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Edited and Compiled

Dr. K. Sarala

Dr. H. Ravisankar

Mr. K. Viswanatha Reddy

Dr. B. Hema

Assistance

Md. Elias

Published

Dr. M. Sheshu Madhav

Director

ICAR-CTRI

Rajahmundry-533105

Andhra Pradesh

Ph: 0883-2449871-4

FAX: 0091-0883-2448341; 2410555

E-mail: directorctri@gmail.com

Website: ctri.icar.gov.in

From the Director's Desk

Need for Commercialization of Indian Agriculture: Emerging Trends and Opportunities

Historically, the universal importance of commercial agriculture in man's economic and socio-cultural development was well established across the world. The commercialization of agriculture is a multidimensional phenomenon of production with market orientation. India after achieving self-sufficiency in food grain production, agricultural transformation in the last few decades demonstrated that it is boarding on the path of acquiring commercial traits on a significant scale. Of late, new trends are emerging towards a greater degree of commercialization in agriculture based on market forces, and agriculture is treated as an agri-business enterprise with an overall interest to enhance profitability. Hence, there is a need to look at Indian agriculture as a modern business enterprise to unleash the potential of Indian agriculture while emphasizing on sustainable use of natural resources. The resilience of Indian agriculture as a single bright sector has demonstrated positive growth (3.4%) and contributed nearly 20% of the country's GDP while the whole economy contracted by 7.2% during the pandemic year (2020-21). India, an Emerging Market Economy, has to recognize the need for a greater degree of commercialization in agriculture.

To instill new dynamism and drive the growth of Indian agriculture, national initiatives related to the agriculture sector have brought new interest among different stakeholders ranging from research scientists, policymakers, corporate players, and more importantly among farmers. The main strategies viz., focus on remodeling commercial agriculture, inculcating entrepreneurship among the farmers, emphasis on export-centric farming and augmenting farmers' income. Nevertheless, the impetus to re-energize commercial agriculture is mainly emerging from the factors such as the urban population (35%), the pace of industrialization, shrinking farmlands, diversification of food baskets, and change in consumers' preference for quality-conscious food. Therefore, the realm of commercial agriculture is critically important without which we would all be going back to living in the stone ages and being forced to live in a primitive subsistence economy to grow our food. This indicates the importance of commercialization of Indian agriculture so that we can specialize in other walks of life.

India's rich biodiversity coupled with multiple agro-climatic zones and a rich cafeteria of soils offers abundant opportunities to produce diversified commercial crops. Paradoxically, India's dominant position as a global producer of many high-value commercial crops is juxtaposed with lower productivity, quality, and farmers' income. Therefore, leveraging commercial agriculture is a better way to improve productivity, and quality, create employment, and arrest migration of the rural workforce. It is envisioned that the basic tenet of commercialization of agriculture will have a close association with accomplishing some of the SDGs (Sustainable Development Goals). The fruits of growth in commercial agriculture would create a trickledown effect in the national economy. In light of this, accelerating growth momentum in the commercial agricultural sector becomes a national imperative to promote inclusive economic growth in India.

A vibrant country with a billion-plus population, rising income levels, and a diversified agriculture base are an outstanding competitive advantage, which creates buoyancy to emerge India as a foremost player in the global agriculture landscape. Moreover, the export orientation is very low in most commercial crops. Hence, it is the need of the hour to shift trends in academic thought and R&D focus towards leveraging commercial agriculture, establishing agriculture and industry collaborations, attracting private/corporate investments, promoting agri-PPPs, improving agricultural value chains, and enhancing the application of ICTs. Thus, realizing the need for commercialization of agriculture, we have to make breakthroughs in technological and organizational fronts to emerge as an agriculture powerhouse and major agro-commodity exporter in the world, accelerate development in the non-farm sector, revitalize rural economy and improve farmers' prosperity in the country.



