COTTON INNOVATE

Cotton Innovate

A Monthly Newsletter from ICAR-Central Institute for Cotton Research, Nagpur

Mirid bug (Hyalopeplus lineifer) in cotton

Contributed by Dr. M. Amutha, Principal Scientist, Entomology, ICAR-CICR, RS, Coimbatore

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Research Notes Clipping

Endophytes – biocontrol agents against major diseases in Cotton

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Cotton samples collected from major cotton growing regions of North India (Haryana, Rajasthan and Punjab), Gujarat and Maharashtra were used for isolation of endophytes. Nine promising endophytes were selected based on the colony inhibition percentage (>50 to 66%) in dual culture against Fusarium solani and Corynespora cassiicola, for in vivo evaluation. Pathogenicity of endophytes CEL- 41, CEL- 48 and M1- 4, was tested on cotton cultivars Suraj and Phule dhanwantary in small pots and none of them were found pathogenic. Cross-pathogenicity of endophyte Daldinia eschscholtzii (M1- 4) was tested on wheat, cowpea, brinjal, redgram, soybean and sorghum. Four antimicrobial VOCs namely 1, 3 - diethyl benzene, 1, 4- diethyl benzene, cymene-7-ol and ethyl acetophenone were identified from Nigrospora sphaerica (CEL 19) through GC/MS analysis by using methanol and DCM as solvents. Seed treatment with endophytes enhanced the growth of seedlings and also resulted in fewer incidences of root rot/ wilt in the field.

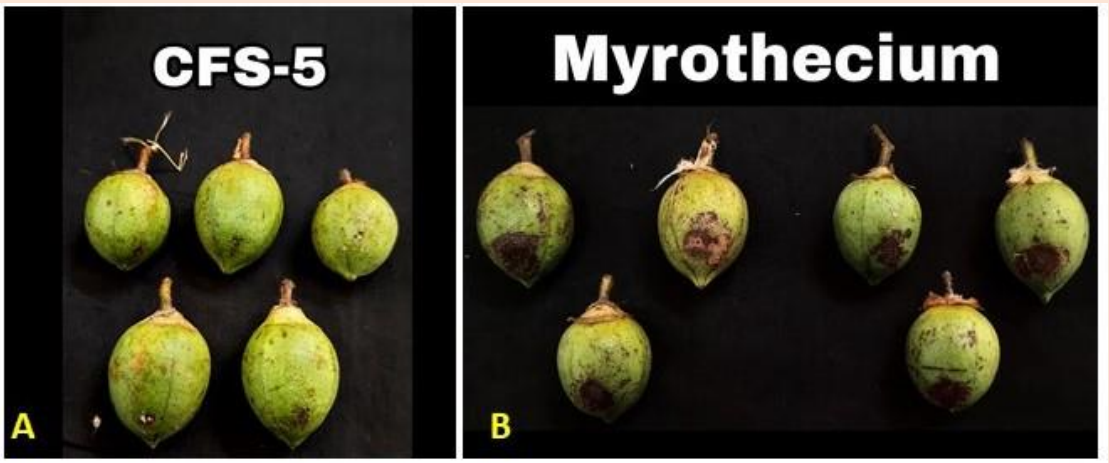


Fig. Pathogenicity test of endophyte *Diaporthe melonis*-CFS-5 (A) by inoculating spores on healthy green bolls of cotton. *Myrothecium* sp. was used as a negative control (B). Green bolls treated with endophyte remained healthy (A) at 8 dpi whereas infection was seen on the latter.

CICR Happenings

ICAR-CICR, Celebrates Republic Day

The 74th Republic Day was celebrated on 26th January, 2023 at ICAR-CICR, Nagpur and Regional Stations, Coimbatore and Sirsa. At CICR, Nagpur, National flag was hoisted and Republic Day address was given by Dr. D. Blaise, Director (i/c). National flag was hoisted and Republic Day address was delivered by Dr. A.H. Prakash, Project Coordinator and Head, at CICR, Regional Station, Coimbatore. All the staff members of this institute participated in the programme. During the event, prizes were distributed to all the prize winners of pongal day competition held on 16.01.2023.

ICAR-CICR, Nagpur - FLD Farmers attended Farmers' Science Congress

Indian Science Congress was held at RTM Nagpur University Campus, Nagpur, from 3rd to 7th January 2023. Fifty Progressive FLD farmers attached with ICAR-Central institute for Cotton Research, Nagpur attended the Farmers' Science Meet on 5th January 2023 at Shaheed Birsa Munda Hall, Rashtrasant Tukadoji Maharaj Nagpur University. These progressive farmers were from Palwadi and Bhambora village of Tiwasa Taluka., Amaravati District, Chistur Village of AsthiTaluka, Thanegaon Village of Karanja Taluka of Wardha District, Hatala Village of Katol Taluka, Khandala Village of Narkhed Taluka and Malegaon Village of Saoner Taluka and Bhugaon Village of Kamptee Taluka belonging to Nagpur District. Welcome address was given by Dr Anoop Kumar Jain, General Secretary (Scientific Activities) ISCA and special address was given by Dr. Subhash Choudhari, Vice-Chancellor, RTM Nagpur University. Chief Guest was Dr. Basanta Kumar Das, Director, ICAR-Central Inland Fisheries Research Institute, Kolkata. Dr. Sharad R. Gadakh Vice-Chancellor, Punjabrao Deshmukh Krishi Vidyapeeth, Akola, Dr. Ashish Motiram Paturkar, Vice-Chancellor, Maharashtra Animal and Fishery Sciences University, Nagpur, Dr. Atul Narayan Vaidya Director, National Environmental Engineering Research Institute, Nagpur, Ms. Rahibai Popere (Seed Mother) (Padma Shri 2020) Farmer and Conservationist, Ahmednagar were the guests of honour. Presidential Address was given by Dr. Vijay Laxmi Saxena General President, Indian Science Congress Association. Various technical sessions were held on topics related to agriculture. Dr. Y. G. Prasad, Director, ICAR-Central Institute for Cotton Research (CICR), Nagpur delivered a lecture on "Approaches to enhancing cotton productivity in India" which is of significance to Maharashtra cotton growers. Progressive Farmers' meet was also held to share the success stories of each other and also about the difficulties they face and how they tackled the problems. Farmers also visited the expo to get a glimpse of the various present and future technologies showcased there. The Progressive farmers' meet was coordinated by Dr. A. Manikandan, (Sr. Scientist, Soil Science, ICAR-CICR, Nagpur) and Mr. Chandrashekhar Mundafale (Technician) assisted in conducting the program.

