

CTRI

Transforming Indian Tobacco Farming



भाकृअनु
ICAR

ICAR - CENTRAL TOBACCO RESEARCH INSTITUTE

(ICAR-NATIONAL INSTITUTE FOR RESEARCH ON COMMERCIAL AGRICULTURE)

(An ISO 9001 : 2015 Certified Institute)

RAJAHMUNDRY - 533 105, ANDHRA PRADESH, INDIA



ICAR-CTRI

CTRI

Transforming Indian Tobacco Farming

ICAR - CENTRAL TOBACCO RESEARCH INSTITUTE

(ICAR-NATIONAL INSTITUTE FOR RESEARCH ON COMMERCIAL AGRICULTURE)

(An ISO 9001 : 2015 Certified Institute)

RAJAHMUNDRY - 533 105, ANDHRA PRADESH, INDIA



ICAR-CTRI

Vision

Provide vibrant research back-up for Indian tobacco to be less harmful, remunerative and globally competitive in the changing milieu of national and international policy regimes.

Mission

Developing environmentally sustainable agrotechnologies for production efficiency, product quality and diversified uses of tobacco.

Mandate

1. Basic and strategic research on domestic and exportable types of tobacco, improvement in quality and value added products.
2. Coordination of tobacco research and developing alternate usage of tobacco.
3. Identification of alternative crops/ cropping systems for tobacco growing regions of the country.
4. Dissemination of technologies and capacity building.

*My Lord this sacred herbe which never offendit
Is forced to crave your favour to defend it*

*- Barclay
great philosopher*



CTRI Journey ...

In Pursuit of Farmers' Prosperity

The Beginning ...

Christopher Columbus discovered the narcotic qualities of tobacco in 1492.

Tobacco plant was introduced into Europe by Spanish physician in 1560.

Jean Nicot, French Ambassador introduced into French Court.

Nicotiana and nicotine are derived from the name Jean Nicot.

Introduced in India in the beginning of 17th Century.

Nicotiana tabacum and *Nicotiana rustica* are cultivated.



The Footprint (1936-46)



Cigarette Tobacco Research Station established at Guntur under the aegis of Imperial Agricultural Research Station (IARI), 1936

First Flue-cured tobacco introduction was Harrison Special (1936)



Indian Central Tobacco Committee

The important milestone in tobacco history in India was the establishment of the Indian Central Tobacco Committee (ICTC) on 28th November, 1945 at Bombay. **Sir Herbert Stewart** was the first President of the Committee succeeded by **Sardar Datar Singh** in 1946.



Sardar Datar Singh
2nd President, ICTC

Era of Foundation ... (1947-1956)







Dr. B.S. Kadam
First Director
(1947-1954)



Cigarette Tobacco Research Station, Guntur taken over by ICTC (1947)



Central Tobacco Research Institute established by ICTC at Rajahmundry (1947)

ICTC established ...



Bidi Tobacco Research Station at Anand (1947)



Chewing and Cigar Tobacco Research Station at Vedsandur (1948)



Bidi Tobacco Research Station at Nipani (1947)



Wrapper Tobacco Research Station at Dinhati (1952)



Hookah and Chewing Tobacco Research Station at Pusa (1950)



