied Fibres, Barrackpore, Kolkata

Different steps of new ramie planting technique

Feasibility of *Tossa* Jute Seed Production in Western Odisha

A field experiment was conducted in 2010-11 to study the feasibility of *tossa* jute seed production at Bamra, Sambalpur district of Odisha. Six *tossa* jute varieties, *viz.* JRO 524, JRO 8432, JRO 204, JRO 128, S 19 and JBO 2003H were evaluated in the study. The seeds were treated with carbendazim @ 2 g/kg of seed and sowing was done on 4th July in lines (40 cm x 10 cm) with seed rate of 3 kg/ha. For each variety the area sown was 300 m^2 (20 m x 15 m). Initially no nitrogen was added to the soil as basal. Full amount of phosphate (60 kg/ha) and potash (60 kg/ha) were applied during final land preparation. One third of N (i.e. 20 kg/ha) was applied just after final weeding at

Fig. 1: Simultaneous weeding and thinning operations in jute seed crop at Bamra, Sambalpur

28 DAS. Another 1/3rd N was applied at detopping (42 DAS) and the rest 1/3rd N was applied coinciding with branching of the plants (at 60-65 DAS).

Fig. 2: Profuse branching of jute seed crop at Bamra, Sambalpur

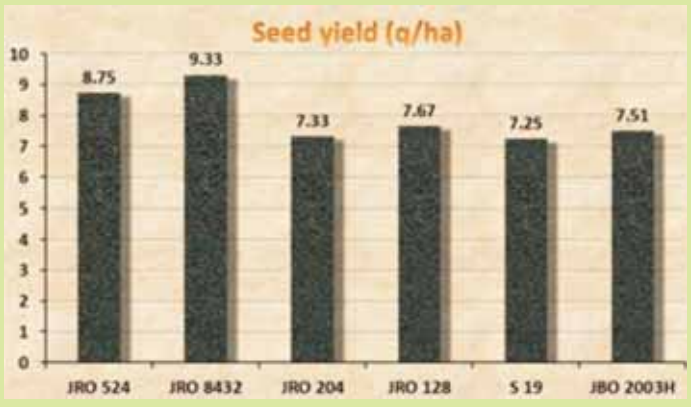


Fig. 3 : Seed yield of differnt *tossa* jute varieties at Sambalpur

The weeding was done by wheel-hoe in between the rows at 28 DAS and thinning was done for maintaining desirable plant population of 2.5 lakh/ha (Fig. 1). The crop was irrigated twice by surface irrigation method.

No significant crop damage by insect pests was observed thus no crop protection measures were adapted. Crop was harvested on 15th November at 133 days. The plants produced good branching after detopping at 60-65 DAS (Fig. 2). The highest seed yield was obtained in JRO 8432 (9.33 q/ha) which was closely followed by JRO 524 (8.75 q/ha) (Fig. 3). The highest 1000 seed weight was recorded in S 19 (1.96 g) followed by JRO 524 (1.91 g) (Fig. 4). The lowest test weight was found in case of JRO 128 (1.75 g). The average *olitorius* jute seed yield at the location was 8.07 q/ha. The present study showed that the agro-climatic condition of Sambalpur is favourable for *tossa* jute seed production.