Five Day farmers' training on Cotton Health Management Strategies conducted under IRM

A Farmers' field training on Cotton Health Management Strategies was conducted by the ICAR-CICR, Regional Station, Coimbatore during 19.01.2023 to 25.01.2023 (5 days) under the scheme 'Insecticide Resistance Management: Dissemination of Pink Bollworm Management Strategies' at Kalathur village of Pollachi North block in Coimbatore district. Around 50 farmers from the adopted villages *viz.*, Kalathur, Athiyur Puravipalayam, Vadakkipalayam and Perumpathi attended the training programme. Mrs. Meenambigai, Assistant Director of Agriculture, Pollachi North Block, Mr. N. Nagendran, President, Zamin Puravipalayam Panchayat participated in the inaugural session of the event. A series of lectures and hands-on trainings on cotton production and protection strategies were offered to the farmers during the five days training.

Lectures and trainings offered in the training programme

- Insecticide resistance management in cotton and hands on training on identification of cotton bollworms, different life stages and damage symptoms by Dr. K. Rameash, Principal Scientist , Agricultural Entomology, ICAR-CICR, RS, Coimbatore
- Improved cotton varieties and resistant cultivars to pest and diseases suitable for Tamil Nadu by Dr. S. Manickam, Principal Scientist, Genetics and Plant Breeding, ICAR-CICR, RS, Coimbatore
- Control of planting seed deterioration through post-harvest management by Dr. K. Rathinavel, Principal Scientist, Seed Science and Technology, ICAR-CICR, RS, Coimbatore.
- Importance of input factors in cotton production by Dr. Isabella Agarwal, Principal Scientist, Agricultural Economics, ICAR-CICR, RS, Coimbatore.
- Lecture and Field training on identification and management of nematode pests diseases in cotton Dr. J. Gulsar Banu, Principal Scientist, Nematology, ICAR-CICR, RS, Coimbatore.
- ELS cotton production practices and techniques by Dr. S. Raja, Principal Scientist, Agronomy, ICAR-CICR, RS, Coimbatore.
- Management of emerging pests of cotton by Dr. A. Amutha, Senior Scientist, Agricultural Entomology, ICAR-CICR, RS, Coimbatore.
- Field training on identification of sucking pests and damage symptoms in cotton and their management by Dr. K. Shankarganesh, Senior Scientist, Agricultural Entomology, ICAR-CICR, RS, Coimbatore.
- Integrated management of important diseases in cotton and field training on identification of different diseases and damage symptoms in cotton by Dr. Sampath Kumar, Scientist, Plant Pathology, ICAR-CICR, RS, Coimbatore.

ICAR, CICR, RS Celebrates Pongal

ICAR-CICR Regional Station, Coimbatore celebrated the Tamil harvest festival Pongal with great joy and fanfare on January 16, 2023. Dr. A. H. Prakash, Project Coordinator and Head, Scientists, Technical, Administrative and Skilled supporting staff, Junior Research Fellows and Young Professionals of ICAR-CICR Regional Station enthusiastically participated in the celebration. It was a time of great camaraderie and gladness that was shared among the staff members. As per tradition, pooja was performed and worshiped in the farm. Various competitions were held and the prizes for the winners were distributed

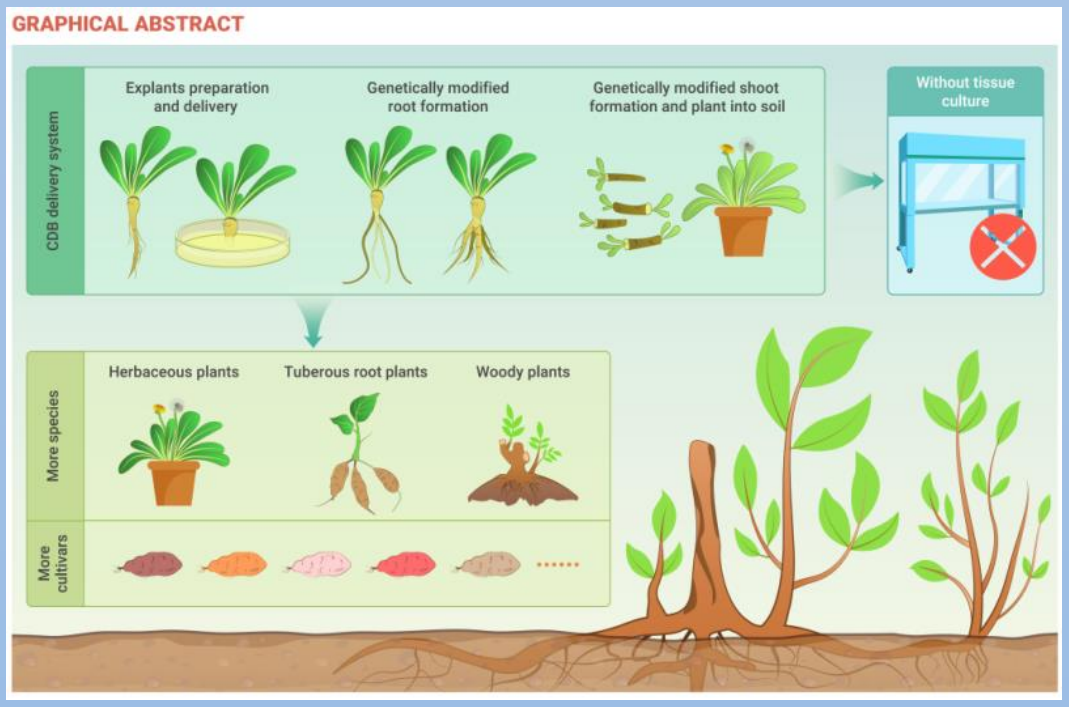
Students visit ICAR-CICR, Coimbatore

Ninety-six B.Sc. Agri students from College of Agriculture, Padannakkad, visited the Regional Station of ICAR, CICR, Coimbatore on January 23, 2023 as a part of their study tour programme. The students interacted with Dr K. Rameash, Principal Scientist (Entomology), and got exposure to the institute activities. They got acquainted with the inception, research activities and significant achievements in various areas of the Station.

Did You Know?

An extremely simple a cut–dip–budding (CDB) delivery system for generating transformed plants

In general, the generation of tissue culture plants from transformed events in cotton has been very cumbersome in past. Recently, a cut–dip–budding (CDB) has been successfully used to achieve the heritable transformation of plant species in multiple plant families, including two herbaceous plants (*Taraxacum kok-saghyz* and *Coronilla varia*), a tuberous root plant (sweet potato), and three woody plant species (*Ailanthus altissima*, *Aralia elata*, and *Cleroden drumchinense*). These plants have previously been difficult or impossible to transform, but the CDB method enabled efficient transformation or gene editing in them using a very simple explant dipping protocol, under non-sterile conditions and without the need for tissue culture. An extremely simple CDB delivery system uses *Agrobacterium rhizogene* to inoculate explants, generating transformed roots that produce transformed buds due to root suckering. This suggests that large number of plants including cotton could be amenable to genetic modifications using the CDB method and this can be explored for transformation in cotton species.



