COTTON INNOVATE

Cotton Innovate

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

Cotton boll finished by bollworms
Photo: Dr. M. Sabesh

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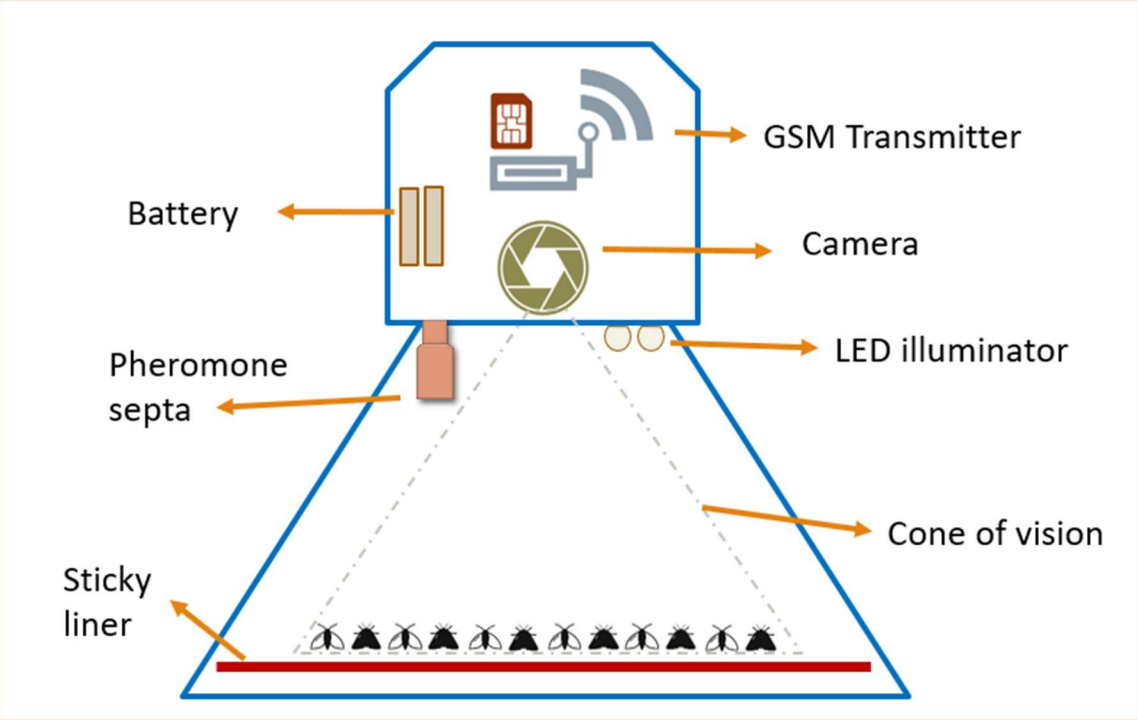
Invited Research Note

Wireless smart trap for automated pest monitoring in cotton

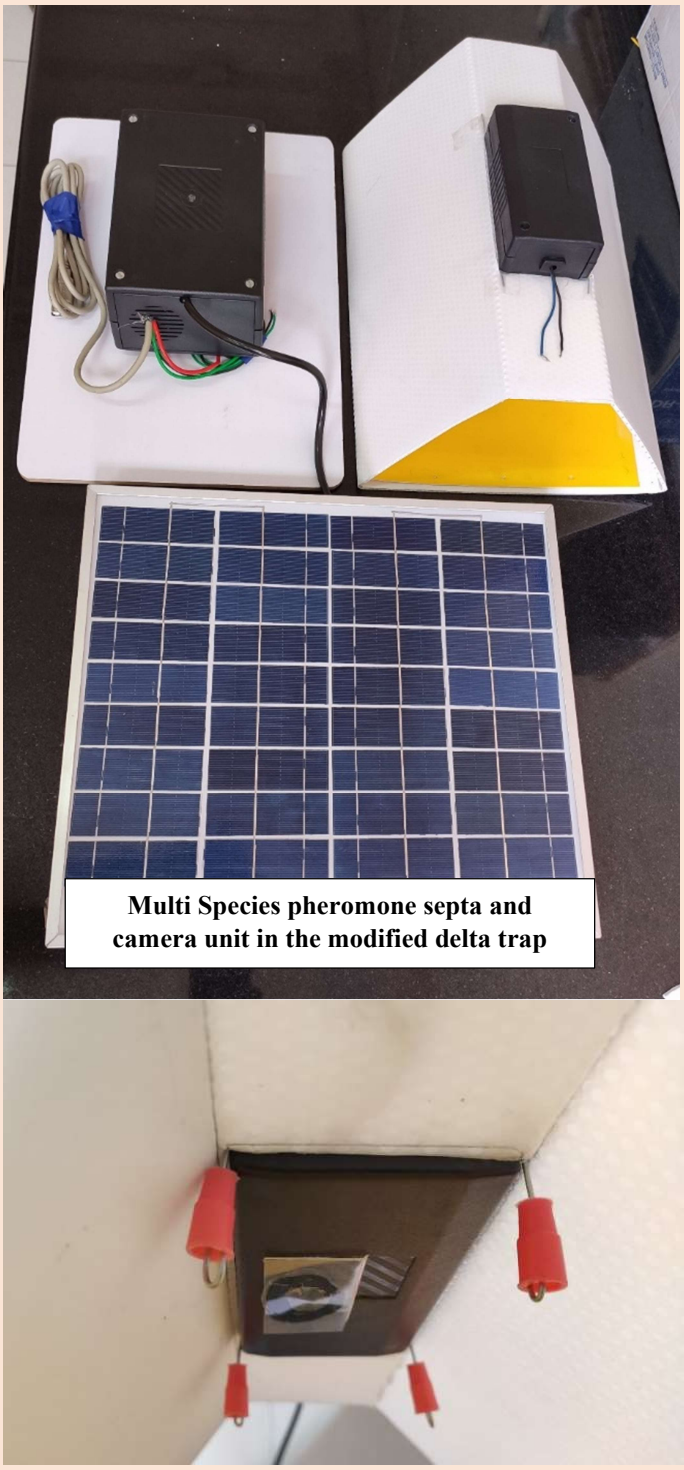
Dr. K. Rameash
Principal Scientist (Entomology), ICAR - CICR Regional Station, Coimbatore

The conventional pheromone trap technology has many intrinsic limitations, though it is being widely used for monitoring and mass trapping of key insect pests in cotton. The trap catch data only gives the information of the number of insects trapped between two consecutive surveys, usually between 7-15 days. With poor temporal resolution measurement, the dynamics of pest population density in an area cannot be accurately monitored. Further, the trap catches a single species of insect pest, which necessitates multiple traps in a single field for monitoring different pests. Additionally, the collection of trap data consists of repeated field surveys and the process is laborious, time consuming and prone to human errors. Multi-location trap data cannot be synchronized to measure the target pest population over a wider area.