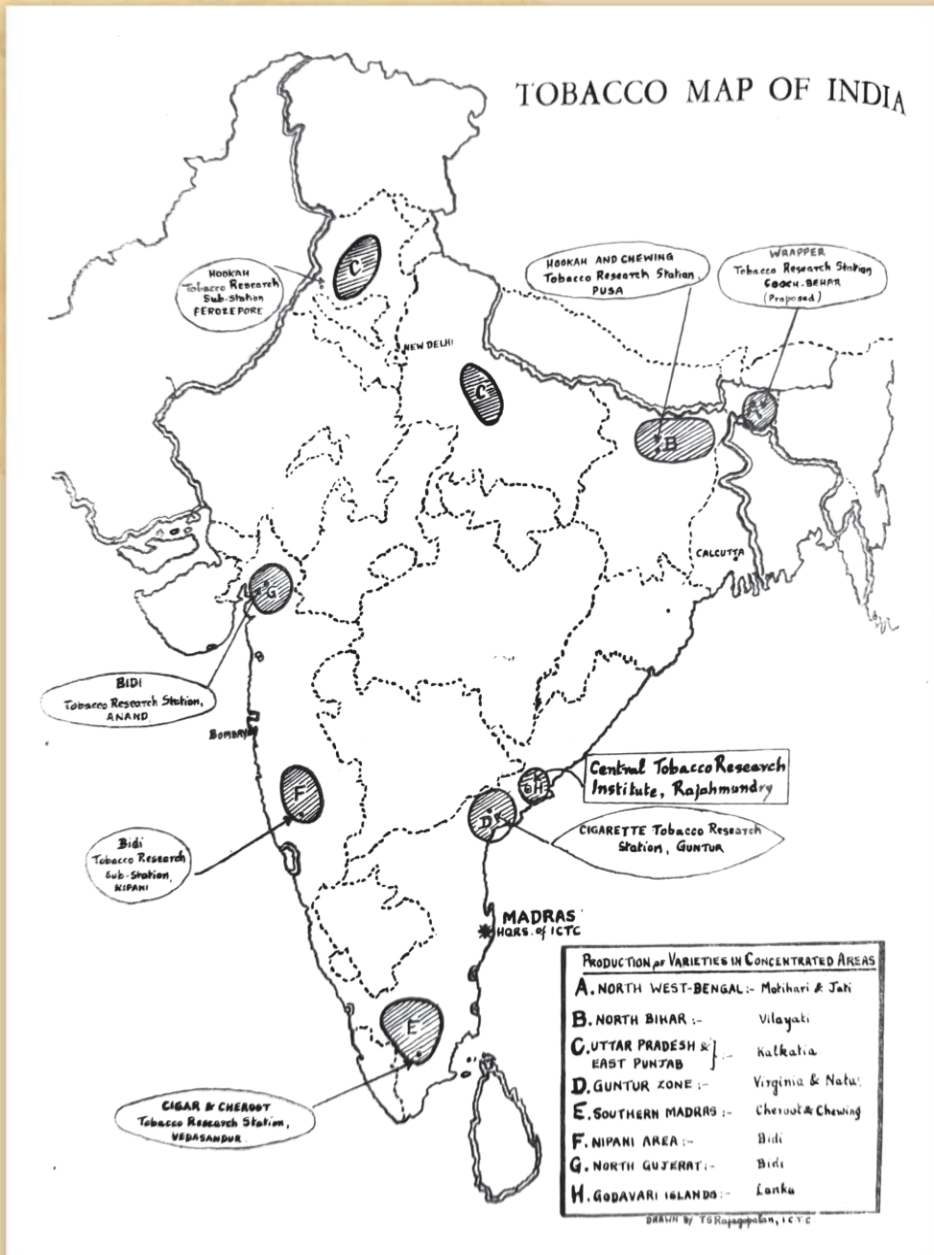
**First FCV tobacco variety
Chatam released for black soils of A.P. in
1950 - Yield 1100 kg/ha**



First *Bidi* tobacco introduction K-49 in 1939



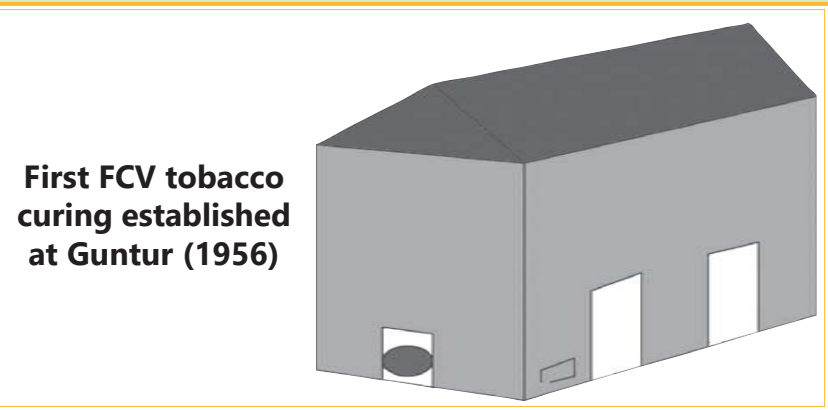
**First *Jati* tobacco variety Chama released for West Bengal in 1956 -
Yield 1800 kg/ha**