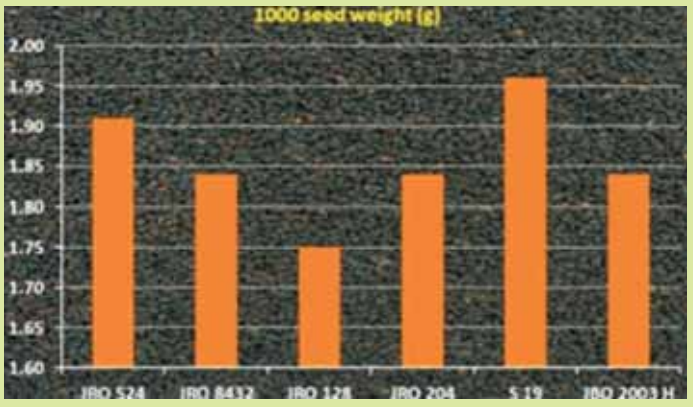


Fig. 4 : Test weight (g) of different varieties of tossa jute at Sambalpur

Courtesy: **Sitangshu Sarkar**
Sisal Research Station (CRIJAF), Bamra, Odisha

Surveillance of Insect Pests and Diseases of Jute

Surveillance was conducted at three locations i.e. Research Farm of CRIJAF, Barrackpore and two villages i.e. Amdanga and Jagannathpur in North 24 Parganas District of West Bengal to assess the extent of infestation of major insect pests and diseases of jute during 2011 cropping season. Bihar hairy caterpillar (BHC), semilooper, stem weevil and yellow mite were the major pests in all the locations. In CRIJAF Research Farm, in early sown crop (1st March) there was no infestation of stem weevil and semilooper till 85 days after sowing (DAS) whereas at 100 and 115 DAS the infestation of stem weevil was 7.35% and 6.96%, respectively. The infestation of semilooper was less with 3.87% and 6.62% at 100 and 115 DAS, respectively. The infestation of BHC was negligible. The peak infestation of yellow mite was during 58 DAS with 12.87% damage. The grey weevil infestation prevailed throughout the cropping season with peak infestation level of 30.62% at 55 DAS. In the later sown (17th April) crop at CRIJAF farm, the peak infestation of stem weevil, semilooper, yellow mite and BHC was recorded to the

extent of 25%, 28%, 90% and 45%, respectively. There was also significant infestation of stem weevil, semilooper, yellow mite and BHC with 67.66%, 75.86%, 95.33% and 93.86% infestation, respectively, at Amdanga in farmers' field.

At Jagannathpur, the infestation of yellow mite was above 92.33% followed by stem weevil, semilooper and BHC with 63.33%, 74.80% and 76.26%, respectively. Yellow mite and stem weevil were more prevalent during the early stage of the crop whereas BHC and semilooper were more towards the later stage of the crop.

Surveillance was also conducted to assess the intensity of jute disease incidence. In general, the disease incidence was more during the latter part of the cropping season. The incidence of stem rot was initially very low (0.81%) at 60 DAS. However, it increased up to 6.2% by the end of July at 110 DAS. Similarly, the incidence of root rot was as low as 0.1-0.2% in June at 60 DAS and increased up to 7.9% at 110 DAS in August. The incidence of both the diseases was marginally higher at CRIJAF farm than other two locations.

Courtesy: **B.S. Gotyal, K. Selvaraj, S. Satpathy** and **V. Ramesh Babu**
Central Research Institute for Jute and Allied Fibres, Barrackpore, Kolkata

Integrated Management of *Cercospora* Leaf Spot of Ramie

The pests and diseases in ramie were not a major problem in India due to scattered and very limited area under ramie cultivation. Now a days, due to change in climatic conditions and increase in area of cultivation, the disease incidents in ramie crop enhanced. Among these, *Cercospora* leaf spot (*Cercospora boeherimae*) has emerged as a major disease causing considerable loss in fiber yield of ramie.

Infected leaves contain circular to angular brown spots with narrow red or dark reddish-brown margins that vary in size from less than 1 mm to 6 mm in diameter. Elliptical lesions may occur on leaf blades and veins. Later on spots turn ash-gray to light-brown at center with distinct purple to reddish margins. Eventually, the center becomes whitish with small dark spots and the margins darken. During heavy infection, the spots may appear uniformly over the foliage. Leaf spots vary in size from pinpoints to 5 cm in diameter. Leaf spots coalesce and kill large areas of the leaf tissue. As the disease progresses, the leaflets turn yellow with curled margins.