To circumvent the limitations of the conventional trapping system, a wireless smart trap is being developed at ICAR-CICR, Regional Station, Coimbatore to target multi-species lepidopterous pests of cotton. Individual pheromone septa targeting the *Pectinophora gossypiella* [7,11-hexadecadienyl acetate], *Spodoptera litura* [(Z,E)-9,11-Tetradecadienyl acetate], *Helicoverpa armigera* [Z-9-Hexadecenal] and *Earias vittella* [(E, E)-10,12- hexadecadienyl] are housed in a modified delta trap, and the trap catch is recorded as images and transmitted to a remote server at a specific time interval for a real time pest monitoring.



The smart trap imaging and transmission system is developed by integrating a single board computer (Raspberry Pi / Arduino ESP 32); camera module and GSM/wi-fi modules. The standalone system is powered by 10w solar panel with a rechargeable battery. A control unit will trigger the camera module at specific time intervals to record an image of trapped insects (presently tested at every one-hour interval). The recorded image is saved in a memory card kept inside the single board computer and simultaneously transmitted to a remote server *via* GSM/wi-fi modules. A weather sensor module is also integrated with the smart trap that sends the information on the temperature, relative humidity, atmospheric pressure and altitude along with the image. The combined data is optimised and transmitted *via* 4G GSM and/or thorough wi-fi module and delivered to a remote server and *via* e-mail (Gmail) and mobile application (Telegram Bot).



Multi Species pheromone septa and camera unit in the modified delta trap

By investigating the real-time trap catch with corresponding weather data, the pest dynamics in cotton could be comprehended in a better way, that would certainly lead to establishing a more reliable pest forewarning system and better pest management practices in the crop.

Popular Article

Agro techniques for enhancing the yield potential of ELS cotton

P. Nalayini, K. Sankaranarayanan and A. H. Prakash
ICAR - CICR Regional Station, Coimbatore

The term “extra-long staple” (ELS) Cotton typically denotes cotton fibre of extraordinary fibre length. The recognized industry standard for the minimum fibre length of an ELS fibre is 34.925 mm. This minimum is significantly longer than traditional varieties of cotton with the fibre length of 26-27 mm. Apart from the superior fibre length, ELS cottons also are recognized for their superior strength and better uniformity. In spite of its benefits of ELS fibre characteristics and its apparent desirability, it is grown only in limited quantities and ELS and LS (Long staple) cottons represented only about 3 % of the entire world’s cotton production. Environmental conditions for ELS cottons are specific and parts of south India are ideal to grow ELS Cotton.

In drip fertigation, fertilizers can be combined along with irrigation water and applied precisely to the root zone thereby the efficiency of water and applied fertilizers could be enhanced. ELS cotton varieties and hybrids are longer in duration favouring greater utility of the drip system as compared to short duration varieties. The drip irrigation system is the best suited for water scarce situation. Most of the ELS cotton growing districts (Coimbatore, Dharmapuri, Salem and Namakkal in Tamil Nadu) fall under dark (80 per cent of ground water utilized, GWU) and grey (65-80 per cent of GWU) categories with respect to status of irrigation water availability. Suvin and other ELS cotton varieties are grown in red soils rated as hungry and thirsty in major areas in Northern districts of Tamil Nadu.

It has been reported that cotton (lint yield of more than 2250 kg/ha) using drip irrigation was obtained in Arizona, U.S.A. Similarly, highest seed cotton yield (7040 q/ha) under drip fertigation + polymulch was recorded at CICR, Coimbatore.

Fertilization Treatments	Water conservation Techniques			MEAN
	Drip	Drip + Poly Mulch	Control	
T1 - 100 % NPK	3740	5920	3290	4316
T2 - T1 + Zn SO_4	4460	6480	3720	4886
T3 - T1 + Mg SO_4	5320	6970	3820	5370
T4 – T1+ Boron	5200	7370	3910	5493
T5 – T1 + $ZnSO_4$+ $MgSO_4$ + Boron	5760	**7820**	4110	5896
T6 -75 % of T5	4430	7660	3920	5336
MEAN	**4820**	**7040**	**3775**	
CD (P=0.05) for W	416			
CD (P=0.05) for F	599.0			

Table 1. Seed cotton yield in ELS Bt cotton* as influenced by water conservation techniques and application of balanced fertilizers

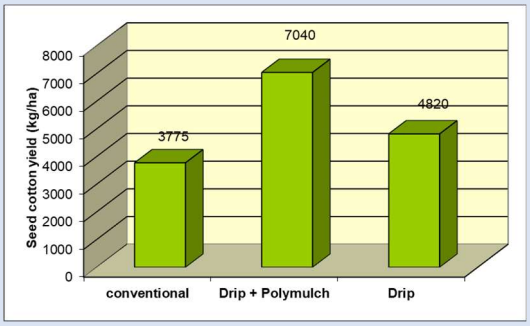
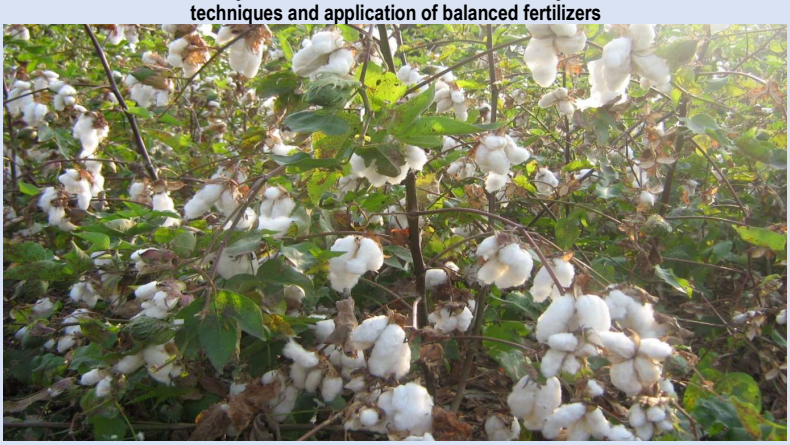


Fig.1. Comparison of Yield potential of ELS Cotton under Drip, conventional and Drip + Poly mulching



Polymulched, drip fertigated ELS cotton under balanced fertigation

Polymulched ELS Bt cotton with greengram as intercrop

Drip + poly mulching recorded 46.1% and 86.5% higher seed cotton yield than drip irrigation without poly mulch and conventional method respectively. Balanced fertigation with 120: 60:60 kgs NPK /ha along with zinc sulphate (50 kg/ha), magnesium sulphate (50 kg/ha) + Boron as Solubor (1 kg /ha for soil application and 0.15 % as foliar spray twice during flowering to boll development stages recorded the highest (7820 kg/ha) seed cotton yield as against 3290 kg/ha recorded under conventional irrigation with NPK alone.