Reference: ***Cao X., Xie H., Song M., et al., (2023). Cut–dip–budding delivery system enables genetic modifications in plants without tissue culture. The Innovation 4(1), 100345.***

Contributed by: *Dr. S. K. Sain, Principal Scientist (Plant pathology), ICAR-CICR, RS, Sirsa*

Scientists' Corner:

- Dr AK Singh, Hon'ble VC, RLB CAU, Jhansi, UP and Former DDG (AE), ICAR, New Delhi visited ICAR-CICR and inaugurated the IFS model established in KVK instructional farm on 05.01.2023. All HoD's and all CICR staff attended the inauguration programme.
- Dr YG Prasad, Director, ICAR-CICR, Nagpur, attended the meeting of HDPS project for 2023-24 at Hyderabad on 09.01.2023 organized by FSII & NSAI with participating seed firms.
- Dr YG Prasad, Director, ICAR-CICR, Nagpur, attended ICAR-NePPA Technical Advisory Committee (TAC) virtual meeting on 10.01.2023 at Hyderabad.
- Dr. Rishi Kumar, Principal Scientist (Entomology) attended a Meeting regarding Cotton Production in India with Dr. K.R. Kranthi and Dr. Sandhya Kranthi on January 11, 2023 through virtual mode.
- Dr. R. Raja, Principal Scientist (Agronomy) attended the first Technical Advisory Committee meeting of the ICAR Network Programme on Precision Agriculture (NePPA) at ICAR- Central Inland Fisheries Research Institute, Barrackpore on January, 10 -11 2023.
- Dr YG Prasad, Director, ICAR-CICR, Nagpur, all Head of Divisions and Regional Stations, all scientists & technical sof the Institute attended the lecture delivered by Dr (Mrs.) N. Kalaieslevi, Secretary, DSIR and DG, CSIR through virtual mode on 12th January, 2023.
- Dr YG Prasad, Director, ICAR-CICR, Nagpur participated in the meeting regarding discussion on draft RIB gazette notification on 13th January, 2023. Dr G Balasubramani, Member secretary, ITMU also attended the meeting.
- Dr. Rishi Kumar, Principal Scientist (Entomology) and Dr. Debashis Paul, Scientist (Seed Technology) attended a meeting to draft gazette notification on RIB system of seed pecking in Bt-Cotton on January 13, 2023 through virtual mode. Dr. Y.G. Prasad, Director, ICAR-CICR Nagpur chaired the meeting. Dr. A. H. Prakash, PC- AICRP on Cotton, Dr. Waghmare, Head, Division of Crop improvemet and Dr. Balasubramani were also present in the meeting.
- Dr YG Prasad, Director, ICAR-CICR, Nagpur participated as chairperson through virtual mode in concurrent Session for the theme Satellite Symposium on Niche Oilseed Crops in the International Conference on Vegetable Oils 2023 (ICVO 2023) 'Research, Trade, Value Chain and Policy' at ANGRAU on January 17-21, 2023
- Dr. Rishi Kumar, Principal Scientist (Entomology) and Dr. Debashis Paul, Scientist (Seed Technology) attended State Trial Meeting (Evaluation of Commercially available Bt Cotton hybrids for the state of Haryana) on January 18, 2023 at CCS HAU, Hisar. The meeting was chaired by Dr Jeet Ram Sharma, Director of Research , CCSHAU, Hisar.
- Dr YG Prasad, Director, ICAR-CICR, Nagpur participated in the meeting with Directors of the deemed universities and ICAR-Institutes under the chairmanship of Secretary, DARE and DG, ICAR on 19.01.2023 to develop the road map for transforming IARI into a multidisciplinary Education and Research Institute/ Mega University involving the ICAR institutes in the academic programme of IARI.
- Dr. Rishi Kumar, Principal Scientist (Entomology) attended a meeting organized by Cotton Crop India and issued an advisory for cotton farmers on January 20, 2023.
- Dr YG Prasad, Director, ICAR-CICR, Nagpur participated and made a presentation on Pilot Project on Cotton in the review meeting to discuss Pilot Project on Cotton of ICAR-CICR on 23.01.2023 in hybrid mode under the chairmanship of secretary, Department of Agriculture & Farmers Welfare.
- Dr. Rishi Kumar, Principal Scientist (Entomology) attended advisory committee meeting of Ms. Divya Bharti from PAU, Ludhiana on January 23, 2023.
- Dr. Rishi Kumar, Principal Scientist (Entomology), Dr. S. K. Sain, Principal Scientist (Plant pathology), Dr. Subhash Chandra, Scientist (Plant Breeding) and Dr. Debashis Paul, Scientist (Seed Technology) along with Dr. S. K. Verma Principal Scientist (Plant Breeding) from ICAR- CICR, Regional Station, Sirsa attended meeting on January 24, 2023 virtually to finalize the results of Common Zonal Trial to evaluate the GEAC approved BG-II hybrids conducted during 2022-23 under the chairmanship of Director of Research, Punjab Agricultural University, Ludhiana.
- Dr. Amarpreet Singh, Scientist(ss) Agronomy along with Dr. S. K. Verma, Principal Scientist attended in NARAKAS (Nagar Rajbhasha Karyanvayan Samiti) six monthly meeting at PNB Mandal Karyalaya, Barnala Road, Sirsa on January 25, 2023.

Scientists' Corner:

- Dr. R. Raja, Principal Scientist (Agronomy) attended the workshop on "Future prospects of cotton farming in Tamil Nadu" organized by Cotton Research Station, Tamil Nadu Agricultural University, Veppanthattai, Perambalur, Tamil Nadu on January 30, 2023.
- Dr. K. Baghyalakshmi, Scientist (Genetics and Plant Breeding) gave a lecture on "Bt Cotton varieties and Hybrids". In: training Programme on "Integrated Crop management (ICM) in Cotton" during January 30-31, 2023 for the farmers of Chithamur Block, Chengalpattu district, Tamil Nadu under SSEPERS/ATMA scheme on January 30, 2023.
- Dr. Rishi Kumar, Principal Scientist (Entomology) attended advisory committee meeting of Ms. Divya Bharti from PAU, Ludhiana on January 23, 2023.
- Manikandan, D. Blaise, K. Velmourougane, and Pooja Verma. 2023. Evaluation of customized micronutrient fertilizers to enhance cotton and soil nutrient status. Proceedings of the 108th Indian Science Congress. 3-7 January, 2023, ITM Nagpur University, Nagpur. Page no. 124. (Oral Presentation).
- D. Blaise, G.Majumdar, A. Manikandan, S. Santosh and Rohit Katiyar. 2023. Sub-soiling Improves Root Growth and Productivity of Transgenic BGII Cotton Hybrid and Asiatic Cotton Cultivar. Proceedings of the 108th Indian Science Congress. 3-7 January, 2023, ITM Nagpur University, Nagpur. Page no. 95-96. (Invited talk).
- Jain, H., Chahal, S., Singh, I. Sain, S.K., Siwach, P. 2023. The rising threat of geminiviruses: molecular insights into the disease mechanism and mitigation strategies. Molecular Biology Reports (2023). https://doi.org/10.1007/s11033-023-08266-y. NAAS Rating 8.32

Farmers' Corner: Success Story on Frontline Demonstration of Suraj Bt-Variety

Shri. Swapnil Shelki (29 years) a young and enthusiastic cotton farmer from Chistur village of Asthi taluk, Wardha district traditionally cultivated the Bt-hybrids for the last six years, since he started practiced farming along with his father from 2015. Although irrigated, the seed cotton yields were low (<6 to 7.2 q acre^{-1}), providing meager income. After he attended the National campaign on "Efficient and Balanced Use of Fertilizers" (Including Nano- fertilizers) at Kondhali village of Katol taluka on 21st June 2022 organised by ICAR-CICR, Nagpur, he realized that the yield was low due to high input intensive Bt-hybrids and their low population per hectare with poor nutrient management. Higher cost of cultivation added to the problem. Importance of Bt- cotton varieties and high density planting system (HDPS) with standard package of practices were elaborated through videos and lectures. ICAR- CICR, Nagpur gave soil test based fertilizer recommendations with soil health card. Similarly, he was convinced to practice quality cotton seed production techniques.