On heavily infected plants, defoliation may occur. Old partially buried ramie debris from previous crop is the source of inoculum that spreads *via* wind, water, and insects. Conditions that favor development of the disease are warm temperature (68-79°F), frequent rain, and high humidity (90-100%). Leaf spots develop from 7-20 days after infection, depending on amount of inoculum, temperature, and duration of wet period. Leaf spots typically occur first on lower older leaves and progress to younger leaves.

Proper distance while planting, proper field sanitation, removal and proper disposal of infected plants, use of disease free seeds/plantlets or resistant cultivars are the other effective management practices for the disease. Application of mancozeb @ 0.25% effectively controls the disease.

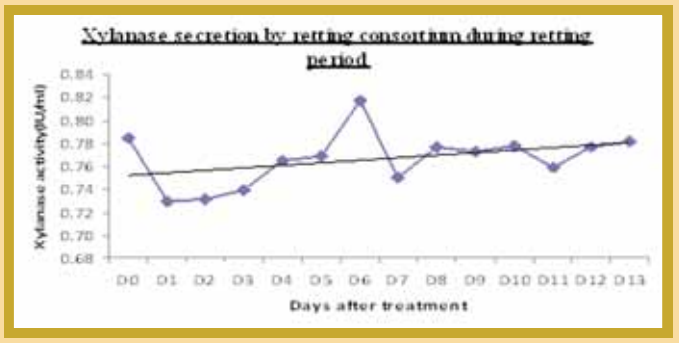
Courtesy: **S.P. Gawande, A.K. Sharma** and **S. Satpathy***
Ramie Research Station (CRIJAF), Sorbhog, Assam,
*Central Research Institute for Jute and Allied Fibres, Barrackpore, Kolkata

Symptoms or *cercospora* leaf spot in ramie

Microscopic view of *cercospora* infected leaf

Changes in Enzymatic Activities during Jute Retting Process

Jute retting is a bio-chemical process carried out by several microbes present in retting water. Pectin and xylan, being parts of hemicellulose, are present as main cementing materials in jute plants. During retting process of jute, pectin is degraded mainly by enzymes like polygalacturonase and pectin lyase and xylan degraded by xylanase enzyme secreted by the retting microbes. Earlier, how the enzymatic activities from the initiation to the completion of retting process was not clear. To find out the exact changes in enzymatic activities, a study was conducted using CRIJAF microbial consortium. Retting liquor was collected regularly after every 24 hours interval from the initiation of the trial to the end of retting for analysis of acitvities of polygalacturonase, pectin lyase and xylanase enzymes. Monitoring of pectin degrading activity during retting period revealed a nearly constant level of polygalacturonase production with higher activity at the mid stage and a slight decrease at the end of retting period. Pectin lyase activity dynamics showed a sharp decrease on the 2nd day after initiation of retting trial and from day 3 onwards higher level of activity was observed and thereafter a steady decrease of activity was observed towards the end of retting period. A steady increase in xylanase activity was observed throughout the retting period indicating the fact that xylan was exposed for degradation with the gradual removal of pectin layer by pectinolytic enzymes as xylan is covered by the pectin containing materials in jute plant.



Changes in xylanase activity during retting

Courtesy: **B. Majumdar, S. Das, A. Bhadra, A. R. Saha, H. Chowdhury** and **D. K. Kundu**
Central Research Institute for Jute and Allied Fibres, Barrackpore, Kolkata

Assessment of Farmers' Opinion on Improved Jute Production Technologies

Farmers' opinion on improved jute production technologies disseminated to them over the last three decades was analysed as part of a study on "Research, Farmers and Industry Linkage". The study was conducted at four extension centres of Central Research Institute for Jute and Allied Fibres. Thirty farmers from each centre of Gauribati, Hooghly; Goaldah, North 24 Parganas; Debkundu, Murshidabad and Gopalpur, Nadia were selected randomly for the study which constituted a total sample size of 120 farmers.