Popular Article

Identification of oviposition deterrents for ethological pest management: collection, extraction and identification method for American boll worm and Pink boll worm in cotton

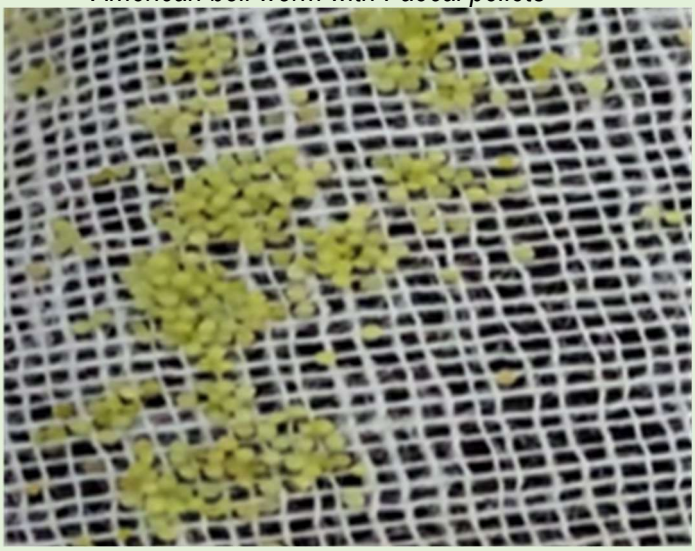
Shah Vivek, Rachna Pande and Pooja Verma
ICAR-Central Institute for Cotton Research (CICR), Nagpur, India

Deposition of chemical cues, to keep away other individuals of the same species in formerly utilized resource is termed as oviposition deterrent. Oviposition preference of an insect on a host or a substrate varies due to the chemical cues associated with them which can play key role in ethological pest management. In this context studies were carried out to standardized protocol for collection, extraction and identification of these volatiles in American Boll worm *Helicoverpa armigera* (Hübner) and Pink boll worm *Pectinophora gossypiella* (Saunders) using GC-MS. Population of American and Pink boll worm were collected from CICR, Nagpur and were maintained on natural food to reduce the chances of variations caused due to chemical composition of diets i.e. cotton squares and bolls respectively. The field collected populations were reared at 27±2^{0}C, photoperiod of 14L:10D and 65±5% of relative humidity, in insectary. For collection of volatiles from eggs and faecal pellets, freshly laid eggs and faecal pellets (Fig. 1) were sampled in appropriate solvent. The samples were incubated overnight at 4^{o}C and supernatant was collected for GCMS analysis. For identification and quantification of compounds combined GCMS system was used and data was evaluated by TIC (Total ion chromatogram). Helium gas (99.99% purity) was used as a carrier gas/mobile phase. The mass spectra generated using the MS was compared with the stored data base of NIST mass spectral library (NIST 2014 version). The key compounds identified were mainly fatty acid and their methyl ester derivatives (C12 to C18). The suitable blend of identified volatiles needs to be standardized that gives maximum oviposition deterrent effect in crop pest ecosystem.

Fig 1. Samples analysed under GCMS

American boll worm with Faecal pellets

Pink boll worm with Faecal pellets



Pink boll worm with Faecal pellets

Freshly laid eggs of Pink boll worm

CICR Happenings

List of important events or meetings during January 2021

Event / Meeting	Venue	Date
Meeting on budget utilization and pending proposals	ICAR-CICR, Nagpur (Virtual	February 01, 2021
Skill development training programme and distribution of power weeder under Scheduled Caste Sub-Plan (SCSP)	Godhani, Umred, Nagpur	February 04, 2021
Review meeting of MGMG, SCSP, TSP schemes and KVK	ICAR-CICR, Nagpur	February 08, 2021
Training cum workshop program under Tribal Sub Plan (TSP) scheme	Krishi Vigyan Kendra, Gadchiroli	February 10, 2021
Training program and distribution of groundnut seeds to Tribal farmers under	ICAR-CICR, Nagpur	February 11, 2021
General Body meeting to form Staff Recreation club of ICAR-CICR	ICAR-CICR, Nagpur	February 11, 2021
Meeting with Shri Manish Daga, Managing Director of Cottonguru Group to discuss about technology interventions in Vidarbha	ICAR-CICR, Nagpur	February 12, 2021
Skill up-gradation training for Administrative Staff of ICAR-CICR Nagpur by HRD Cell	ICAR-CICR, Nagpur	February 12, 2021
Review meeting on pond based Integrated Farming system model	ICAR-CICR, Nagpur	February 15, 2021
Farmers Training cum workshop and Kisan Mela under IRM project	Chargaon, Umred, Nagpur	February 19, 2021
Sensitization workshop "Dissemination of Pink Bollworm management strategies" through video conferencing	ICAR-CICR Regional Station, Coimbatore	February 19, 2021
Chhatrapati Shivaji Maharaj Jayanti Celebrations	ICAR-CICR, Nagpur	February 19, 2021
Meeting on Technology demonstration	ICAR-CICR, Nagpur	February 25, 2021
National Science Day	ICAR-CICR, Nagpur	February 27, 2021
Skill development training programme under Scheduled Caste Sub-Plan (SCSP)	Thombara, Umred, Nagpur	February 12, 2021
	Welsakhara, Umred, Nagpur	February 12, 2021
	Amboli, Umred, Nagpur	February 20, 2021
	Dhurkheda, Umred, Nagpur	February 24, 2021

Training cum workshop program under Tribal Sub Plan scheme

CICR Happenings

Farmers Training cum workshop and Kisan Mela under IRM project

Skill up-gradation training for Administrative Staff

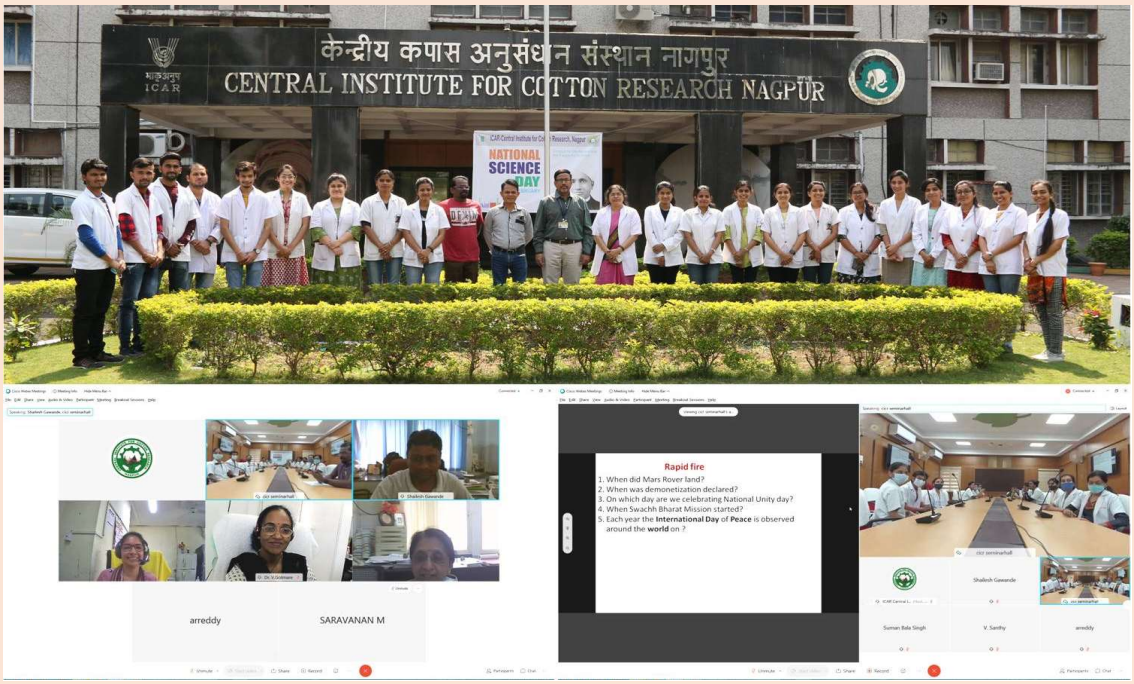
Skill development training programme under Scheduled Caste Sub-Plan (SCSP)