First Tobacco Map of India with distribution of different tobacco types developed by CTRI (1951)



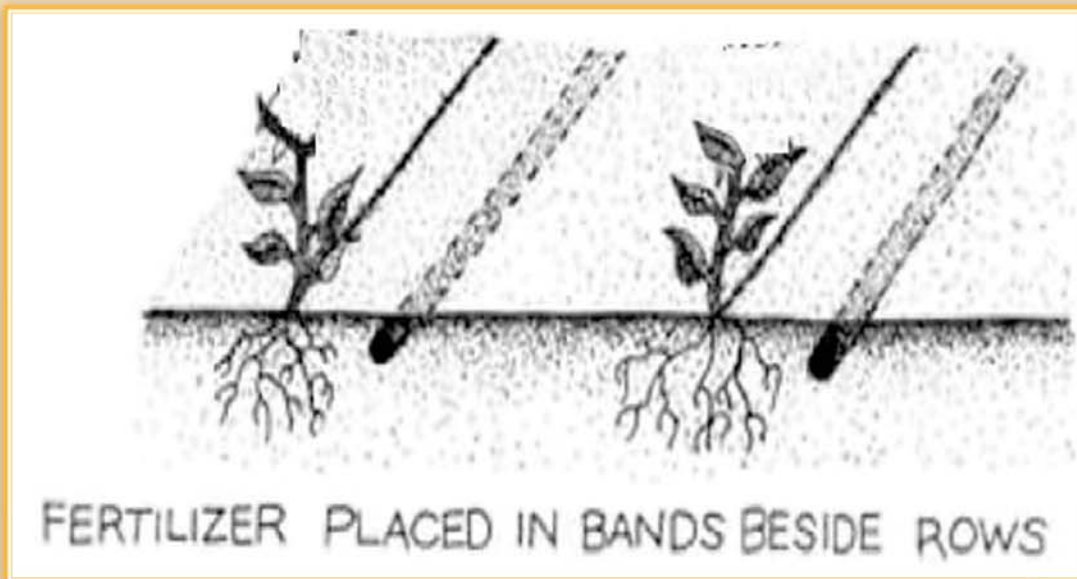
First generation suckercide : Coconut oil 1:10 (1951)



First FCV tobacco curing established at Guntur (1956)



Local cheroot grown at 34" x 24" (1950)



Band application of fertilizer recommended in place of broadcast in Cheroot tobacco (1952)



Powdery mildew was a serious disease in FCV and sulphur application @ 40 lbs/acre was recommended (1955)