Sheshu Madhav
(M. SHESHU MADHAV)

RESEARCH HIGHLIGHTS

Release of Varieties

- A Chewing Tobacco variety BSR.1 (Yasini) resistant to Black Shank was released by Tobacco Variety Release Committee on 10.05.2023 for cultivation in Chewing tobacco growing areas of Tamil Nadu.
- A high yielding (1600 kg/ha) *Jati* tobacco variety, DJ-1 was released for irrigated coastal belts of West Bengal in Tobacco Variety Release Committee of West Bengal held on 14.06.2023 at ICAR-CTRI RS, Dinhata.
- Two high yielding FCV tobacco varieties viz., FCR-15 (CTRI Shresta) (resistant to TMV, 2400 kg/ha) and FCJ-11 (CTRI Naveena) (3300kg/ha) and one high yielding burley tobacco variety YB-22 (Vijetha) (2900 kg/ha) for Andhra Pradesh were released by State Variety Release Committee (SVRC) on 19.07.2023.

Farm Mechanization in tobacco

Demonstrated the Leaf stringing machine at ICAR-CTRI RS, Kandukur under ICAR-CTRI and ICAR-CIAE collaborative project of Tobacco Board on 28.03.2023.

Technology Commercialization

ICAR-CTRI commercialized the 'Tobacco Bale Pressing Machine' with M/s RJ Technoquips, Hunsur, Karnataka on 13.06.2023. The machine is used to pack the graded cured leaf systematically which is called Bale (~100 kg). This machine reduces the labour (25%), drudgery and improves the efficiency.



Agriculture Drone Project

Under Agriculture Drone Project (ADP), a GOI flagship program, imparted training and created awareness on drone spraying technology in rice to 100 farmers in Gokavaram, East Godavari dt. during 09-11th March, 2023 and in 100 acres of tobacco at Singarabotla palem and Kandukur in Prakasam dt. during 24-25th March, 2023.



QRT

The Indian Council of Agricultural Research (ICAR), New Delhi has constituted the Quinquennial Review Team (QRT) to review the research work done by the ICAR-Central Tobacco Research Institute (CTRI), its Research Stations & Krishi Vigyan Kendras (KVKs) and All India Network Project on Tobacco (AINPT) for the period 2016-2022. The present QRT is headed by Dr. J.S. Sandhu Ex. DDG (CS), ICAR, as Chairman. Dr. V. Ravindra Babu, Ex- Director, ICAR-IIRR; Dr. A.R. Sharma, Director of Research, RLBCAU campus, Jhansi; Dr. S. Patel, Professor, Dept. of Process & Food Engineering, IGKV, Raipur; Dr. Govind P. Rao, Director, IANS, Gorakhpur University, Gorakhpur; Dr. A.K. Vashisth, Ex. ADG (PIM), ICAR, New Delhi; Dr. A.K. Mehta, ADG (Agril. Extension), ICAR, New Delhi are the members of QRT and Dr. Y. Subbaiah, Head (Acting), Div. of Post Harvest & Value Addition, ICAR-CTRI, Rajahmundry as Member-Secretary. The QRT visited ICAR-CTRI, Rajahmundry during 17-19 April, 2023. The team visited the CTRI Farm, Katheru, KVK, Kalavacharla on 18.4.2023 and CTRI RS, Jeelugumilli on 19.04.2023 and reviewed research work. An interaction meeting was arranged with Tobacco Board officials, trade, industry and farmers representatives on 19.04.2023. The QRT team visited ICAR-CTRI RS, Hunsur during 23-24th May, 2023, AINPT Centre, Shivamogga on 26th May, 2023 and AINPT Centre, Anand on 8th June, 2023. Interface meeting of FCV tobacco stakeholders of Karnataka with QRT members was held on 23.05.2023 at ICAR-CTRI RS, Hunsur. The team visited ICAR-CTRI RS, Dinhata during 9-10 June, 2023 and reviewed the research progress.