Shivaji Jayanti Celebrations

CICR Happenings

Celebration of National Science Day at ICAR-CICR, Nagpur

ICAR-CICR celebrated "National Science Day" on February 27, 2021 by conducting exposure program during the week and Quiz competition for the M.Sc students from various colleges. Dr. J. Amudha and Dr. G. Balasubramani, Principal Scientists (Biotechnology) conducted the Quiz competition in a virtual mode on the theme area "Future of STI: Impacts on Education, Skills, and Work" of National Science Day 2021.



Institute Germplasm Identification Committee visit

The Institute Germplasm Identification Committee (IGIC) of ICAR-CICR, Nagpur visited the field experiment of Dr. S. M. Palve on February 22, 2021 to verify the novelty and distinctiveness of the proposed genetic stocks of upland cotton having high ginning outturn (GOT) percent. The performance of the entries (over 3 years) for GOT and fibre quality traits of 201 backcross inbred lines developed through interspecific hybridization were briefed to the committee. The entry CNH 204710 had highest ginning outturn percent of 43.9% (averaged over 3 years) followed by CNH 20378 and CNH 20387 (43.4%) and CNH 204910 (43.3%). While, the zonal check for Central zone, NH 615 had ginning outturn of 36.8% and quality check Suraj had 36.2% GOT. The donor parent Suvin had GOT of 31.6%. Along with high GOT, these entries also possessed better fibre quality. The introgression lines viz., CNH 20378, CNH 20387, CNH 204710 and CNH 204910 having high GOT were appreciated by the committee and it was felt that these would be valuable resources for improving GOT in cotton.

CICR Happenings

Visit of Dr. Kuldeep Singh, Director, ICAR-NBPGR, New Delhi at ICAR-CICR, Nagpur

Dr. Kuldeep Singh, Director, ICAR- NBPGR, New Delhi and Dr. Ashok Kumar, Head, Division of Germplasm Evaluation, ICAR-NBPGR visited ICAR-CICR, Nagpur On February 5, 2021. During the visit, Dr. Y. G. Prasad alongside Dr. Vinita Gotmare, Dr. Suman Bala Singh, Dr. Sunil Mahajan, Dr. H. B. Santosh and Dr. M. Saravanan guided the visitors to MTS cotton gene bank facility and apprised them of the storage space, storage condition and availability of germplasm, variability in germplasm, publications and demonstrations. Dr. Kuldeep Singh appreciated the work on field evaluation of 2000 base collections and 402 working collections of cotton and unique wild & native perennial species garden. Dr. Vinita Gotmare explained the colour cotton value chain business model established from Naturally coloured cotton variety Vaidehi-95 (MSH 53) developed through introgression utilizing wild species. Dr. Sunil Mahajan had elaborated cotton variability in the germplasm to the visitors. Dr. M. Saravanan explained regarding *Gossypium arboreum* (desi) cotton perennial species garden. After the field visit, Dr. Kuldeep Singh and Dr. Ashok Kumar interacted with the scientists from Crop Improvement Division, ICAR-CICR, Nagpur.





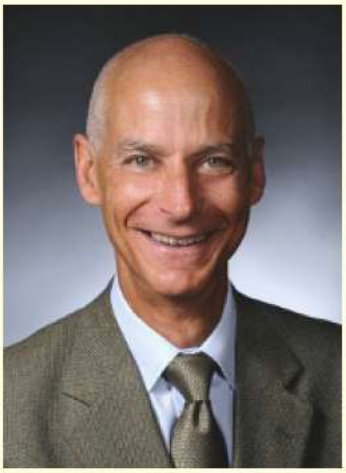

Interaction meeting of ICAR-CICR scientists and delegates from Bayer Crop Science Limited

An interaction meeting was held between ICAR-CICR scientists and delegates from Bayer Crop Science Ltd. for possible research collaborations based on public-private partnership mode at ICAR-CICR, Nagpur on February 20, 2021. Mr. Raghvendra Udupa (Field Crop Lead, India), Thane, Mr. Lokeshkumar Kadu (Lead-Agronomic Operations West), Pune and Dr. Tushar Ghule (Senior Executive Field Trial Operations West) represented Bayer Crop Science in the meeting. Dr. Y. G Prasad, Director, ICAR-CICR, Nagpur chaired the meeting. Dr. V. N. Waghmare, Head, Division of Crop Improvement, Dr. Nandini Gokte Narkhedkar, Head (I/c), Division of Crop Protection, Dr. Blaise Desouza, Head (I/c), Division of Crop Production and Dr. M. Venugopalan, Head, PME Cell participated in the meeting along with scientists from Division of Crop Protection. Several issues including on future research collaborations and scope, pesticides and bollworm complex management, sucking pests complex, emerging pests, technological intervention, recent innovations in technologies, innovation and knowledge transfer were discussed in detail. The meeting concluded with Dr. G. Balasubramani, Principal Scientist (Biotechnology), ICAR-CICR proposing the vote of thanks


Gleanings and Events outside CICR

ICAC - COTTON WEBINARS

International Cotton Advisory Committee organized 5th Edition of WCRC-7 Monthly Plenary Lecture Series as 'Cotton Webinars' on February 03, 2021. In this edition of Cotton Webinar, Prof. Jonathan F. Wendel, Distinguished Professor, Department of Ecology, Evolution, & Organismal Biology, Iowa State University delivered the lecture on 'Genes, jeans, and genomes; what we now know about the evolution of Gossypium and the origin of the polyploids' while another speaker Dr. Edward (Ed) M. Barnes, Senior Director, Agricultural and Environmental Research Division. Cotton Incorporated, Cary, North Carolina talked about 'Increasing automation & robotic applications in cotton'.