Under the NFSM-Frontline Demonstration (2022-23), Suraj Bt-variety was sown on 27th June 2022 with a spacing of three foot and half foot (0.90 m x 0.15 m) constituting a population of 25, 000 plants per acre. Based on the guidance from CICR, the following fertilizer and plant protection management practices were followed ; 500 kg (Farm yard manure), 75 kg (Urea), 100 kg (Single Super Phosphate), 30 kg (Muriate of Potash), 5 kg (Zinc Sulphate) and 2 kg (Borax) up to 5th October 2022. Heavy downpour in July to August was managed with drainage channels between cotton rows along the slope. No canopy management was warranted under the prevailing weather conditions. Nutrient loss was managed with 10 % excess application of fertilizers. Macronutrient deficiencies were rectified with foliar sprays of 2% Di ammonium phosphate, 1% Potassium nitrate. Micronutrient like 0.5% Zinc sulphate and 0.2% Borax was sprayed twice at flowering and boll initiation stages. The crop was protected with four sprays for sucking pest control and one spray for pink boll worm management and two sprays for boll rot control during the season. As a precaution, sticky traps, pheromone traps and *Trichogramma* cards were placed to monitor pest levels. Thus integrated nutrient and pest management reduced the use of chemicals in cotton cultivation. He also noticed less pests and diseases when compared to adjacent cotton fields. With the help of technical guidance of ICAR- CICR, Nagpur as well as timely weed control and water management, he gained 12-17 bolls per plant with an average boll weight of 3.40 g and had a bumper of yield of 1234 kg of seed cotton per acre. This is 23% higher over Bt-hybrids in the district. He produced 282 kg of cotton seeds from an acre and the average benefit-cost ratio was recorded as 1.88.

Apart from monitoring by NFSM-FLD,-CICR team, officials of Ginning Training Centre, Nagpur have also visited during harvest. Similarly, there were two visits by Department of Agriculture officials from Nagpur and Pune (Agriculture Commissioner) during the season. Further, team of experts from private seed and insecticide companies also frequently visited the fields. More than 100 farmers had visited the field and were convinced to practice this technology (Bt-variety with HDPS) in the forthcoming season. Recognising his efforts on quality seed production, Mr. Swapnil Shelki was felicitated during world soil day-2022 (05thDecember 2022). Also his experience was shared during 108th Indian Farmers Science Congress in RTM Nagpur University on 05th January 2023. In order to gain first hand information, cotton farmers can contact either FLD i/c or farmer (Mr. Swapnil Shelki -Mobile No.9158976742).

Information provided by

Dr.A.Manikandan

Sr.Scientist (Soil Science) & FLD (i/c)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ICAR-Central Institute for Cotton Research, Nagpur
(2022-2023)
Frontline Demonstrations (FLD's)
Objective: To demonstrate Bt-Cotton Variety in High Density Planting System
Treatments:
T1 – Suraj Bt Variety
T2 – Rajat Bt Variety
T3 – PKV081 Bt Variety
Farmer Name: Swapnil Shelki
Location: Chiatur
Soil: Black Cotton Soil
Variety: Suraj Bt-1 Variety
Date of sowing: 27/06/2022
PI:Dr. A. Manikandan


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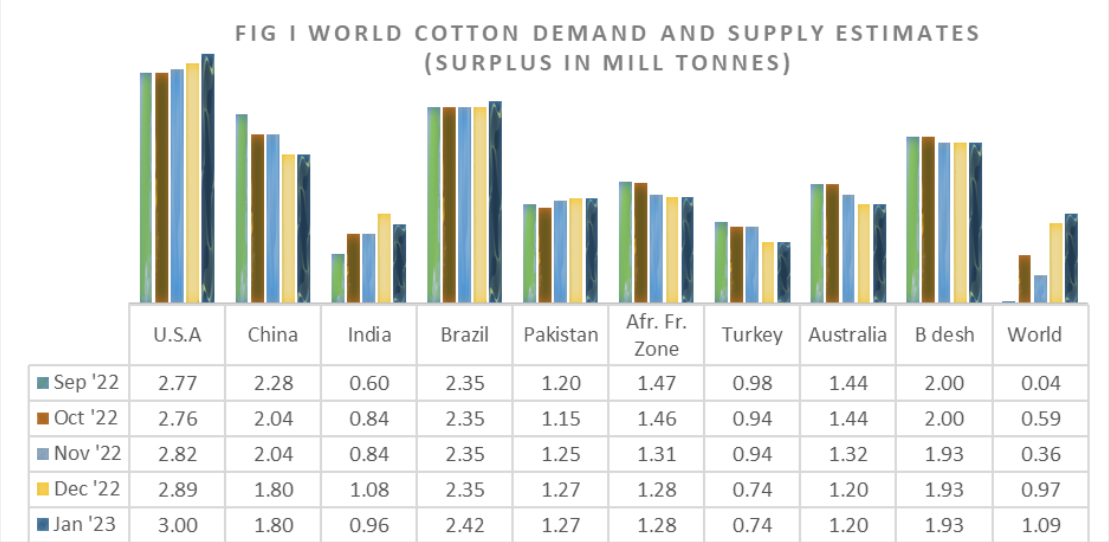
Cotton market scenario during January 2023

