

## ICAR Certified Technologies of CICR

No.	Technology	ICAR ID	Lead developer	Year
1	Attractant Formulation for Whiteflies, Aphids and Thrips	ICAR-CS-CICR-Product-2025-023	Dr. K. Velmourougane	2025
2	Rapid, Reliable and Robust methodology for field level yield loss assessment in cotton due to pink bollworm and boll rot	ICAR-CS-CICR-Process-2025-022	Dr. Babasaheb B. Fand	2025
3	Antagonistic and growth promoting potential of endophytic <i>Diaporthe melonis</i> isolate CFS-5 in cotton and non-host crops	ICAR-CS-CICR-Technology-2025-043	Dr. Neelkanth S. Hiremani	2025
4	Nutrient Expert®, a decision support system for hybrid cotton	ICAR-NRM-CICR-Product-2024-221	Dr. A. Manikandan	2024
5	Novel cotton based Integrated Farming Systems (IFS) model for rainfed dry sub-humid ecosystem	ICAR-NRM-CICR-Technology-2024-222	Dr. Ramkrushna G. I	2024
6	Gap-filling technology for better cotton crop establishment in inherent soil moisture	ICAR-NRM-CICR-Technology-2024-223	Dr. Sathish Kumar Sain	2024
7	New Protocol for evaluation of transgenic cotton genotypes interogressed with protein against whitefly, <i>Bemisia tabaci</i> (Gennadius) in cotton	ICAR-CS-CICR-Technology-2023-023	Dr Rishi Kumar	2023
8	Technology for Management of Whitefly- <i>Bemisia tabaci</i> (Gennadius) and Cotton Leaf Curl Disease (CLCuD) in North Cotton Growing Zone of India	ICAR-CS-CICR-Technology-2023-024	Dr Rishi Kumar	2023
9	Oil-based entomopathogenic fungal bio-insecticide formulation ( <i>Metarhizium anisopliae</i> CICR-RS- Ma-1299 @ $1 \times 10^8$ cfu/ml): CICR Green Guard-1 (NAIMCC-F-04455)	ICAR-CS-CICR-Technology-2023-027	Dr. Sathish Kumar Sain	2023
10	Oil-based entomopathogenic fungal bio-insecticide formulation ( <i>Cordyceps javanica</i> –CICR-RSS-Cj-0102 @ $10^8$ cfu/ml): CICR Cotpest Guard-1 (ITCC-10499.17)	ICAR-CS-CICR-Technology-2023-026	Dr. Sathish Kumar Sain	2023

11	Oil-based entomopathogenic fungal bio-insecticide formulation ( <i>Beauveria bassiana</i> CICR RS-Bb-4511 @10 <sup>8</sup> cfu/ml): CICR Cotpest Guard-2 (NAIMCC-F-04402)	ICAR-CS-CICR-Technology-2023-025	Dr. Sathish Kumar Sain	2023
12	Development and validation of a “Degree Day-based model for predicting pink bollworm phenology across geographical locations of subtropics and semi-arid tropics of India	ICAR-CS-CICR-Method-2023-021	Dr. Babasaheb B. Fand	2023
13	Innovative on-plant bioassay method for selection of superior genotype/cultivar /event against pink bollworm, <i>Pectinophora gossypiella</i> (Saunders) in cotton under protected screen house condition	ICAR-CS-CICR-Technology-2023-028	Dr. Vivek Shah	2023
14	Wireless Smart Trap for Automated Pest Monitoring in Cotton	ICAR-AE-CICR-Technology-2023-061	Dr. K. Rameash	2023
15	Development of loop mediated isothermal amplification (LAMP): A new tool for rapid diagnosis of cotton leaf curl viral disease	ICAR-CS-CICR-Method-2023-022	Dr. Shailesh Gawande	2023

## Crop Production Technologies

No.	Technology	Category	Lead Developer	Centre
1	High Density Planting System in cotton to enhance cotton productivity	Technology	Dr. M.V. Venugopalan	NGP
2	Allelopathic intercrops as an integrated weed management strategy in rainfed cotton	Technology	Dr. D. Blaise	NGP
3	Alleviation of soil compaction in cotton cultivation	Technology	Dr. D. Blaise	
4	Drip + Polymulch technology for enhancing yield of ELS cotton	Technology	Dr. P. Nalayini	CBE
5	Integrated nitrogen and weed management under elevated CO <sub>2</sub>	Technology	Dr. P. Nalayini	CBE
6	IOT and sensor-based irrigation to reduce the water footprint of cotton	Technology	Dr. P. Nalayini	CBE
7	Stale seed bed technique to exhaust weed seed bank	Technology	Dr. P. Nalayini	CBE
8	Remunerative, Conservation Agriculture based- Cotton Cropping System	Technology	Dr. R. Raja	CBE
9	Closer planting and canopy management for ELS cotton yield enhancement	Technology	Dr. R. Raja	CBE
10	Drone based chemical topping agent application for cotton canopy management	Technology	Dr. R. Raja	CBE
11	Water logging Management in cotton	Technology	Dr. K. Sankaranarayanan	CBE
12	Paper tube Nursery technique – Cotton transplanting	Technology	Dr. K. Sankaranarayanan	CBE
13	Nutrient Expert®, a Decision Support System for Hybrid Cotton	Technology	Dr. A. Manikandan	NGP
14	Cotton + grain legume intercropping systems	Technology	Dr. A. Manikandan	NGP
15	Chemical defoliant for cotton	Technology	Dr. JH. Meshram	NGP
16	Epigenetic regulating chemicals mediated drought tolerance in cotton	Technology	Dr. J. Annie Sheeba	CBE
17	A new metabolic pathway “Alarm photosynthesis” in cotton	Pathway	Dr. Pooja Verma	NGP
18	Method optimization and standardization for phytohormone profiling in cotton	Method	Dr. Pooja Verma	NGP