Prof. Jonathan F. Wendel

Dr. Edward (Ed) M. Barnes

Scientists' Corner

Publications, Awards, Recognitions and special assignments

Naik VCB, Subbireddy KB, Kranthi S, Nagrare VS, Kumbhare S, Gokte-Narkhedkar N, Waghmare VN (2021). Pink bollworm, *Pectinophora gossypiella* (Saunders) (Lepidoptera: Gelechiidae) survival on transgenic cotton in India. Egyptian Journal of Biological Pest Control, 31(1), 1-7.

Verma SK, Babita, Renu, Tuteja OP (2021). Genetic diversity analysis of CGMS lines A, B and restorer lines in tetraploid cotton (*Gossypium hirsutum* L.) using RAPD markers. Journal of Pharmacognosy and Phytochemistry, 10(1): 2549-2554.

Participation of scientists in Training/seminar/conference/symposia/etc.

- ✓ Dr. S. K. Sain, Principal Scientist (Plant Pathology), ICAR-CICR Regional Station, Sirsa participated in the joint Webinar on "Next Generation Sequencing for Deciphering Host-Pathogen Interactions" jointly organized by webinar IPS – Bionivid during February 4-5, 2021.
- ✓ Dr. Amarpreet Singh, Scientist (Sr. Scale), Agronomy, ICAR-CICR, Regional Station, Sirsa participated in the ONLINE meeting of Faculty of Agriculture and Forestry, Guru Nanak Dev University (GNDU), Amritsar, Punjab, India on February 5, 2021 as a Subject Expert in the Faculty of Agriculture & Forestry, Guru Nanak Dev University (GNDU), Amritsar, Punjab, India.
- ✓ Dr. Amarpreet Singh, Scientist (Sr. Scale), Agronomy, ICAR-CICR, Regional Station, Sirsa conducted Institute Joint Staff Council (IJSC) elections acting as Presiding Officer on February 5, 2021 at ICAR-CICR, Regional Station, Sirsa, Haryana.
- ✓ Dr. Y. G. Prasad, Director, ICAR-CICR, Nagpur has participated in Annual Action Plan Workshop of KVKs (Maharashtra & Goa) of ICAR- Agricultural Technology Application Research Institute Zone-VIII, Pune & KVK, Aurangabad – I (VNMKV-Parbhani) during February 9-10, 2021 and chaired Technical Session – II.

- ✓ Dr. Y. G. Prasad, Director, ICAR-CICR, Nagpur invited as panellist by Dr. N P Singh Director, ICAR-IIPR, Kanpur in Pulse WebCon2021 and presented on "Biotic stress management" on February 10, 2021.
- ✓ Dr. S. K. Verma, Principal Scientist (Plant Breeding), Dr. Rishi Kumar, Principal Scientist (Entomology) and Dr. S. K. Sain, Principal Scientist (Plant Pathology) from ICAR-CICR Regional Station, Sirsa attended a meeting of review committee for Common cotton zonal trials conducted to evaluate the GEAC approved BG-II hybrid on February 11, 2021 at Punjab Agricultural University, Ludhiana.
- ✓ Dr. Rishi Kumar, Principal Scientist (Entomology), ICAR-CICR Regional Station, Sirsa delivered lecture on “Spray technology in cotton crop and pest management” and “Safe use of insecticides” in a training program on spray technology during February 8-12, 2021, organized by KVK, Sirsa.
- ✓ Dr. Y. G. Prasad, Director, ICAR-CICR, Nagpur participated in a meeting of State Food Security Mission Executive Committee (SFSMEC) convened under the chairmanship of Hon. Secretary (Agri.) Government of Maharashtra on February 15, 2021.
- ✓ Dr. Amarpreet Singh, Scientist (Sr. Scale), Agronomy, ICAR-CICR, Regional Station, Sirsa participated in the meeting of District Level Executive Committee (DLEC) of Sub Mission on Agriculture Mechanization (SMSM) on February 18, 2021 in the Office of Deputy Commissioner (DC), Sirsa, Haryana.
- ✓ Dr. Y. G. Prasad, Director, ICAR-CICR, Nagpur participated in Webinar on “Agriculture Research on Knowledge Discovery” on February 23, 2021.
- ✓ Dr Babasaheb Fand, Scientist, Agricultural Entomology, Division of Crop Protection, ICAR-CICR, Nagpur delivered a lecture on "Cotton insect pest management with special reference to IPM strategies for pink bollworm" at Regional Centre for Integrated Pest Management, Civil Lines Nagpur (under DPQS, Min of Agriculture, GOI) on February 23, 2021.
- ✓ Dr. Y. G. Prasad, Director, ICAR-CICR, Nagpur along with Sr. Administrative Officer & I/c FAO participated in the Review meeting of Expenditure of RE 2020-21 chaired by DDG (CS), ICAR on February 25, 2021.
- ✓ Dr. Blaise Desouza, I/c Head, Division of Crop Production attended an ISWS Webinar-2 on “Weeds of National Importance” delivered by Dr. Sushil Kumar, ICAR-DWR, Jabalpur on February 25, 2021.
- ✓ Dr. V Santhy, Principal Scientist (Seed Technology), ICAR-CICR, Nagpur attended the Inter-departmental/ministerial meeting under the Chairmanship of Hon’ble Minister of Agriculture and Farmers Welfare meeting on “Convergence of various important activities of different ministries/ departments to popularize and include bio-fortified varieties in food matrix” on February 26, 2021.

Farmers' Corner

Cotton varieties and hybrids of CICR benefitting farmers of Haryana

Success story of cotton hybrid seed producer: Smt. Manju Rani, W/o Sh. Vikram, Begu village, Sirsa, Haryana is a successful seed producer of CICR-2 (Desi cotton hybrid) developed by ICAR-CICR Regional Station, Sirsa, Haryana. She was imparted training on hybrid seed production of cotton by the station. She emerged as a role model and successful entrepreneur amongst the women of her village in hybrid seed production of cotton. Mrs. Manju Rani studied up to middle school level (i.e. 8th standard) and is practicing agriculture on 5.5 acres land along with her family. During the 2020-21 cropping year, she successfully produced 275 kg seed of CICR-2 and earned a gross income of Rs. 2,67,100/- from an acre of land under the FLD program on hybrid seed production of ICAR-AICRP on Cotton (NFSM-CC). The seeds of both male and female parents of CICR-2 were provided for crossing of flowers, tagging and picking of crossed bolls, ginning and other activities related to seed production.