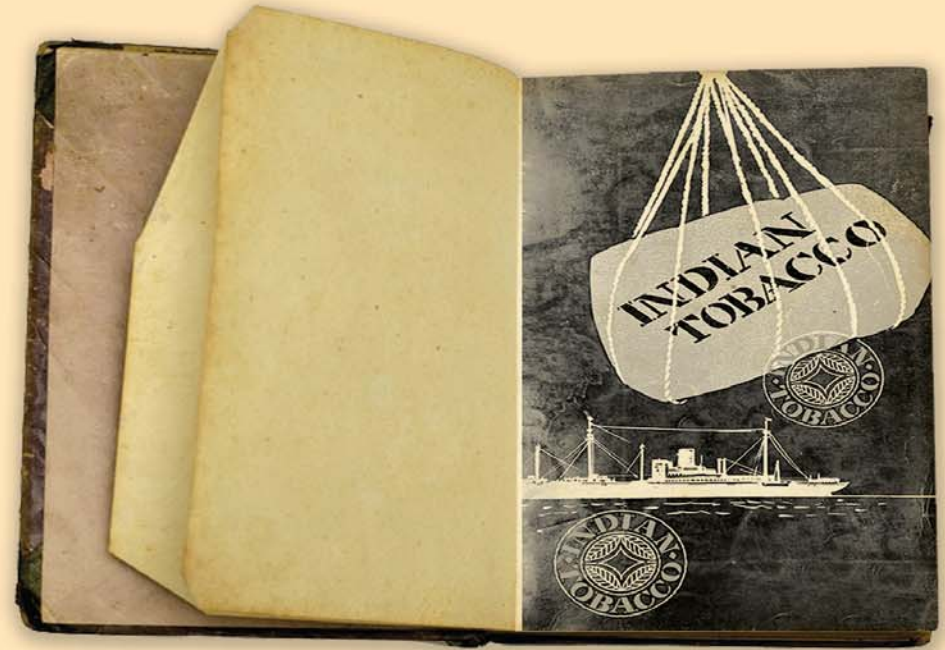


First recommended fertilizer - Ammonium sulphate @ 22 kg/ha for FCV in Vertisols (1954)





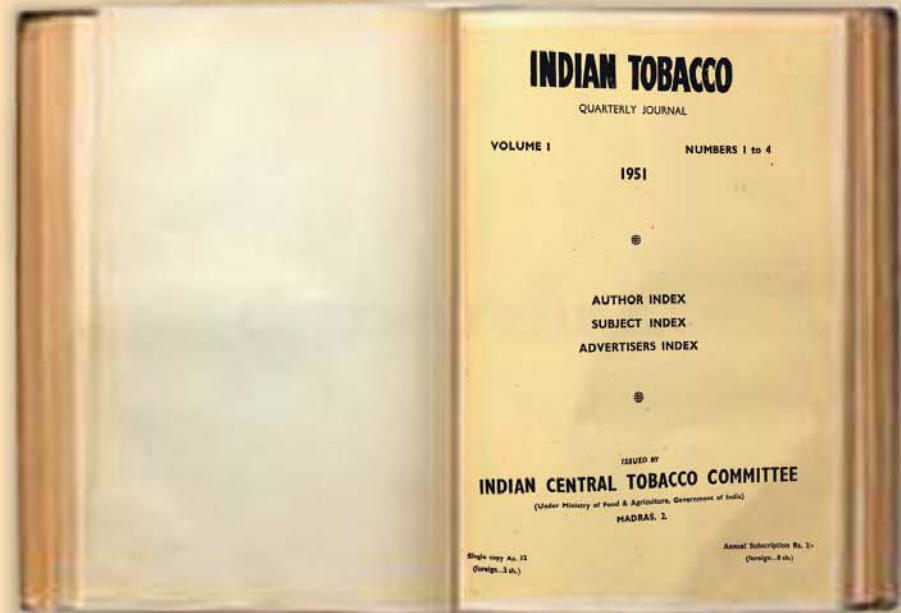
First Farmers' Day at Rajahmundry and Guntur (1951)



Tobacco Bulletin first issue released in January (1951)



Dr. B.S. Kadam's visit to CTRI RS, Veda sandur (1953)



Indian Tobacco Journal first issue released (1951)

Era of Establishment ... (1957-1966)







Dr. N.R. Bhat
Director
(1955-1958)



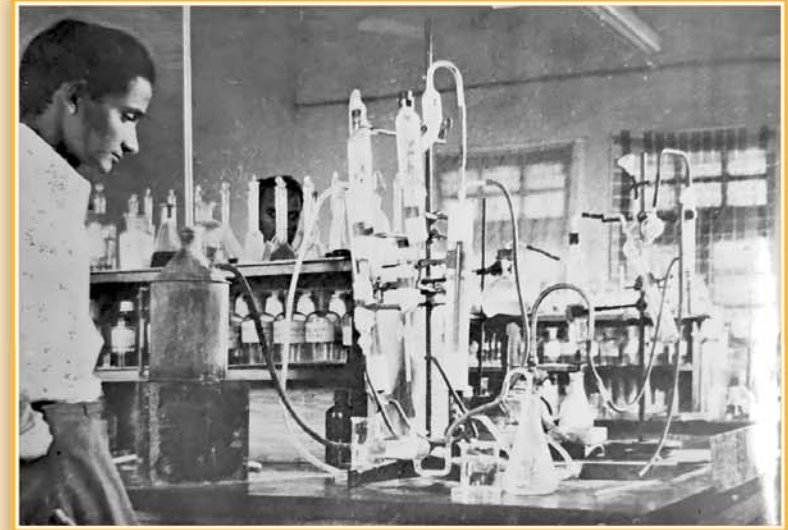
Research on FCV tobacco in Karnataka, CTRI Research Station, Hunsur established (1957)



