

Inclusive Approach

for Strengthening of Agri-business Start-ups Ecosystem

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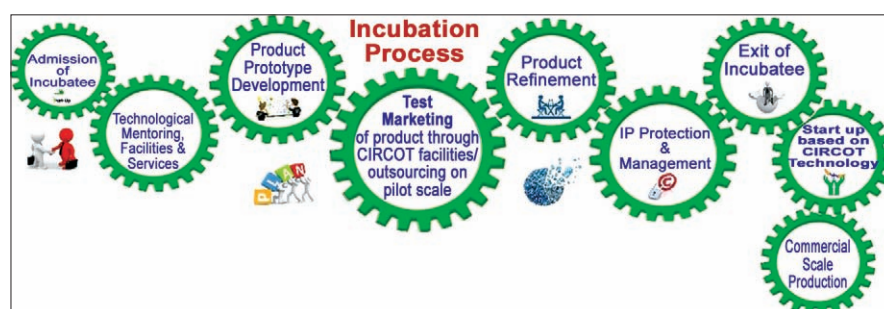
ICAR-Central Institute for Research on Cotton Technology, Mumbai, Maharashtra 400 019

ICAR-Central Institute for Research on Cotton Technology (CIRCOT) has served the cotton community since its inception in 1924 and has evolved over the years to address the changing needs of its stakeholders. The institute is committed to carry basic and strategic research on processing of cotton and its agro-residues leading to development of value added products as well as quality assessment of fibre. It is the first textile institute in India to become a Referral Laboratory for Cotton Textiles. Calibration cotton, a standard reference material is hallmark of the institute's R&D with 300 corporate users. It is preferred over USDA Calibration Cotton which is an import substitute. Further, institute is working on value addition to cotton biomass through particle board preparation, compost making, nanocellulose production, cottonseed oil etc. to provide additional income to cotton growers.

Key words: Agri-business, Cotton community, Start-up

THE CIRCOT has diversified its ambit to cover other natural fibers (Banana, Coconut) and started pioneering work in nanotechnology and its application in textile finishing, natural fibre based composites and environmentally benign technology for processing cotton textiles. The technology transfer activity was revitalized by inculcation of a business orientation through the establishment of a Business Planning and Development Unit to commercialize the technologies developed at the institute. The institute has good number of IP enabled technologies and patent related products and processes. ICAR-CIRCOT is providing the facilities regarding technology mentoring, IP management, product development activities, test marketing, canvassing of technologies, funding for the incubatee in focused and consistent manner.

National Agricultural Research System (NARS) through the World Bank aided National Agricultural Innovation Project (NAIP) has taken an initiative in 2008 across the



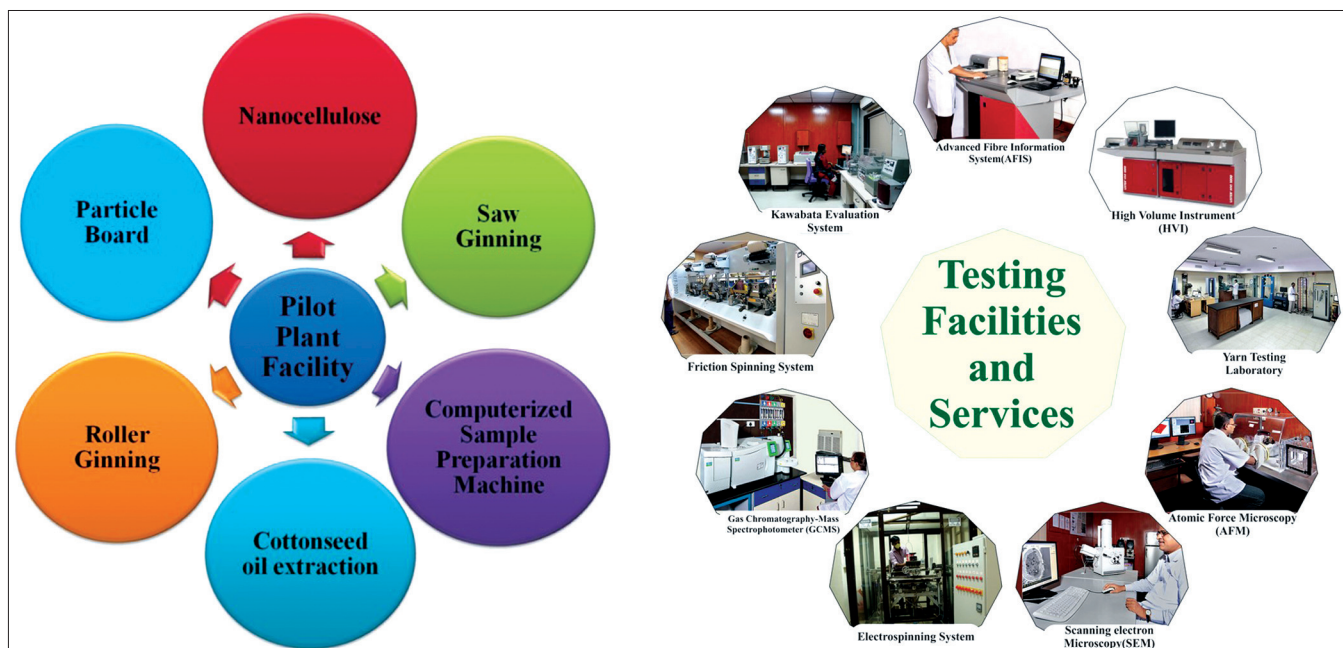
Different steps of incubation process.