The respondents were asked to list the technologies related to improved jute fibre production and profitability that they came to know in last few decades. The listed technologies were again given to the respondents to score based on the impact of the technology on production and profitability. The scores given to each technology by all the farmers were added to obtain the total score for that particular technology. The results revealed that the technology, variety JRO 204 was given the highest score followed by four row seed drill, line sowing, variety JRO 524, weed management using quizalofop ethyl etc. The technology variety JRO 524 had long term impact on production and profitability from jute cultivation. The result also proved that most of the technologies which had higher impact on jute fibre production and profitability were received by the farmers only during last five years.

Improved jute production technologies transfered over the period

Period	Technology	Score	Rank
2005-2010	Four row seed drill	540	2
	Line sowing	490	3
	JRO 204 (variety)	580	1
	Weed management using quizalofop ethyl	320	5
1995-2005	Nutrient management	260	6
	Single row seed drill	95	7
1975	JRO 524 (variety)	408	4

Courtesy: **Shamna. A** and **S. K. Jha**
Central Research Institute for Jute and Allied Fibres, Barrackpore, Kolkata

RESEARCH NOTES

Assessment of Jute Production Technologies under Deficit Rainfall in Changing Climatic Scenario

Climatic changes in various forms ranging from erratic monsoon to flood/drought are affecting the productivity of jute in West Bengal. During 2010-11, field demonstrations (more than 15 farmers of four villages) were conducted in the districts of Nadia and Murshidabad. Method and result demonstrations were conducted under limited irrigation (one) and rainfed condition to assess jute production technologies. Jute was sown with seed rate of 6-8 kg/ha, N:P:K 60:30:30 and Butachlor @1kg/ha. The result obtained at farmers field was close to the yield achieved at experimental farm of CRIJAF, Barrackpore.

In limited irrigation condition, application of elemental sulphur provided additional yield (about 15%) of jute fibre over farmer's practice. In rainfed condition, open furrow with covered mulch produced 6.7% more fibre over open furrow practice by conserving more soil moisture and ensuring optimum plant population. Farmers perception about potential of the application of elemental sulphur in limited irrigation (one) revealed that it was profitable and result was impressive. It was simple and compatible to their production system. As per them, in sulphur applied field, the yield performance of subsequent crop particularly, the crucifers, also improved. It did not require further refinement.

Farmers perception about the potential of application of mulch in rainfed condition revealed that it was profitable and conserved the field moisture in better way. Only limiting factor was availability of mulch in bulk quantity. As an alternative, sowing of jute seed in the last week of April between the rows of March sown pulse crop (moong) was suggested.

Performance of agronomic practices at farmer's field

Treatment	Mean yield (q/ha)	Range (q/ha)
Under limited irrigation		
Without elemental sulphur (Farmer's practice)	28.43	26-33
Elemental sulphur	34.2	32-37
Scattered mulch	28.48	-
Open furrow with covered mulch	30.00	-
Under rainfed condition		
Open furrow	31.00	29.80-32.00
Open furrow with covered mulch	32.00	-

Courtesy: **Shailesh Kumar** and **A. K. Ghorai**
Central Research Institute for Jute and Allied Fibres, Barrackpore, Kolkata

AWARDS

Prof. B. S. Mahapatra, Director, CRIJAF, Barrackpore was honoured with the Honorary Fellowship Award-2011 by the Society for Recent Development in Agriculture in International Conference on "Issues for Climate Change, Land Use Diversification and Biotechnology Tools for Livelihood Security" held during 8th-10th September, 2011 at SVPUA&T, Meerut, Uttar Pradesh. Award was received by Dr. A. K. Sharma, Senior Scientist, CRIJAF on behalf of Prof. B. S. Mahapatra, Director, CRIJAF.

Dr. F.H. Rahman, Programme Coordinator, CRIJAF-KVK, Budbud, Burdwan, West Bengal was conferred the "Best KVK Professional Award-2011" by the Society of Extension Education at Goa during 6th National Extension Education Congress, 17th-19th December, 2011.