RAC Meeting



The Research Advisory Committee meeting of ICAR-CTRI was held during 15-16 June, 2023 at ICAR-CTRI, Rajahmundry under the chairmanship of Dr. H.S. Gupta, Former Director, IARI, New Delhi. An Interactive Meeting was organised for RAC team with the tobacco stakeholders on 16.06.2023 at Jangareddygudem Auction Platform and visited the farmers and research fields and identified the researchable issues. RAC chairman and members appreciated the efforts of CTRI on the transformation of institute development as well as research plans on newly added mandated crops like Chilli, Turmeric, Ashwagandha and Castor. RAC team including Dr. R.K. Singh, ADG (CC) identified the priority areas of National Institute for Research on Commercial Agriculture (NIRCA) and made a perspective research plan.

AINPT Group Meeting

The XII Group Meeting of All India Network Project on Tobacco (AINPT) was held at ICAR-CTRI, Rajahmundry during 27th and 28th January, 2023. Inaugural session was Chaired by Dr. T. R. Sharma, DDG (CS), ICAR, New Delhi and Dr. R. K. Singh, ADG (CC), ICAR, New Delhi was the Co-chairman. Officials from ICAR, New Delhi, Principal Investigators of various disciplines, Participants from State Agriculture University (AINPT Centres), CTRI & CTRI RS, Trade and Co-Unit Staff were participated in the XII Group Meeting. A total No. of 12 publications were released on this occasion.



MEETINGS/ TRAININGS/ SEMINARS**Meetings**

- An interactive meeting with the trade on 'Convergence of trade and CTRI for accelerated gain for tobacco exports' was conducted at ICAR-CTRI, Rajahmundry on 28.1.2023.
- Meeting of the Institute Technology Management Committee held at ICAR-CTRI, Rajahmundry on 08.05.2023.

Training programmes

- Training programme on 'Data collection in field, Lab, analysis and report preparation' was conducted to the Technicians of ICAR-CTRI and its Research Stations on 23.03.2023.



- Conducted four days online training on 'Good Agricultural Practices, Value Addition and Marketing of Ashwagandha - Potential Commercial Medicinal Plant' in collaboration with MANAGE, Hyderabad during 15-18th May, 2023.

Seminars/Lectures

- Organised a lecture on 'Research Strategy for Understanding Host Nematode Interactions - Field to Bench' by Dr. Uma Rao, Associate Director of Research, SRM Institute of Science and Technology, Tamil Nadu on 23.01.2023 in virtual mode. Director, ICAR-CTRI, scientists and technical staff participated.
- A seminar was organised by ICAR-CTRI in Hybrid mode on 'Technology Commercialization in Agriculture' by Dr. Purushotham Rudraraju, Manager-Agribusiness, Agribusiness and Innovation Platform (AIP), ICRISAT, Hyderabad on 9th May, 2023.



- A seminar was organised by ICAR-CTRI in Hybrid mode on 'Tobacco Genetic Resources: Status and Way forward' by Dr. J.J. Rapappa, Scientist, ICAR-CTRI RS, Hunsur on 18.05.2023.
- A seminar was organised by ICAR-CTRI in Hybrid mode on 'Nematode menace in commercial crops' by Dr. M. Venkatesan, Scientist (Nematology), ICAR-CTRI RS, Jeelugumilli on 30.05.2023.

Celebrations**Programmes organized**

- Workshop on 'Good Agricultural Practices of FCV tobacco' was conducted at CTRI RS, Jeelugumilli on 02.03.2023
- International Women's Day was celebrated at ICAR-CTRI, Rajahmundry on 08.03.2023.