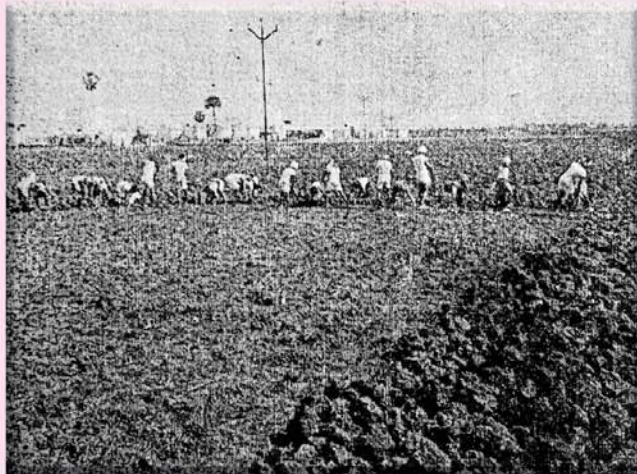
FCV tobacco variety 'Delcrest' released for black soils of A.P. in 1960 - Yield 1200 kg/ha



Dr. G.S. Murthy
Director
(1958 - 1963)



Chemical quality parameters for chewing and *natu* tobacco determined by titrimetric method (1959)



Field preparation - Crow barring method
(1962)



First recommendation in nursery - Application
of Aldrin dust 2 weeks before sowing for
control of cutworms (1963)



Bordeaux mixture recommended
for damping off disease in nursery
(1964)

CTRI brought under the aegis of Indian Council of Agricultural Research (ICAR) in 1965

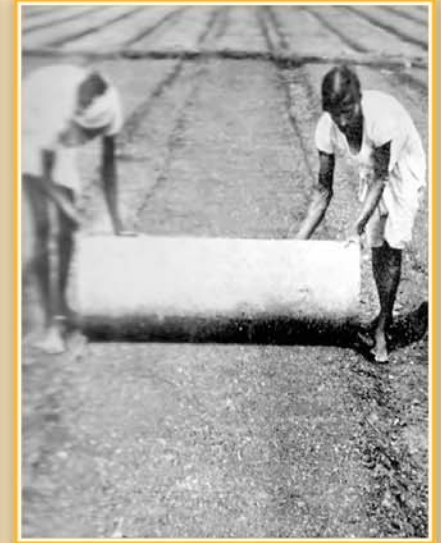




First commercial seed production and distribution (1961)



Plant Row Plough Furrow (PRPF) method of fertilizer application was recommended (1963)



Seed-bed pressing with a hume pipe after sowing (1967)



DDT 5% dust for control of *H. armigera* and endrine for *P. lithora* was most effective (1964)



Visit of Sri Panjab Rao Deshmukh, Union Minister for Agriculture, Gol (1960)



Visit of Dr. B.P. Pal, First Director General, ICAR to ICAR-CTRI (1965)

Era of Rising ... (1967-1976)







Dr. D.M. Gopinath
Director
(1964-1972)



Bidi Tobacco Research Station of Anand elevated to AICRPT Headquarters in 1970



AICRPT Sub-centre established at Nandyal, A.P. in 1970



Bidi Tobacco Research Station of Nipani elevated to AICRPT Sub-centre under UAS, Dharwad in 1970-71



First Burley tobacco variety 'Burley-21' released for A.P. in 1972 - Yield 1700 kg/ha



FCV tobacco variety Kanakaprabha released for black soils of A.P. in 1971 - Yield 1500 kg/ha