Sri Soyeb Hossain one of the farmers of an adopted village (Jagulipara) under CRIJAF-KVK, Budbud, Burdwan, West Bengal was awarded as "Best Innovative Farmer" at 5th National Conference on KVKs at JNKVV, Jabalpur during 3rd-5th December, 2011.

Our New Colleagues

Dr. K. Selvaraj joined CRIJAF as Scientist (Agricultural Entomology) in the Crop Protection Division on 5th September, 2011 after successful completion of 93rd FOCARS at NAARM, Hyderabad. Dr. Selvaraj pursued his M.Sc. at CCSHAU, Hissar & Ph. D degrees at Indian Agricultural Research Institute (IARI), New Delhi in the field of Agricultural Entomology.

Dr. Asit B. Mandal, M. Phil. (Env. Sci), Ph. D. (C.U.), Principal Scientist (Plant Breeding) with proven track record of scientific eminenance in agricultural research has joined the Biotechnology Unit, Crop Improvement Division on 24th October, 2011. Before joining CRIJAF, he was selected and joined as Project Director, Directorate of Seed Research, Mau, Uttar Pradesh completed full tenure up to 2011. He has received several awards like 'Hari Om Ashram Trust Award' (2003-2004), 'INSA Visiting Fellow' (1994-1995) and 'ICAR Team Work Award' (1991-1993). He has visited several countries for various overseas research assignments. He has in his credit more than 140 research articles published in both nationally and internationally reputed journals.

Dr. Dhananjay Barman joined as Scientist (Soil Physics) in the Crop Production Division on 2nd November, 2011. Before joining CRIJAF, Dr. Barman was working as a Scientist at CSWCRTI, Research Centre, Koraput, Odisha. He pursued his M.Sc and Ph.D. degrees from IARI, New Delhi in the Division of Agricultural Physics.

Dr. A.N. Tripathi joined CRIJAF as Scientist (Plant Pathology) in the Crop Protection Division on 24th December, 2011 after successful completion of 94th FOCARS at NAARM, Hyderabad. Dr. Tripathi before joining ICAR was working as an Assistant Professor (Plant Pathology and Microbiology) at Central Agricultural University College of Horticulture and Forestry, Pasighat, Arunachal Pradesh.

Mr. V. Ramesh Babu joined CRIJAF as Scientist (Agricultural Entomology) in the Crop Protection Division on 24th December, 2011 after successful completion of 94th FOCARS at NAARM, Hyderabad. He has completed M.Sc. (Agricultural Entomology) at ANGRAU, Hyderabad. Mr. Ramesh Babu is pursuing his Ph. D. in the same department.

Mr. Amarpreet Singh joined CRIJAF as Scientist (Agronomy) in the Crop Production Division on 24th December, 2011 after successful completion of 94th FOCARS at NAARM, Hyderabad. He has completed his M.Sc (Agronomy) degree from PAU, Ludhiana. Mr. Singh is pursuing his Ph. D (Agronomy)degrees at IARI, New Delhi.

Mr. A. Anil Kumar joined CRIJAF as Scientist (Plant Breeding) in the Crop Improvement Division on 24th December, 2011 after successful completion of 94th FOCARS at NAARM, Hyderabad. He has completed his M.Sc (Plant Breeding) degree at ANGRAU, Hyderabad. Mr. Kumar is pursuing his Ph. D. degree in the same department.