- World Intellectual Property Day was celebrated with the theme "Women and IP: Accelerating Innovation and Creativity" on 26th April, 2023. Two webinars were organized on the theme with the speakers 1. Dr. Alka Chawla, Professor, University of Delhi and 2. Dr. Kalpana sastry, Managing-Director, AGRI-HUB, PJTSAU, Hyderabad.
- ICAR-CTRI, Rajahmundry celebrated 'World Environment Day' with the theme of 'Solutions to Plastic Pollution' on 05.06.2023



- Brainstorming Session on 'Current status and future prospectus on value addition of chilli & turmeric' was held on 06.06.2023 (virtual mode) with IHR, IISR, which will enable to formulate a road map for research programs of NIRCA.



- International Day of Yoga (IDY) was celebrated at ICAR-CTRI, Rajahmundry on 21st June 2023. All the staff members of CTRI have actively participated and observed the Common Yoga Protocol (CYP).

**SC SUB-PLAN**

- A training on 'Post harvest management of commercial crops' was conducted to farmers on 13.1.2023 at ICAR-CTRI RS, Veda sandur.
- Awareness programme on 'Best management practices on turmeric cultivation' was conducted on 24.01.2023 at CTRI RS, Dinhata and cattle feed was distributed to 200 SC farmers.
- Battery operated sprayers were supplied to 100 SC farmers at ICAR-CTRI RS, Kandukur on 11.01.2023.
- Farmers Day-cum-Training was organised under SCSP & TSP at ICAR-CTRI RS, Jeelugumilli on 08.02.2022. Supplied hand tools (small hoe, sickle and spade) to 500 SC farmers and curometers to 200 ST and SC tobacco farmers each.
- Training cum awareness programmes on 'Non chemical pest management for eco-friendly and sustainable agriculture' and 'Post harvest produce management in agriculture' were conducted on 17.02.2023 at CTRI Farm, Katheru. Drums (150) and tarpaulins (100) were supplied to the SC farmers.



- Conducted Awareness programme on 'Integrated Pest Management' on 28.02.2023 at Bobbillanka village, East Godavari dt., Andhra Pradesh and supplied 500 (Nos.) yellow sticky traps and 18000 marigold seedlings to 100 SC beneficiaries.
- Conducted Field Day on 'Demonstration of FCV tobacco varieties' and 'Awareness Programme on Feeding and Nutritional Management of Dairy cattle' on 1.3.2023 at ICAR-CTRI RS, Kandukur and supplied cattle feed.
- Conducted training programme on 03.03.2023 and supplied HDPE Tarpaulins to the SC farmers at ICAR-CTRI RS, Hunsur.
- Conducted Awareness, training & demonstration programme on 'Solar dried Food Processing' and 'Millet based nutritional recipes' on 08.03.2023 at ICAR-CTRI, Rajahmundry. Millet nutri kits (120) obtained from IIMR were supplied to 120 SC women beneficiaries.

- Awareness programme on 'Development of Kitchen garden and distribution of fruits and vegetable planting materials' was conducted on 10.03.2023.
- A training programme on 'Turmeric Production Technology' was conducted and supplied 50 kg of turmeric seed each to 60 SC beneficiaries on 31.03.23 at ICAR-CTRI RS, Hunsur.
- Conducted training programme on 'Crop intensification and diversification for enhancing crop productivity and profitability in tobacco growing areas' on 27.04.2023 at CTRI Farm, Katheru. DAP and Urea were supplied to 150 SC farmers.
- Conducted awareness programme on 'Water use efficient technologies for improving crop productivity in commercial crops' on 27.04.2023 at CTRI Farm, Katheru. HDPE sprinkler irrigation pipes were supplied to 100 SC farmers.

Visits of Dr. M. Sheshu Madhav, Director, ICAR-CTRI

- Visited ICAR-CTRI RS & KVK, Kandukur along with Dr. Shaik N Meera, Director, ICAR-ATARI-Zone X, Hyderabad on 01.03.2023 and inaugurated threshing floor and Library cum Museum.



- Participated in the 94th General body meeting of ICAR as a GB member.
- Inaugurated Bore well at Black Soil Research Farm, Katheru on 30.03.2023.