country by establishing the Zonal Technology Management (ZTM) and Business Planning & Development (BPD) units. Taking into consideration its past credence as a unique technology institute within the ICAR system with rich experience in technology commercialization, technology transfer and Intellectual Property Rights management the first ZTM-BPD unit was launched at ICAR-CIRCOT.

Agri-Business incubation

ABI centre was established in 2016 under 12th plan scheme of National Agriculture Innovation Fund (NAIF) for the benefit of prospective

entrepreneurs who wish to start their business using institute technologies on post-harvest processing of cotton and value addition to its by-products. This centre envisages facilitating incubation of new startups/entrepreneurs and enterprises for innovative technologies by providing need based physical, technical, business and networking support, facilities and services to test and validate their venture before successful establishment of enterprises. The centre is also responsible for conducting techno-entrepreneurial activities in cotton value chain for building prospective clientele and facilitate skill development in selected stakeholders related to cotton sector.



Pilot plant facilities and testing facilities available at ICAR-CIRCOT, Mumbai.

Taking into consideration the broad spectrum of Innovation, Incubation, Start-ups, Stand-ups, Make in India, etc. major thrust is being given on how to make our country “Greener” and “Cleaner”.

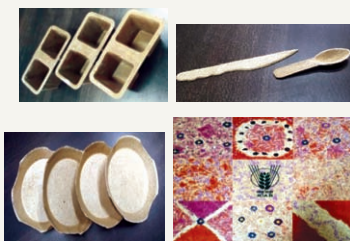
The ABI centre focuses on mentoring (incubation) entrepreneurs to bring the dream of “Waste to Wealth” into realization with twin goals of “Doubling farmer’s income” and “Propelling a Cleaner and Greener India. The pictorial representation of various steps of incubation process are depicted in the figure above.

Agribusiness Incubation consists of recognizing potential incubatees, provide them with infrastructure facilities, technological consultancy, fund facilitation and product development for commercialization. The innovative technology in contemporary world needs to be protected to evade the exploitation of innovations developed through application of intellect and consistent research efforts. Thus, appropriate registration of Intellectual Property enables protection of R&D efforts.

ICAR-CIRCOT has a strong industry interface, has developed and commercialized high impact and innovative technologies pertinent to growth of the industry, provides high end testing facilities to industrial clients as well as promotes entrepreneurship among start-ups. Having an established reputation

Table 1. Detailed list of incubatees along with their technologies and product

S.No.	Incubatee Name and Technology	Product
1.	Degossypolized cottonseed cake for fish, poultry and pigs M/s Sana Agro Industries Limited, Raichur, Karnataka	
2.	Antimicrobial cotton bedsheets for hospitals M/s Green Globe Mumbai, New Delhi	
3.	Nanocellulose application in textile yarn spinning for making towels M/s The Kadri Mills Limited, Coimbatore	
4.	Cotton reinforced rubber baton for protection forces M/s Life Long Combines, Aluva, Kerala	
5.	Gin cotton lint opener M/s Precision Tooling Engineers, Nagpur	
6.	Cotton blended T-shirt (Menswear & Womenswear) M/s Greyy, Navi Mumbai	
7.	Development of thermal and bath blankets using cotton and biodegradable polyester M/s Bloom Textile, Sivakasi, Tamil Nadu	

8. Preparation of value added products using banana fibre M/s FNV Pack, Pune. Technology to produce eco-friendly and biodegradable dishware from a blend of banana fibres extracted from the pseudostem and sugarcane bagasse.
 