Dr. Isabella Agarwal, Principal Scientist Economics, CICR, RS, Coimbatore

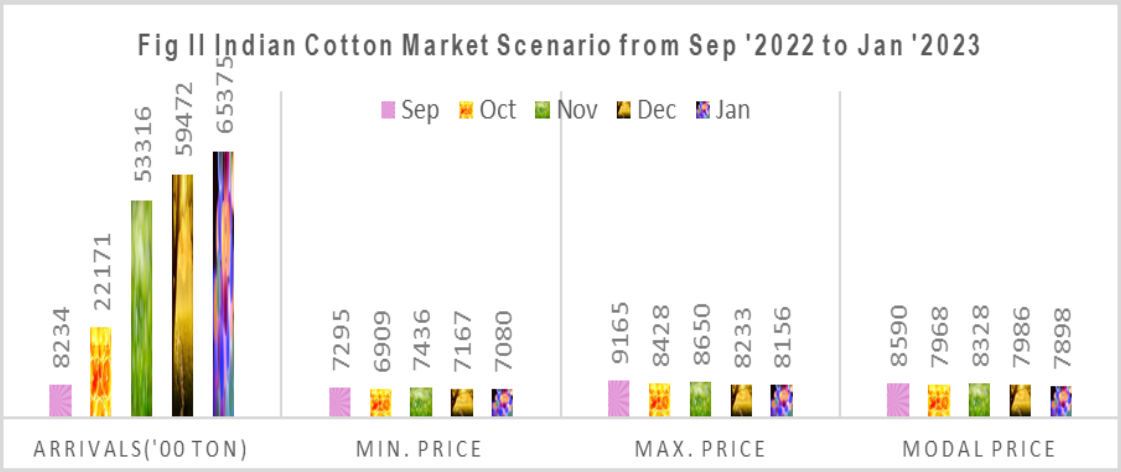
At world level, the demand supply scenario of cotton has been positive over the past few months by a surplus of 0.04 to 3.0 million tonnes of cotton production by major cotton producing countries as mentioned in Fig.I.



	U.S.A	China	India	Brazil	Pakistan	Afr. Fr. Zone	Turkey	Australia	B desh	World
Sep '22	2.77	2.28	0.60	2.35	1.20	1.47	0.98	1.44	2.00	0.04
Oct '22	2.76	2.04	0.84	2.35	1.15	1.46	0.94	1.44	2.00	0.59
Nov '22	2.82	2.04	0.84	2.35	1.25	1.31	0.94	1.32	1.93	0.36
Dec '22	2.89	1.80	1.08	2.35	1.27	1.28	0.74	1.20	1.93	0.97
Jan '23	3.00	1.80	0.96	2.42	1.27	1.28	0.74	1.20	1.93	1.09

Source: Calculated from WASDE report data

The Cotlook A Index was stable over the past few months holding to levels near 95 to 100 cents/lb. Cotton prices declined amid strong supply and weak demand. Cotton prices plunged more than 20% in the third quarter of 2022 (q/q) and continued to slide in the fourth quarter. Global consumption declined about 3% in 2022/23 (y/y) to levels well below the five-year average and is the key reason for the price weakness. Downside pressures saw cotton trading at two-year lows in October, marking a period of extreme volatility for the commodity. Initial price drivers included low crop yields in India, global supply chain hurdles and soaring energy prices coupled with the post-pandemic rise in demand boosted the price of cotton.



Source: Calculated data from agmarknet.nic.in

The price of kapas has seen a sharp increase to Rs 8,000-8,500 per quintal in most of the wholesale markets across the country wherein the trend continued till December following which the arrival was also likely in increase (Fig II). The cotton marketing season between November 2022 and October 2023 is estimated to have opened with farmers commanding average prices of Rs 8,500-9,000/quintal in most of the wholesale markets in India. The estimated cotton supply till end of the cotton season 2022-23, up to September 30 '2023 was 374.39 lakh bales consisting of the opening stock of 31.89 lakh bales at the beginning of the cotton season on October 1, 2022, with crop for the season estimated at 330.50 lakh bales and the imports for the season estimated at 12 lakh bales.

मराठवाड्यात कपाशीवर गुलाबी बोंड अळीचा प्रादुर्भाव

ॲग्रोवन वृत्तसेवा

परभणी : मराठवाड्यातील परभणी, हिंगोली, नांदेड, बीड, जालना, औरंगाबाद या जिल्ह्यांमधील कपाशीवर गुलाबी बोंड अळीचा प्रादुर्भाव ४ ते ५ टक्के आढळून आला आहे. वसंतराव नाईक मराठवाडा कृषी विद्यापीठातील कृषी कीटकशास्त्र विभागाच्या क्रॉपसॅप प्रकल्पांतर्गत केलेल्या सर्वेक्षणाद्वारे हे स्पष्ट झाले आहे. "आगामी काळात प्रादुर्भाव वाढण्याची शक्यता आहे. त्यामुळे शेतकऱ्यांनी फरदड कपाशीचे उत्पादन घेण्याचा मोह टाळावा. रब्बी पिकांचे उत्पादन घ्यावे," असे कृषी कीटकशास्त्रज्ञ प्रा. पी. एस. नेहरकर यांनी सांगितले.

मागील दोन आठवड्यांपासून वसंतराव नाईक मराठवाडा कृषी विद्यापीठातील कृषी कीटकशास्त्र विभागाच्या शास्त्रज्ञांनी क्रॉपसॅप प्रकल्पा अंतर्गत परभणी जिल्ह्यातील परभणी, सेलू, मानवत, पाथरी, नांदेड जिल्ह्यांतील नांदेड, लोहा, कंधार, हिंगोली जिल्ह्यातील वसमत, औंढा नागनाथ,

बीडमधील अंबाजोगाई, परळी, केज, जालना जिल्ह्यातील परतूर, मंठा, अंबड, घनसावंगी, जाफराबाद, बदनापूर तसेच औरंगाबाद जिल्ह्यातील औरंगाबाद, पैठण तालुक्यात प्रक्षेत्र भेटी दिल्या. त्या वेळी गुलाबी बोंडअळीचा प्रादुर्भाव ४ ते ५ टक्के झाला असल्याचे आढळून आले.

आगामी काळात प्रादुर्भाव वाढण्याची शक्यता आहे. मराठवाड्यातील अनेक भागांत विविध माध्यमातून सिंचनासाठी पाणी उपलब्ध आहे. त्याबरोबरच कापसाला चांगला उठाव असल्याने शेतकरी पाणी, खतांच्या मात्रा देऊन कपाशीची फरदड घेण्यावर भर देत आहेत. परंतु त्यामुळे गुलाबी बोंड अळीच्या वाढीसाठी पोषक वातावरण निर्माण होते. तिचे शाश्वत व्यवस्थापन करण्यासाठी वेळेवर हंगाम संपविणे गरजेचे आहे. शेतकऱ्यांनी फरदडीचे उत्पादन घेऊ नये, असे आवाहन प्रा. नेहरकर यांनी केले.

प्रादुर्भाव टाळण्यासाठी हे करावे...

- कपाशीची फरदड घेऊ नये
- वेळेवर कपाशीची वेचणी करून डिसेंबरनंतर शेतात कपाशीचे पीक ठेवू नये
- हंगाम संपल्यानंतर शेतामध्ये जनावरे चरण्यासाठी सोडावीत
- हंगाम संपल्यावर ताबडतोब पऱ्हाटीची विल्हेवाट लावावी.
- शेतात, शेताजवळ पऱ्हाटी रचून ठेवू नये.
- पऱ्हाटीचा बारीक चुरा करून कंपोष्ट खतासाठी त्याचा उपयोग करावा
- जिनिंग मिल आणि साठविलेल्या ठिकाणी कामगंध सापळ्यांचा वापर करावा

'Nursery of tur and cotton will improve profitability of farmers'

Members of the VIA during the workshop.