- Visited ICAR-CTRI RS, Guntur on 28.03.2023 and inaugurated fully renovated guest house, newly constructed turmeric processing shed.



Research Collaborations

1. MoU signed with Yogi Vemana University, Kadapa for students Postgraduate and Ph.D. research programmes.



2. MoU signed with Tamil Nadu Agricultural University, Coimbatore on 02.06.2023 for students training, Postgraduate and Doctoral research programmes.

Functional Industry-Institutional Linkages

- ICAR-CTRI and IICT, Hyderabad on 07.03.2023 for 1. Plant (Turmeric, chilli, Aswagandha, castor and tobacco) based API (active pharmaceutical ingredient) extraction and standardisation 2. Analytical support for extraction of bio-active compounds 3. Tobacco waste utilization for commercial purposes



- ICAR-CTRI and M/s. ITC Ltd., Agribusiness Division, Guntur for Assessing the impact of crop development initiatives of FCV tobacco production in the NLS, A.P.
- ICAR-CTRI and M/s. FMC India Ltd., Mumbai for evaluation of Sulfentrazone 39.6% SC and Sulfentrazone 28% + Clomazone 30% WP herbicides for weed control in tobacco under Northern Light Soils (NLS) and Karnataka Light Soils (KLS) FCV tobacco growing regions.

KRISHI VIGYAN KENDRAS

KVK, Kalavacharla

- Two Days training programme on Natural Farming organized in collaboration with APCNF at KVK, Kalavacharla during 5-6 January, 2023. Eighty women groups participated in the programme.
- Dr. Shaik N. Meera, Director, ICAR-ATARI Zone X, Hyderabad visited ICAR-CTRI, KVK-Kalavacharla and interacted with the staff on 15.02.2023.

- Scientific Advisory Committee (SAC) meeting of ICAR-CTRI-KVK, Kalavacharla was held at ICAR-CTRI, Rajahmundry on 21.02.2023.
- ICAR-CTRI-KVK, Kalavacharla organised Annual General Body Meeting of Mythri FPO at Durgada village of Gollaprolu mandal, East Godavari District, A.P. on 15.03.2023.
- ICAR-CTRI, KVK-Kalavacharla organised 'Annual General Body Meeting of Shresta Green Farms FPO' at Kakinada (rural) on 27.03.2023.
- ICAR-CTRI live-streamed the inaugural address of Hon'ble Prime Minister on the occasion of the International conference on "Enhancing Productivity and Value Addition in Millets (Global Millets - Shree Anna)" held at New Delhi on 18.03.2023 as part of the celebrations of International Year of Millets - 2023. In this connection, ICAR-CTRI-KVK, Kalavacharla has organised a training programme on 'Millets for opportunity in Natural Farming'.

KVK, Kandukur

- Scientific Advisory Committee (SAC) meeting of CTRI-KVK, Kandukur was organised on 01.03.2023.
- ICAR-CTRI-KVK, Kandukur organised an awareness programme on importance of Millet production and consumption to farmers and students on 18.03.2023.



PERSONALIA

Retirements

Following twelve employees of the Institute retired from the Council's service on attaining the age of superannuation during Jan. June, 2023.

SN	Name	Date
1	D.V.L. Satyavathi	31.01.2023
2	Shambu Gowda	31.01.2023
3	Y.S.V. Subba Rao	31.01.2023
4	B.V. Rama Rao	31.03.2023
5	Ningamma	31.03.2023
6	Dr. C.C.S. Rao	30.04.2023
7	C. Muruganantham	30.04.2023
8	K.A.J. Kennedy (Volun.)	01.05.2023
9	C. Nehru	31.05.2023
10	Y. Udaya Kumar	30.06.2023
11	N. Manjula	30.06.2023
12	B.S.S. Sai	30.06.2023

OBITUARY

Sri P.V.V.V. Prasad, Assistant, CTRI RS, Kandukur passed away on 29.01.2023.