EDITORIAL

CRIJAF is Leading the Way to Quality Jute Seed Production

Quality seed is the most important input in agriculture on which the efficacy of other inputs and ultimately the production depends. Timely supply of adequate quantity of quality seeds to the farmers is of paramount importance transportation. The bulk of the jute seeds is produced by the private enterprises in Andhra Pradesh, Maharashtra, Gujarat and Karnataka. They usually produce seeds of old and established varieties mainly JRO 524. Thus, farmers are unable to avail the benefit of newly developed improved high yielding varieties of jute. Moreover, the transportation also increases the seed cost. In peak months of jute seed requirement sizeable amount (3000 MT) is being exported to Bangladesh every year. The price of jute seed fluctuate from Rs. 60 to Rs 150 even up to Rs. 300 per kg in some years. The annual domestic requirement of about 5000-5500 MT out of which about 1500-2000 MT certified in the country. Jute seed production in West Bengal itself may solve this problem to some extent.

CRIJAF being the premier institute on jute research has made timely intervention for exploring the possibility of producing Jute seed in the drier tracts of West Bengal like, Bankura, Purulia, Birbhum and West Midnapur districts. Existing jute seed production techniques were further refined at institute research farm and its substation for better suitability in different situations. The duration of seed crop was reduced to about four months in place of six months to suit better in the cropping sequence. Intensive management schedule was developed which elevated the seed yield even upto 10-12 q/ha from 4-5 q/ha from shorter duration crop. In due course dual purpose (seed-cum-fibre) jute seed crop production technology was developed where seed yield of 6 q/ha along with fibre yield of 20 q/ha was obtained from the same crop sown 1st week of July. Home scale jute seed production technologies were also developed to enable the farmers to produce their own seeds at their farmyard or from a small piece of land. Alternative seed production technology by transplanting jute seedlings in puddled soil was developed for growing jute seed in low land. CRIJAF produced 15-20 tonnes of jute seeds of new varieties per annum in last few years. The seeds were sold in the trade name "CRIJAF Seeds" from the CRIJAF seed sale counter at the institute and also from the extension centres situated at leading jute producing districts of the state of West Bengal. These efforts not only generated awareness among the farmers about the new varieties of jute but also helped the institute earning sizeable revenue every year.

With the technologies in hand CRIJAF made a humble beginning for exploring the possibility of jute seed production at Bankura and Purulia district under the research project 'Jute seed production in WB: exploring a new horizon' funded by DST, Govt. of WB. The initial research findings in the area was encouraging and yield of about 8 q/ha was obtained which was much more remunerative than the traditional paddy crop. CRIJAF also undertook another research project "Adaptive Research on Jute Seed Production in West Bengal" sponsored by Ministry of Agriculture, GOI under varietal adoption for Jute Technology Mission (MM-II) for exploring jute seed production in Bankura and Purulia. The initial success under these efforts made CRIJAF more encouraged and confident to expand the endeavour. Thus a brainstorming session on jute seed production in drier tracts (Purulia and Bankura districts) of West Bengal was held at Purulia in the month of January, 2011.The meeting was chaired by Sh. Basudeb Acharya, Hon'able Member of Parliament & Chairman Parliamentary Standing Committee on Agriculture. Dr. Swapan K. Datta, DDG (CS), ICAR was the chief guest and Sh. Avanindra Singh, IAS, District Magistrate & Collector, Purulia was the Guest of Honour of the meeting. CRIJAF scientists, State Govt. officials from district Agri. Dept. participated along with some farmers of Jhalda, Purulia. House was unanimous in taking the decision about the need of jute seed production in the area with possible upliftment of the poor tribal farmers.

To expand the horizon of jute seed production, participatory seed production programme through "Seed Village" concept in the drier districts of Bankura and Purulia was envisaged on pilot scale under the RKVY. A project proposal of worth Rs.15.03 crores was submitted to the Govt. of West Bengal for sanctioning. Necessary technical and financial help will be extended from the project to the participatory farmers during the project period. The same will be extended further by the State Govt. or other agencies in other possible districts or areas in adopting the technology generated from this project. If jute seed production in this area proves to be remunerative then more and more number of farmers will take up jute seed production which will pave the way towards self-sufficiency of the state in quality jute seed production and also open up an avenue for more remunaretive cropping sequence for the tribal farmers of the region.

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