LOKMAT NEWS NETWORK
NAGPUR

"There are many successful nurseries operating in Vidarbha for commercial and ornamental trees, shrubs, annuals, lawn grass and other plants, the innovative and successful nursery of tur and cotton will improve overall productivity, higher per acre yield and per acre profitability for Vidarbha farmers, said Milind Shende, superintending agriculture officer, Nagpur district, while delivering the key note address during the one day field workshop organised by VIA Agro and Rural Development Forum at Mahalaxmi Gaushala, Koradi.

It is necessary to give the young seedlings due attention in the first few weeks after germination. The young and tender seedlings growing in nursery at farmer backyards are easier and more economical to handle in small areas than in the main planting field, said Dr V Santhy, principal Scientist CICR.

The innovative technology will save considerable time for the raising of the next crop, will fetch higher price on early arrival in mandi. There is saving of land and Labour as main field will be occupied by the crop for lesser duration. Hence intensive crop rotation can be followed, said Dr Vinod Raut, department of horticulture, PDKV Nagpur.

Many farmers including Mr Sanjay Satyakar from Parshivni, the recipient of Government of Maharashtra award for tur productivity shared their success stories on the new technology.

The programme was attended Rohit Agarwal, CEO Sungod Agfarms, Chandan Mutha, CEO Aashapura Agro Industries Chandrapur, Dr Raghav Paralkar, CEO Guna Seeds.

RB Goenka, VIA vice-president, Sharad Paliwal, Shachi Mallick, Kapil Sahoo, Kiran Gokhale and others were present.

Hitavada 4/1/2023

Naturally brown cotton

CICR presented 'Vaidehi-95', a derivative of wild species of naturally brown cotton.

CENTRAL Institute for Cotton Research (CICR) presented 'Vaidehi-95', a derivative of wild species of cotton which naturally possesses Dark Brown coloured lint. It gives the cotton a brown shade, eliminating the dyeing process.

Wastewater from textile dyeing is a huge pollutant around the world. Developed at ICAR, this is one fine alternative to colour dying white cotton to brown.

Dedicated to finding more such sustainable options, this is produced with maximum economic and environment responsibility. The crop is rainfed and pesticide-free with zero stress on natural resources.

शेतकऱ्यांनो, शेती उत्पादनात वाढ करा

वाय. जी. प्रसाद : जिल्हा कृषी महोत्सवास प्रारंभ

केंद्रीय कापूस संशोधन केंद्राचे संचालक वाय. जी. प्रसाद संवाद साधताना.

लोकमत न्यूज नेटवर्क

नागपूर : नवीन आधुनिक तंत्रज्ञान शेतकऱ्यांच्या बांधावर उपलब्ध करून त्यांच्या उत्पादनात वाढ करण्याचे कृषी तंत्रज्ञान व्यवस्थापन यंत्रणेचे प्रयत्न स्तुत्य असून शेतकऱ्यांच्या हिताचे आहे. यासोबतच केंद्रीय कापूस संशोधन केंद्राच्या एकात्मिक शेती प्रकल्पाला शेतकऱ्यांनी भेट देऊन शेती उत्पन्नात वाढ करावी, असा सल्ला केंद्रीय कापूस संशोधन केंद्राचे संचालक वाय. जी. प्रसाद यांनी शेतकऱ्यांना दिला.

डॉ. पंजाबराव देशमुख कृषी विद्यापीठ पदव्युत्तर वसतिगृह परिसरात आयोजित जिल्हा कृषी महोत्सवाच्या उद्घाटनपर भाषणात मार्गदर्शन करताना ते बोलत होते. माफसु विद्यापीठाचे संचालक (विस्तार शिक्षण) ए. यू. भिकाने, तर अध्यक्षस्थानी कृषी सहसंचालक राजेंद्र साबळे होते. पंजाबराव देशमुख कृषी विद्यापीठाचे सहयोगी अधिष्ठाता डॉ. प्रकाश कडू, एबीएम कॉलेजचे प्रा. विजय खवले, कृषी तंत्रज्ञान व्यवस्थापन यंत्रणेच्या प्रकल्प संचालिका डॉ. नलिनी भोयर, जिल्हा अधीक्षक कृषी अधिकारी मिलिंद शेंडे, कृषी सहसंचालक राजेंद्र साबळे, डॉ. प्रकाश कडू यांनी शेतकऱ्यांना मार्गदर्शन केले. प्रास्ताविक डॉ. नलिनी भोयर यांनी केले. संचालन शिवणकर यांनी केले. मिलिंद शेंडे यांनी आभार मानले.

Lokmat , 5 January, 2023

Tarun Bharat
28/1/2023

मानव कल्याणासाठी मातीचे आरोग्य जपा

शेतीत शास्त्रीय पद्धत स्वीकारा

शेती नफ्यात आणायची असेल तर शास्त्रीय पद्धतीने शेतीचे नियोजन करावे लागेल. खताचे व्यवस्थापन शेतकऱ्यांना आत्मसात करावे लागेल. जमिनीचे आरोग्य सुदृढ राहील यावर भर द्यावा लागेल, अशी भूमिका कृषी विज्ञान केंद्राचे प्रमुख शास्त्रज्ञ डॉ. सुनील रोकडे यांनी मांडली. ते म्हणाले, शेती नफ्यात आणण्यासाठी कल्पकताही ठेवावी लागेल. पिकांची योग्य निवड करावी लागेल. मातीचे परीक्षण करून तिच्यातील कुठले घटक कमी झाले, याचाही अभ्यास करून त्यानुसार खत टाकावे लागतील. आमच्या वतीने आम्ही ज्या योजना राबवितो, त्याचाही लाभ शेतकऱ्यांनी घ्यावा अन् आपले जीवन सुखी संपन्न करावे, असे आवाहन डॉ. सुनील रोकडे यांनी केले.

नागपूर, २७ जानेवारी

समस्त मानव जातीच्या पोटाची खळगी भरण्याचे कार्य मातीद्वारेच होते. मात्र गेल्या काही वर्षांपासून आपण सातत्याने रासायनिक खतांचा वापर वाढवलेला आहे. यामुळे मातीचे आरोग्य बिघडले आहे. अशा परिस्थितीत मानव कल्याणासाठी तरी मातीचे आरोग्य जपाच असा महत्त्वपूर्ण संदेश कृषी विज्ञान केंद्राच्या संचालक डॉ. ब्लेझ डिसूजा यांनी दिला.