9. Preparation of value added products using naturally coloured cotton M/s Kotak Commodities, Mumbai. These eco-friendly cottons are unique as they grow in colours and do not need to be dyed. Naturally coloured cotton has inherently softer feel, high UV protection factor, good colour stability and fastness properties.
 
10. Production of biodegradable kitchen utilities directly from the whole banana pseudostem M/s Paras Gold Industries, Gujarat. Technology involves the use of whole banana pseudostem without any wastage and hence, the productivity of the biomolded item is very high. No external binders are added for the production of molded products. This eco-friendly product will be a better alternative for plastic based products.
 
11. Ecofriendly, efficient and rapid burning crematorium using cotton stalks/biomass briquettes M/s. Vidarbha Sales, Nagpur. Developed briquette technology which is ecofriendly, efficient and rapid burning green crematorium as an alternative to traditional fire wood based cremation. Briquettes made from agricultural biomass like cotton stalk, sugarcane bagasse, groundnut and castor seed shells, rice husk and paddy straw etc. can be used as alternative fire wood in cremation.
 
12. Sustainable rubber pots with natural fibre reinforcement M/s. Rubber Engineers Pvt. Ltd. ICAR-CIRCOT has provided the intervention by developing innovative agro-residue reinforced natural rubberized composite with higher strength and optimal flexibility.
 
13. Sleeping bags M/s. Shree Agro Invent Tech Pvt. Ltd. Inner layer is prepared using nano-based anti-microbial finish for enhanced comfort. Outer layer is prepared using synthetic fabric having mosquito repellent property. These nanofinished high performance sleeping bags provide improved protection and comfort to user and enhances sleep experience.
 
14. Innovative fibre reinforced paper carry bags M/s. Udayprasth Industries Pvt. Ltd. This bag was prepared as an alternative to plastic bags and it can be used for day to day packaging uses. It is biodegradable, cost effective and eco-friendly due to use of recycled material. Having excellent load bearing capacity with durability. Prepared using GSM 127 paper with special properties like Ant-repellent and Insect repellent and load bearing capacity of up to 7 kg.
 

Bloom Textile, Sivakasi, Tamil Nadu, M/s. FNV Pack, Pune, M/s. Kotak Commodities, Mumbai, M/s. Paras Gold Industries, Gujarat to name a few (Table 1). Presently the ABI centre is promoting entrepreneurs in fields of antimicrobial textile finishing, degossypolised cottonseed meal for poultry feed, cotton rubber composite batons for police force, various application of nanocellulose in paper and composites.

Facilities available for incubation

The institute is instrumental in the establishment of well-equipped pilot plant facilities for nanocellulose, particle board, saw ginning, roller ginning, computerized sample preparation machine and cottonseed oil extraction. In addition, there are modernized testing facilities are also available for the assessment of developed technology.

Conclusion

ICAR-CIRCOT ABI centre facilitates incubation of new enterprises based on innovative technologies by providing technical mentorship, physical space, networking support and services. The institute is putting its constant efforts to provide an inclusive approach to nurture the incubatee/startups a full proof, sustainable mode of development for a successful business enterprise. There has been an increased awareness and consumer preference towards use and development of different sustainable products.

In this similar line, ICAR-CIRCOT has developed numerous technologies to utilize the agro residues along with empowering the agripreneurs/incubatees through its ABI scheme by encouraging, nurturing and supporting innovative agribusiness ideas and turning them into sound commercial ventures. The supportive initiatives by government organizations and capital support by various private and government agencies will further encourage youth and startups for venturing into agriculture based technopreneurship.

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among textile industries, ginning industries and cotton farmers, ICAR-CIRCOT catalyses the penetration of technologies among the masses. With a strong foothold in various zones of India through its regional stations, the needs of stakeholders are met with this experience and expertise. Apart from thousands of benefitted

cotton growers, notable industries include M/s. The Kadri Mills Limited, Coimbatore, M/s. Green Globe Mumbai, Navi Mumbai, M/s. Sana Agro Industries Limited, Raichur, Karnataka, M/s. Life Long Combines, Aluva, Kerala, M/s. Greyy, Navi Mumbai, M/s. Precision Tooling Engineers, Nagpur, M/s.