Smt. Manju Rani, a successful cotton hybrid seed producer

Seed distribution to Smt. Manju Rani by Dr. S. K. Verma, ICAR-CICR, Regional Station, Sirsa

Success story of CICR Bt-6 variety: Shri Rohtash is a cotton farmer from Khariya village, Sirsa, Haryana and cultivator of CICR Bt-6 (a Bt cotton variety) developed by ICAR-CICR Regional Station, Sirsa, Haryana. He regularly participated in the training programs on cotton cultivation conducted by ICAR-CICR Regional Station, Sirsa. Shri. Rohtash studied up to the senior secondary level (i.e. 12th standard) and is practicing agriculture on 3.0 acre land along with his family. During the 2020-21 cropping year, he successfully produced 2275 kg seed cotton yield per hectare under the FLD program on Integrated Crop Management (ICM) as part of ICAR-AICRP on Cotton (NFSM-CC). CICR Bt-6 variety came up well on his marginal land with low soil fertility and poor irrigation facilities, where Hybrid Bt cotton could not be successfully cultivated during the previous years. Shri. Rohtash sussessfully targeted suitable variety ie CICR Bt-6 that performed well in shallow soils in comparison to commercial hybrids.

Shri. Rohtash in his cotton field of CICR Bt-6 at Kharia village, Sirsa

Information provided by
Dr. Amarpreet Singh, *ICAR-CICR, Regional Station, Sirsa, Haryana*

Cotton Statistics and Trade

Revised estimates of cotton area, production, yield and overall balance sheet

Dr A R Reddy and Dr Isabella Agarwal

The Committee on Cotton Production and Consumption (COCPC), Ministry of Textiles, GOI in a meeting held on January 25, 2021 estimated the cotton production at 371 lakh bales for the year 2020-21 which is about seven lakh bales more than that of 2019-20. Similarly, the committee estimated total supply of cotton to be 502.95 lakh bales for the year 2020-21 which includes opening stock of 120.95 lakh bales and 11 lakh bales of import. With an estimated consumption of 330 lakh bales and export of 75 lakh bales, total demand is being estimated to be at 405 lakh bales making a closing stock of about 98 lakh bales by the end of 2020-21.

Revised estimates of cotton area, production and yield

State	2019-20 (P)*			2020-21 (P)*		
	Area	Production	Yield	Area	Production	Yield
Punjab	3.92	9.50	411.99	5.01	12.00	407.19
Haryana	7.23	26.50	623.10	7.37	25.00	576.66
Rajasthan	7.61	29.00	647.83	6.72	27.00	683.04
NORTHZONE	**18.76**	**65.00**	**589.02**	**19.10**	**64.00**	**569.63**
Gujarat	26.53	89.00	570.30	22.73	90.50	676.86
Maharashtra	44.31	87.00	333.78	41.84	86.00	349.43
Madhya Pradesh	6.50	20.00	523.08	6.44	21.00	554.35
CENTRAL ZONE	**77.34**	**196.00**	**430.82**	**71.01**	**197.50**	**472.82**
Telangana	21.27	54.00	431.59	23.73	60.00	429.84
Andhra Pradesh	6.54	18.00	467.89	5.24	18.00	583.97
Karnataka	6.37	20.00	533.75	7.21	20.00	471.57
Tamil Nadu	1.70	6.00	600.00	1.55	5.00	548.39
SOUTHZONE	**35.88**	**98.00**	**464.33**	**37.73**	**103.00**	**464.09**
Orissa	1.70	4.00	400.00	1.68	4.50	455.36
Others	0.05	2.00	--	0.05	2.00	--
TOTAL	**133.73**	**365.00**	**463.99**	**129.57**	**371.00**	**486.76**

Area in Lakh hectares, Production in lakh bales of 170 kg each, Yield in kilogram/hectare; ****P – Provisional***

Revised Cotton Balance Sheet (In lakh bales of 170 kg. each); *P - Provisional

Particulars	2019-2020 (P)*	2020-2021 (P)*
SUPPLY		
Opening Stock	56.52	120.95
Crop	365.00	371.00
Import	15.50	11.00
TOTAL SUPPLY	**437.02**	**502.95**
DEMAND		
Mill Consumption	233.70	286.00
S.S.I Consumption	20.33	26.00
Non-textile Consumption	15.00	18.00
Export	47.04	75.00
TOTAL DEMAND	**316.07**	**405.00**
Closing Stock	**120.95**	**97.95**

Cotton in Media

केंद्रीय कापूस संशोधन संस्थेचे संचालक डॉ.प्रसाद यांचे प्रतिपादन

आदिवासी शेतकऱ्यांना उन्हाळी मुग लागवड फायदेशीर

देशोन्नती वृत्तसंकलन...

गडचिरोली ● आदिवासी शेतकऱ्यांना उन्हाळी मुग लागवड फायदेशिर ठरेल असे प्रतिपादन नागपूर येथील केंद्रीय कापूस संशोधन संस्थेचे संचालक डॉ.वाय.जी. प्रसाद यांनी केले.

केंद्रीय कापूस संशोधन संस्था, नागपूर, कृषि विज्ञान केंद्र गडचिरोली, आत्मा यांच्या संयुक्त विद्यमाने आज १० फेब्रुवारी रोजी कृषी विज्ञान केंद्रात शेतकरी प्रशिक्षण व कार्यशाळेचे आयोजन करण्यात आले होते. यावेळी मार्गदर्शक म्हणुन ते बोलत होते.

यावेळी प्रमुख अतिथी म्हणुन कृषी विज्ञान केंद्राचे कार्यक्रम समन्वयक संदीप कऱ्हाळे, केंद्रीय कापूस संशोधन संस्थेचे डॉ. चिन्ना नायक, वरीष्ठ शास्त्रज्ञ डॉ. चंद्रशेखर एन., डॉ. दिपक नगराळे, उपविभागीय कृषी अधिकारी बाळासाहेब कदम, विषय विशेषज्ञ डॉ. व्ही.एस. कदम, विषय विशेषज्ञ डी.व्ही. ताथोड, विषय विशेषज्ञ एन.पी. बुध्देवार, विषय विशेषज्ञ पी.ए. बोथीकर आदी मान्यवर उपस्थित होते.

यावेळी मार्गदर्शन करतांना संचालक डॉ. प्रसाद यांनी गडचिरोली जिल्ह्यात उन्हाळी मुग पिकाचे क्षेत्र वाढविणे तसेच शेतकऱ्यांचा आर्थिक स्तर उंचावण्याच्या दृष्टीने मुग पिकाकडे वळावे असे आवाहन केले. उन्हाळी मुग पिकाचे उत्पादन घेतांना पिक लागवड करण्याची पध्दती, पिकांची घ्यावयाची काळजी याविषयी मार्गदर्शन केले. त्याचप्रमाणे आरोग्याच्या दृष्टीने मुगाचे महत्व उपस्थित शेतकऱ्यांना पटवून दिले. मानवी जिवनातील मुगाचे पोषण मुल्य वाढविणे आणि जिवनासत्वाची कमतरता भरून काढण्याकरीता महत्वाचे योगदान असल्याचे त्यांनी सांगितले.

तरूणांकरीता दाळवर्गीय पिकांची साठवणुक करण्याकरीता तंत्रज्ञानयुक्त कौशल्य प्रशिक्षण उपलब्ध करून देणार असल्याचे डॉ. प्रसाद यांनी सांगितले.