19	<b>Microbially enriched cotton stalk compost as an alternative to farmyard manure in cotton production</b>	Technology	Dr. K. Velmourougane	NGP
20	<b>Microbial consortia to alleviate abiotic stress in cotton</b>	Technology	Dr. K. Velmourougane	NGP
21	<b>Pedogenic carbonate solubilizing bacterial formulation to alleviate soil calcareousness</b>	Technology	Dr. K. Velmourougane	NGP
22	<b>E kapas/e communication to provide advisories to cotton farmers</b>	Method	Dr. SM. Wasnik	NGP
23	<b>Pluralistic Extension Model for Fostering the Production of ELS cotton in India</b>	Model	Dr. J. Usharani	CBE
24	<b>Synergistic Extension Model to bridge the yield and knowledge gaps in cotton</b>	Model	Dr. J. Usharani	CBE
25	<b>Exclusive scale of finance for HDPS Cotton cultivation</b>	Policy	Dr. Jayakumara Varadan	NGP

## Crop Protection Technologies

No.	Technology	Category	Lead Developer	Centre
1	AI-based Smart pheromone trap for the real-time monitoring of pink bollworm in cotton	Technology	Dr. K. Rameash	NGP
2	Development and validation of a "Degree Day based model for predicting pink bollworm phenology	Model	Dr. B.B. Fand	NGP
3	IPM strategy for Pink bollworm management in cotton	Technology	Dr. V.S. Nagrare	NGP
4	CICR Cotton App	Product	Dr V. S. Nagrare	NGP
5	CICR IRM App	Product	Dr V. S. Nagrare	NGP
6	Phenology model for cotton aphid: Potential risk of establishment and survival of cotton aphid Aphis gossypii in India based on simulation of temperature-dependent phenology model	Model	Dr V. S. Nagrare	NGP
7	Improved bioassay method for evaluation of oviposition deterrents against Old World Bollworms	Method	Dr. Rishi Kumar	SIR
8	Bacterial-based volatile attractant for whiteflies	Product	Dr. K. Velmourougane	NGP
9	Bacterial-based volatile attractant for jassids	Product	Dr. K. Velmourougane	NGP
10	Bacterial-based volatile attractant for aphids	Product	Dr. K. Velmourougane	NGP
11	Bacterial-based volatile attractant for thrips	Product	Dr. K. Velmourougane	NGP
12	Bacterial-based volatile attractant for beneficial insects	Product	Dr. K. Velmourougane	NGP
13	Use of yellow sticky traps aligned with intercultural operations for monitoring and management of whitefly, infesting cotton	Technology	Dr. Rishi Kumar	SIR
14	Whitefly Management Strategies in Cotton	Technology	Dr. Rishi Kumar	SIR
15	Mealybugs management strategies in cotton	Technology	Dr. Rishi Kumar	SIR
16	Management of Off-season survival of Pink Bollworm in cotton	Technology	Dr. Rishi Kumar	SIR
17	Conceptualization, In-Planta Field Evaluation, Validation and Compliance of 'Refugia in Bag' to maintain the	Method	Dr. Rishi Kumar	SIR

	<b>susceptibility of Bt cotton against bollworm complex</b>			
<b>18</b>	<b>Development of novel screening method to evaluate germplasm lines of <i>G. barbadense</i> against TSV</b>	Method	Dr. P. Valarmathi	CBE
<b>19</b>	<b>New polyhouse bioassay method for large scale evaluation of entomopathogenic fungi against whitefly</b>	Method	Dr. S.K. Sain	SIR
<b>20</b>	<b>Combined application of effective <i>Trichoderma</i>, <i>Pseudomonas</i> and <i>arbuscular mycorrhiza</i> spp. reduced soil-borne diseases and boosted growth in cotton</b>	Technology	Dr. S.K. Sain	SIR
<b>21</b>	<b>Cotton leaf curl disease (CLCuD) prediction modeling in upland cotton under different ecological conditions using machine learning tools.</b>	Model	Dr. S.K. Sain	SIR
<b>22</b>	<b>Antagonistic and growth promoting potential of endophytic <i>Diaporthe melonis</i> isolate CFS-5 in cotton and non-host crops</b>	Technology	Dr. Neelkanth S. Hiremani	NGP