कृषी विज्ञान केंद्र तसेच केंद्रीय कापूस संशोधन संस्थानच्या वतीने पार पडलेल्या प्रशिक्षण कार्यक्रमात ते बोलत होते. यावेळी कृषी विज्ञान केंद्राचे प्रमुख शास्त्रज्ञ डॉ. सुनील रोकडे, डॉ. विनिता गोतमारे, डॉ. व्ही. चिन्ना बाबू नाईक, डॉ. मणिकंदन, डॉ. दीपक नगराळे, डॉ. एस. एस. पाटील, डॉ. यु. व्ही. गलकाटे, डॉ. यू. एन. नंदनकर, सुनीता चौहान, डॉ. दीपा लाल, डॉ. सचिन वानखेडे, डॉ. पी. बी. देऊळकर, एम. आर. मेश्राम, प्रशांत गायकवाड, राजेश गिरडकर, जयश्री खोब्रागडे उपस्थित होते.

माती परीक्षणाचे महत्त्व आणि पीक खतांच्या आवश्यकतेबाबत प्रशिक्षणात माहिती देण्यात आली. यात विविध गावातील ६० आदिवासी शेतकरी सहभागी झाले होते. माती हा नैसर्गिक व्यवस्थेचा महत्त्वाचा भाग आहे. सर्वांगीण मानव कल्याणात तिचे मोठे योगदान आहे. म्हणूनच मातीशी माणसांना जोडण्याचे कार्य आता व्हायला हवे, असेही डॉ. ब्लेझ डिसूजा यांनी स्पष्ट केले.

(तभा वृत्तसेवा)

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बुधवार, २५ जानेवारी २०२३
सकाळ अॅग्रोवन

नैसर्गिकरित्या कपाशीमध्ये आणली आगरोधकता

अमेरिकन संशोधनामुळे कोणत्याही रसायनाशिवाय आगरोधक कपड्यांची निर्मिती शक्य

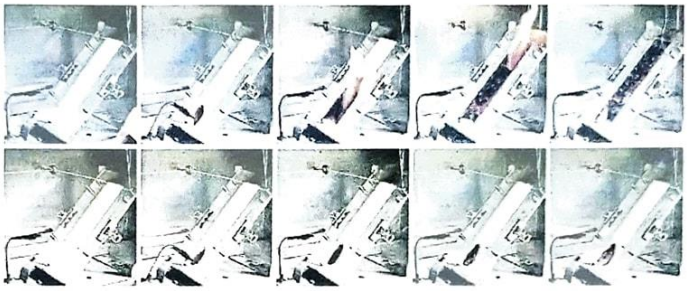
आगीपासून बचावासाठी साधारणतः विविध रसायनांची मिश्रणे लावून आगरोधक कपड्यांची निर्मिती केली जाते. त्याऐवजी आगीपासून स्वतःचा बचाव करणाऱ्या कापसाचे चार वाण अमेरिकन कृषी विभागाच्या संशोधन सेवेतील शास्त्रज्ञांनी विकसित केले आहेत. या कापसापासून बनवलेले कापड कोणत्याही रसायनांच्या लेपाशिवाय स्वतःचा आगीपासून बचाव करू शकते. हे संशोधन 'प्लॉस वन' या संशोधनपत्रिकेमध्ये प्रकाशित करण्यात आले आहे.

पंच महाभूतामधील आग, वारे, पाणी योग्य प्रमाणात असताना पोषक ठरतात. मात्र त्यांचे प्रमाण आवाक्याबाहेर गेल्यास त्यातून जंगलामध्ये वणवे, जमिनीवर आणि सागरामध्ये वादळे, चक्रीवादळे, नद्यांना येणारे पूर अशा अनेक आपत्ती निर्माण होतात. त्यांच्यापासून वाचण्यासाठी बचाव करण्यासाठी माणूस प्राचीन काळापासून प्रयत्न करत आला आहे. सामान्यतः पारंपरिक कापसापासून बनवलेले कापड जेव्हा आगीच्या संपर्कात येते, त्या वेळी काही क्षणात जळून खाक होते. मात्र आगींच्या ज्वाळांमध्ये नव्याने विकसित केलेल्या जातींच्या कापसापासून बनवलेले कापड चांगल्या प्रकारे तग धरू शकते.

ब्रायन कोन्डोन

त्याविषयी माहिती देताना ओरलॅन्स येथील 'एआरएस' च्या 'कॉटन केमिस्ट्री अॅण्ड युटिलायझेशन रिसर्च युनिट' मधील निवृत्त शास्त्रज्ञ ब्रायन कोन्डोन यांनी सांगितले, की या नव्या जातींमुळे कॉटनच्या कपड्यांमध्ये आगीपासून सुरक्षिततेचे गुणधर्म येणार आहेत. या नव्याने विकसित जातींची व्यावसायिक पातळीवर लागवड करणे शक्य झाल्यास रासायनिक आगी प्रतिबंधक घटकांचे प्रमाण कमी करणे शक्य होणार आहे. कारण हे घटक पर्यावरणावर विपरीत परिणाम करणारे ठरत आहेत. या जाती शेतकरी, कापड उत्पादक आणि ग्राहक या सर्वांसाठी महत्त्वाचे ठरणार आहेत. सर्वात महत्त्वाची बाब म्हणजे अशा आगप्रतिबंधक कपड्यांच्या निर्मितीचा खर्चही कमी होऊ शकेल.

आग प्रतिरोधक गुणधर्म असलेल्या कापूस जाती आता शेतातच पिकवता येतील.



वरील ओळीतील छायाचित्रामध्ये सामान्य कापड आगीच्या संपर्कात येताच काही क्षणात जळून खाक झाल्याचे दिसत आहे. तर खालील ओळीतील छायाचित्रामध्ये कापडाला खालील बाजूला आग लागूनही तिचा प्रसार वरपर्यंत झालेला दिसत नाही.

अशी होती संशोधनाची पद्धत :