डॉ. चिन्ना नायक यांनी धान पिकांसोबतच कडधान्य पिकांचे उत्पादन घेवून शाश्वत विकास करावा असे प्रतिपादन केले. गडचिरोली जिल्ह्यात कडधान्य पिकास उत्तम हवामान असल्यामुळे कडधान्य पिके घेणे सहज शक्य आहे. शेतकऱ्यांच्या उत्पनात वाढ होण्याच्या दृष्टीने भात शेती सोबतच कडधान्य पिकाची लागवड करण्याचे आवाहन डॉ. चिन्ना नायक यांनी केले.

यावेळी उपस्थित मान्यवरांनीही मार्गदर्शन केले.कार्यशाळेदरम्यान उपस्थित आदिवासी लाभार्थी शेतकऱ्यांना कृषि निविष्ठा स्वरूपात मुग बियाणे देण्यात आले. या प्रशिक्षण कार्यक्रमात १५० हून अधिक शेतकरी उपस्थित होते.

कार्यक्रमाचे संचालन विनोद रहांगडाले यांनी तर ज्ञानेश्वर ताथोड उपस्थितांचे आभार मानले. सदर कार्यक्रमाला कृषि विज्ञान केंद्र, गडचिरोली येथील डॉ.. व्ही.एस. कदम, मोहीतकुमार गणविर, हितेश राठोड, गजेंद्र मानकर, शशिकांत सलामे, अंकुश ठाकरे, प्रविन नामुर्ते तसेच आत्मा कार्यालयाचे कर्मचारी आणि शेतकरी उपस्थित होते.

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लोकमत

उन्हाळी मूग शेतकऱ्यांसाठी फायदेशीर

संचालक वाय.जी. प्रसाद यांचे प्रतिपादन : कृषी विज्ञान केंद्रात प्रशिक्षण व कार्यशाळा

लोकमत न्यूज नेटवर्क

गडचिरोली : जिल्ह्यात उन्हाळी मूग पिकाचे क्षेत्र वाढत आहे. आर्थिक स्तर उंचावण्यासाठी मूग लागवड गरजेचे आहे. त्यामुळे शेतकऱ्यांनी मोठ्या प्रमाणावर मूग पिकाची लागवड करावी, असे प्रतिपादन केंद्रीय कापूस संशोधन संस्था नागपूरचे डॉ. वाय. जी. प्रसाद यांनी केले. कृषी विज्ञान केंद्र, आत्मा, कृषी विभाग यांच्या संयुक्त विद्यमाने शेतकरी प्रशिक्षण व कार्यशाळा १० फेब्रुवारीला कृषी विज्ञान केंद्रात पार पडली. याप्रसंगी ते बोलत होते.

वितरित केलेल्या बियाण्यांसह शेतकरी सोबत डॉ. वाय. जी. प्रसाद, डॉ. संदीप कऱ्हाळे व अन्य.

कार्यशाळेला कृषी विज्ञान केंद्राचे कार्यक्रम समन्वयक तथा आत्माचे प्रकल्प संचालक डॉ. संदीप कऱ्हाळे, आदिवासी विकास कार्यक्रम प्रमुख डॉ. चिन्ना नायक, वरिष्ठ शास्त्रज्ञ डॉ. चंद्रशेखर एम. , डॉ. दीपक नगराळे, विभागीय कृषी अधिकारी बाळासाहेब कदम, विषय विशेषज्ञ (पशुसंवर्धन व दुग्धशास्त्र) डॉ. व्ही. एस. कदम, विषय विशेषज्ञ (कृषी अभियांत्रिकी) ज्ञानेश्वर ताथोड, विषय विशेषज्ञ (कृषी हवामानशास्त्र) एन. पी. बुद्धेवार, विषय विशेषज्ञ (पीक संरक्षण) पी. ए. बोथीकर उपस्थित होते.

डॉ. चिन्ना नायक यांनी धान पिकासह कडधान्य पिकाचे उत्पादन घेऊन शाश्वत विकास करावा, जिल्ह्यात उत्तम हवामान असल्याने कडधान्य पिके सहज शक्य आहेत. त्यामुळे शेतकऱ्यांनी कडधान्य पिकाची लागवड करावे, असे आवाहन केले. डॉ. दीपक नगराळे यांनी कापसावरील रोग, कीडी, बोंडअळी, बोंडसड आदींचे एकात्मिक व्यवस्थापन करून नुकसान टाळावे, असे आवाहन केले. संदीप कऱ्हाळे यांनी प्रास्ताविकातून आरोग्याच्या दृष्टीने मुगाची आवश्यकता सांगितली. डॉ. रवींद्र वाघमारे यांनी मूग लागवडीचे फायदे सांगत मूग पिकामुळे नत्रस्थिरीकर करून ठेवण्यास मदत होते. त्यामुळे जमिनीची धूप थांबते व जमिनीचे आरोग्य चांगले राहते, असे प्रतिपादन केले. एन. पी. बुद्धेवार यांनी मूग पिकाची लागवड, तंत्रज्ञान, कीडरोग तसेच पाणी व्यवस्थापन, हवामान आदी बाबींची माहिती दिली.

कार्यक्रमाचे संचालन विनोद रहांगडाले यांनी केले. यशस्वीतेसाठी हवामान निरीक्षक मोहित गणवीर, हितेश राठोड, गजेंद्र मानकर, शशिकांत सलामे, अंकुश ठाकरे, प्रवीण नामूर्ते तसेच आत्मा कार्यालयातील कर्मचाऱ्यांनी सहकार्य केले.

आदिवासी शेतकऱ्यांना मूग बियाणे वाटप

कृषी विज्ञान केंद्रात पार पडलेल्या शेतकरी प्रशिक्षण कार्यशाळेत आदिवासी लाभार्थी शेतकऱ्यांना कृषी निविष्ठाच्या स्वरुपात मूग बियाण्यांचे वाटप करण्यात आले. याचा लाभ अनेकांना झाला. प्रशिक्षणात जवळपास १५० शेतकरी उपस्थित होते. येथे मिळालेल्या माहितीबाबत शेतकऱ्यांनी समाधान व्यक्त केले.

Hello Gadchiroli
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lokmat Times

CICR gives power weeder to Godhani GP

LOKMAT NEWS NETWORK
NAGPUR, FEB 13

Indian Council of Agricultural Research - Central Cotton Research Institute (CICR), Nagpur recently organised Skill Development training at Godhani in Umred tehsil under the Centrally sponsored scheme Scheduled Caste Sub-Plan Programme.

On the occasion, Dr Y. G. Prasad, Director, ICAR-CICR Nagpur, Dr. V. N. Waghmare, Head, Crop Improvement Division, Dr. S. M. Wasnik, Principal Scientist (Agricultural Extension) & Nodal Officer (SCSP), other SCSP team members Drs. Sunil Mahajan, (Principal Scientist, Seed Technology), Shailesh Gawande (Scientist, Plant Pathology), etc. attended the programme.

At the outset, in his introductory remarks Dr. Siddharth Wasnik briefed about various crop demonstrations, animal health, horticultural and other activities undertaken under Scheduled Caste Sub-Plan (SCSP) for benefits of scheduled castes farmers.

He also outlined the various activities of CICR for farming communities such as Cotton FLDs, e-Kapas voice messages system, Mera Gaon Mera Gaurav, IRM dissemination for cotton pink bollworm, KVK, ARYA, Cotton App, etc.

Dr. Y. G. Prasad in his address appreciated the efforts of CICR SCSP team for dissemination of cotton and other agril technologies to the farmers timely and providing the needed support through various inputs to marginalized sections of society for increasing income. He appealed the farmers to avail CICR technologies and control timely pests and diseases in cotton and other crops.

Dr. V. N. Waghmare emphasized on increasing the yield of agriculture crops by adopting different crops enterprises instead of taking a single crop repeatedly.

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तरुण भारत

Apla Nagpur | 2021-02-07 | Page- 3
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सरकारी योजना समजून आर्थिक उन्नती करा

डॉ. सिद्धार्थ वासनिक यांचे आवाहन

● उमरेड, ६ फेब्रुवारी

भारत सरकारच्या वतीने अनेक लोकोपयोगी योजना राबविल्या जात आहेत. त्या योजना समजून घेत आर्थिक उन्नती करा असे आवाहन केंद्रीय कापूस संशोधन संस्थेचे प्रमुख शास्त्रज्ञ डॉ. सिद्धार्थ वासनिक यांनी केले.

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रविवार, २८ फेब्रुवारी २०२१

सकाळ अॅग्रोवन

मर्यादित संशोधनामुळे रंगीत कापसाचा बेरंग

तांत्रिक कारणांमुळे दिवास्वप्न ठरण्याची शक्यता

तांत्रिक अडचणी

राज्यात यंदा कमी कालावधीचे कापूस वाण

पाऊस, बोंड अळीने होणाऱ्या नुकसानीमुळे १५० दिवसांत येणाऱ्या वाणांवर कंपन्यांकडून संशोधन

विनोद इंगोले : अॅग्रोवन वृत्तसेवा

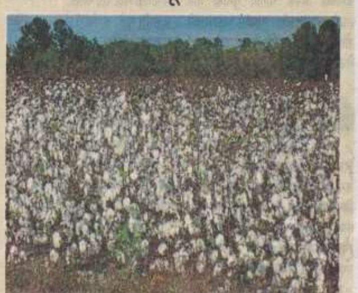
नागपूर : वातावरणातील बदल, पावसाचा लांबलेला कालावधी त्याच्या परिणामी कापूस पिकात कीड-रोगांचा वाढता प्रादुर्भाव यामुळे येत्या हंगामात राज्यात कमी कालावधीत परिपक्व होणारे कापूस वाण देण्यासाठी कापूस उत्पादक कंपन्यांकडून पुढाकार घेण्यात आला आहे. येत्या हंगामात अशाप्रकारचे वाण उपलब्ध होण्याची शक्यता वर्तविली जात आहे. केंद्रीय कापूस संशोधन संस्थेच्या तज्ज्ञांनी देखील या संदर्भाने दुजोरा दिला असून, यामुळे बोंड अळी नियंत्रणाला हातभार लागण्यास मदत होईल, अशी अपेक्षा व्यक्त होत आहे.

महाराष्ट्रात कापसाखालील सर्वाधिक ४२ लाख हेक्टर क्षेत्र आहे. देशाच्या एकूण लागवडीच्या तुलनेत हे क्षेत्र सर्वाधिक असल्याने बियाणे कंपन्यांसाठी महाराष्ट्र हो मोठी बाजारपेठ ठरली आहे.

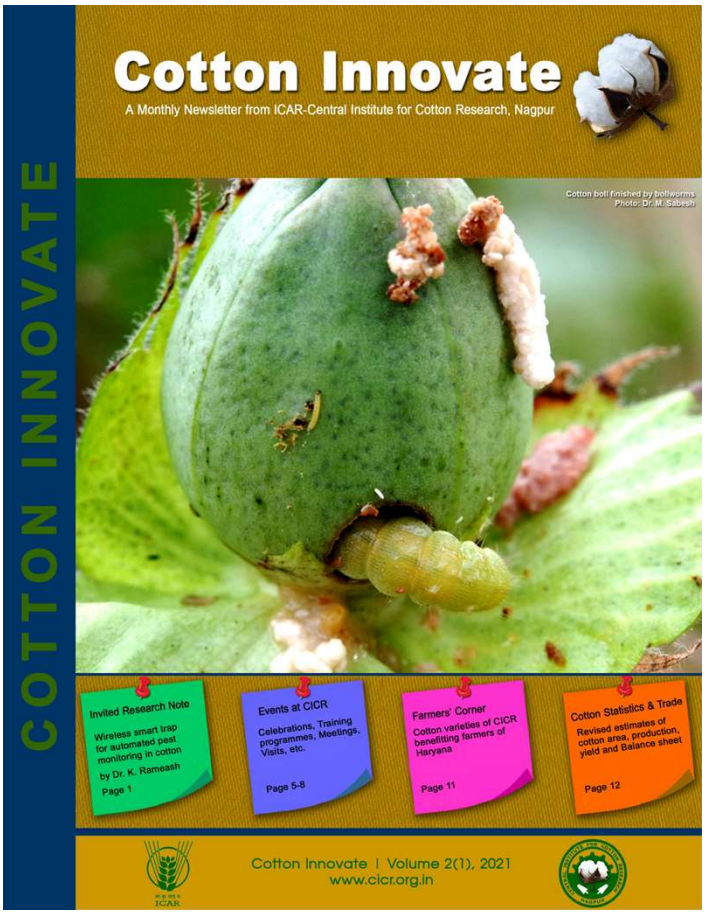
पान ४ वर »

समस्यांचे होईल समाधान

हंगामात बोंड अळी, अतिवृष्टी, पावसामुळे नुकसान या समस्येचे समाधान कमी कालावधीचे वाण देण्याच्या माध्यमातून शोधण्यात येणार आहे. त्याकरिता येत्या हंगामात १५० किंवा त्यापेक्षा कमी दिवसांत परिपक्व होणारे वाण देण्यावर बहुतांश कंपन्यांचा भर राहणार आहे. सध्या कंपन्यांकडून १८० व त्यापेक्षा अधिक दिवसांत परिपक्व होणाऱ्या कापूस बियाण्यांचा पुरवठा होतो. शेतकऱ्यांकडून नंतर कापसाचा खोडवा घेतला जातो. त्यामुळे बोंड अळीची खाद्य साखळी विस्कळीत होत नाही. परिणामी, कापसात बोंड अळींचा धोका वाढला आहे.



नागपूर : केंद्रीय कापूस संशोधन संस्थेने विकसित केलेले कापूस वाण.



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