सामान्यतः कापसापासून तयार झालेले तंतू किंवा धागे हे त्वरित आग पकडणारे असतात. त्यामुळे अशा धाग्यापासून बनवलेले कापडही त्वरित आग पकडते. त्यांचा व ते वापरणाऱ्या व्यक्तींचा आगीपासून बचाव व्हावा, या उद्देशाने संरक्षणात्मक कपडे तयार करताना या कापडामध्ये आग प्रतिबंधक किंवा आगीला मंद करणारी रसायने वापरली जातात. उदा. महागड्या जाजम, गाद्या, आच्छादने इ. मध्ये अशा कापसाचा वापर केला जातो. वेगवेगळ्या मूळ जातीपासून पैदास पद्धतीद्वारे नैसर्गिक जनुकांच्या एकमेकातील समन्वयातून आगरोधक गुणधर्म नव्या जातीमध्ये विकसित करण्यात आले आहेत. या संशोधनामध्ये मिसिसिपी येथील 'एआरएस' च्या 'जेनेटिक्स अॅण्ड सस्टेनेबल अॅग्रीकल्चर रिसर्च युनिट' मधील शास्त्रज्ञ डॉ. जॉह्नी जेन्किन्स (Johnie Jenkins) आणि जॅक सी. मॅकार्टी यांचा समावेश होता. त्यांनी कपाशीतील वेगवेगळ्या गुणधर्मासाठी कारणीभूत जनुकांची ओळख पटविण्याचे काम केले. उदा. उत्पादन, कीड प्रतिकारकता, तंतू किंवा धाग्यांचा दर्जा (लांबी, ताकद आणि तलमपणा इ.) त्याविषयी माहिती देताना जेन्किन्स यांनी सांगितले, की कपाशी उत्पादनासोबतच अंतिम उत्पादनापर्यंत (डर्ट टू शर्ट) प्रत्येक टप्प्यावर आवश्यक गुणधर्मांसाठी जी जनुकीय विविधता आवश्यक असते, त्याबाबत आमच्या गटाने काम केले. कारण हे उत्पादन आधीच्या आगरोधक कपड्यांप्रमाणे केवळ प्रयोगशाळेत तयार होणार नव्हते, तर प्रत्यक्ष शेतामध्ये वाढणार होते. त्यातील गुणधर्मही संपूर्णपणे नैसर्गिक जनुकांच्या साह्याने विकसित करण्यावर आमचा भर होता. सोबत शेतातील व्यवस्थापन पद्धत, धाग्यांचा दर्जा व त्याचे गुणधर्म, प्रत्यक्षामध्ये जी व्यक्ती ते कपडे वापरणार आहे, त्यांना मिळणारा त्या कपड्यांचा अनुभव अशा अनेक बाबींचा सातत्याने विचार करण्यात आला. कारण जो व्यक्ती कापूस पिकवणार आहे, किंवा त्याचे कपडे अंगावर घालणार आहे, अशा दोघांनाही समाधान मिळाल्याशिवाय कोणतीही जात यशस्वी होत नाही.

छायाचित्रात उजवीकडे डॉ. जॉह्नी जेन्किन्स. त्यांना २०१८ मध्ये कपाशी संशोधनाबद्दल 'हॉल ऑफ फेम' मिळालेला आहे.

नैसर्गिकता हीच मोठी उपलब्धी :

या पैदास प्रक्रियेमध्ये वापरलेल्या सर्व मूळ कपाशी जाती या आग पकडणाऱ्या धाग्यांची निर्मिती करणाऱ्या असल्या तरी त्यातील एकही जनुक पैदास प्रक्रियेत पुढील पिढीमध्ये येणार नाही. यावर भर देण्यात आला. त्याऐवजी एकापेक्षा अधिक जनुकांची संघशक्ती किंवा समन्वयातून लक्षणीयरित्या कमी उष्णता उत्सर्जन करण्याची क्षमता असलेले धागे तयार करण्यात आले. सर्वात महत्त्वाची बाब म्हणजे कृषी विषयक गुणधर्म (पिकाचे उत्पादन, कीडरोग प्रतिकारकता इ.) आणि धाग्यांचा दर्जा या बाबतही या नव्या जाती [illegible] कसोटीवर उतरणाऱ्या असल्याचा विश्वास शास्त्रज्ञांनी दिला आहे. ब्रायन कोन्डोन म्हणाले की, धाग्यांपासून [illegible] आणि अंतिम कापड उत्पादनामध्ये कपडे चुरगळणार नाहीत, इस्त्री केल्याप्रमाणे दिसतील आणि त्याच वेळी त्यामध्ये आगरोधक गुणधर्मही असतील, यासाठी आमचा प्रयत्न होता. यासाठी कार्य करणारी कपाशीतील वैशिष्ट्यपूर्ण आणि नैसर्गिक जनुकीय यंत्रणा शोधून काढणे हीच बाब आमची उपलब्धी आहे, असे म्हणता येईल

Tarun Bharat
28/1/2023

मानव कल्याणासाठी मातीचे आरोग्य जपा

नागपूर, २७ जानेवारी

समस्त मानव जातीच्या पोटाची खळगी भरण्याचे कार्य मातीद्वारेच होते. मात्र गेल्या काही वर्षांपासून आपण सातत्याने रासायनिक खतांचा वापर वाढवलेला आहे. यामुळे मातीचे आरोग्य बिघडले आहे. अशा परिस्थितीत मानव कल्याणासाठी तरी मातीचे आरोग्य जपाच असा महत्त्वपूर्ण संदेश कृषी विज्ञान केंद्राच्या संचालक डॉ. ब्लेझ डिसूजा यांनी दिला.

कृषी विज्ञान केंद्र तसेच केंद्रीय कापूस संशोधन संस्थानच्या वतीने पार पडलेल्या प्रशिक्षण कार्यक्रमात ते बोलत होते. यावेळी कृषी विज्ञान केंद्राचे प्रमुख शास्त्रज्ञ डॉ. सुनील रोकडे, डॉ. विनिता गोतमारे, डॉ. व्ही. चिन्ना बाबू नाईक, डॉ. मणिकंदन, डॉ. दीपक नगराळे, डॉ. एस. एस. पाटील, डॉ. यु. व्ही. गलकाटे, डॉ. यु. एन. नंदनकर, सुनीता चौहान, डॉ. दीपा लाल, डॉ. सचिन वानखेडे, डॉ. पी. बी. देऊळकर, एम. आर. मेश्राम, प्रशांत गायकवाड, राजेश गिरडकर, जयश्री खोब्रागडे उपस्थित होते.

माती परीक्षणाचे महत्त्व आणि पीक खतांच्या आवश्यकतेबाबत प्रशिक्षणात माहिती देण्यात आली. यात विविध गावातील ६० आदिवासी शेतकरी सहभागी झाले होते. माती हा नैसर्गिक व्यवस्थेचा महत्त्वाचा भाग आहे. सर्वांगीण मानव कल्याणात तिचे मोठे योगदान आहे. म्हणूनच मातीशी माणसांना जोडण्याचे कार्य आता व्हायला हवे, असेही डॉ. ब्लेझ डिसूजा यांनी स्पष्ट केले.

(तभा वृत्तसेवा)

शेतीत शास्त्रीय पद्धत स्वीकारा

शेती नफ्यात आणायची असेल तर शास्त्रीय पद्धतीने शेतीचे नियोजन करावे लागेल. खताचे व्यवस्थापन शेतकऱ्यांना आत्मसात करावे लागेल. जमिनीचे आरोग्य सुदृढ राहील यावर भर द्यावा लागेल, अशी भूमिका कृषी विज्ञान केंद्राचे प्रमुख शास्त्रज्ञ डॉ. सुनील रोकडे यांनी मांडली. ते म्हणाले, शेती नफ्यात आणण्यासाठी कल्पकताही ठेवावी लागेल. पिकांची योग्य निवड करावी लागेल. मातीचे परीक्षण करून तिच्यातील कुठले घटक कमी झाले, याचाही अभ्यास करून त्यानुसार खत टाकावे लागतील. आमच्या वतीने आम्ही ज्या योजना राबवितो, त्याचाही लाभ शेतकऱ्यांनी घ्यावा अन् आपले जीवन सुखी संपन्न करावे, असे आवाहन डॉ. सुनील रोकडे यांनी केले. ■

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