Dr. N.C. Gopalachari
Director
(1972-1985)



Burley Research Station, Jeddangi established in 1976



Tobacco Board established (1975)
CTRI is technology provider since inception



Light soil Research Station, Devarapalli established for
FCV & Burley tobacco (1976)



FCV tobacco variety CTRI Special released for light and black soils of A.P. in 1976 - Yield 1365 kg/ha



Bidi tobacco variety GT-4 released for Gujarat in 1976 - Yield 2841 kg/ha



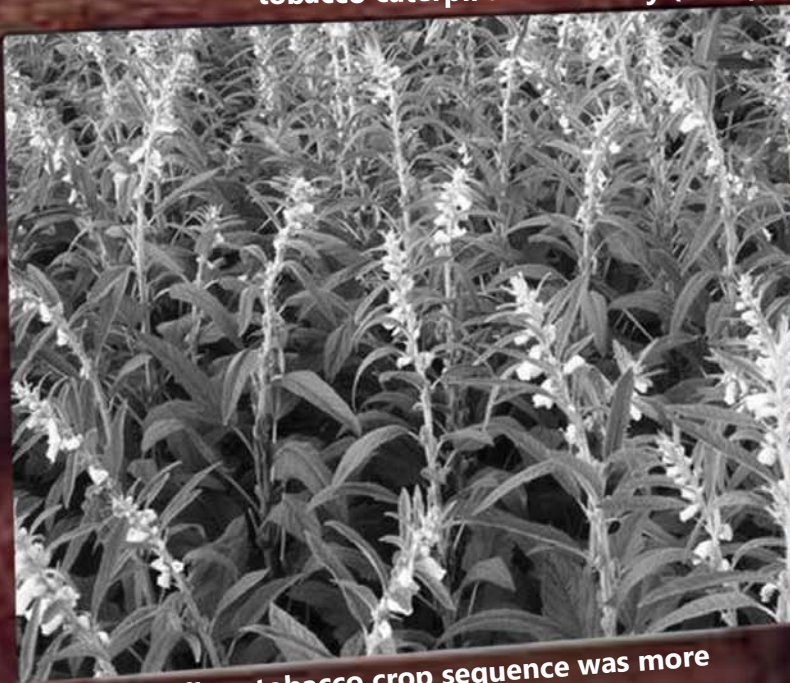
Chewing tobacco variety Gandak Bahar released for Bihar in 1976 - Yield 1450 kg/ha



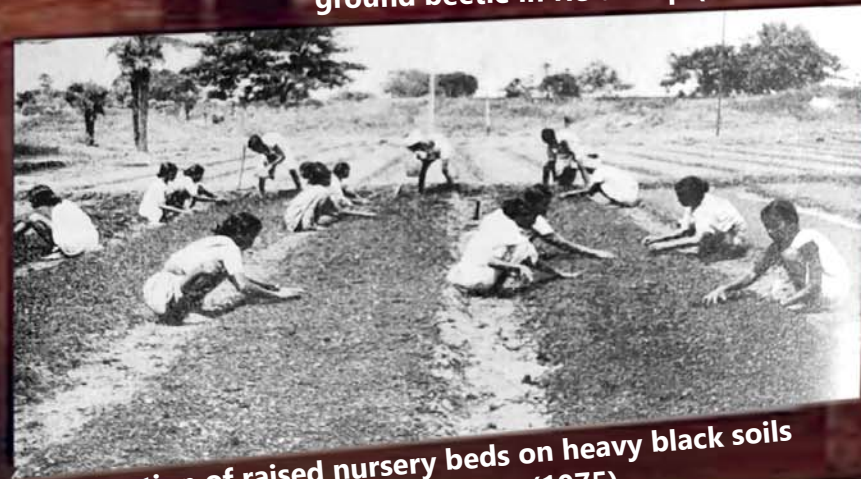
Use of Neem Seed Kernel Suspension recommended for control of tobacco caterpillar in nursery (1973)



Neem cake powder recommended for control of ground beetle in field crop (1975)



Gingelly - tobacco crop sequence was more remunerative (1968)



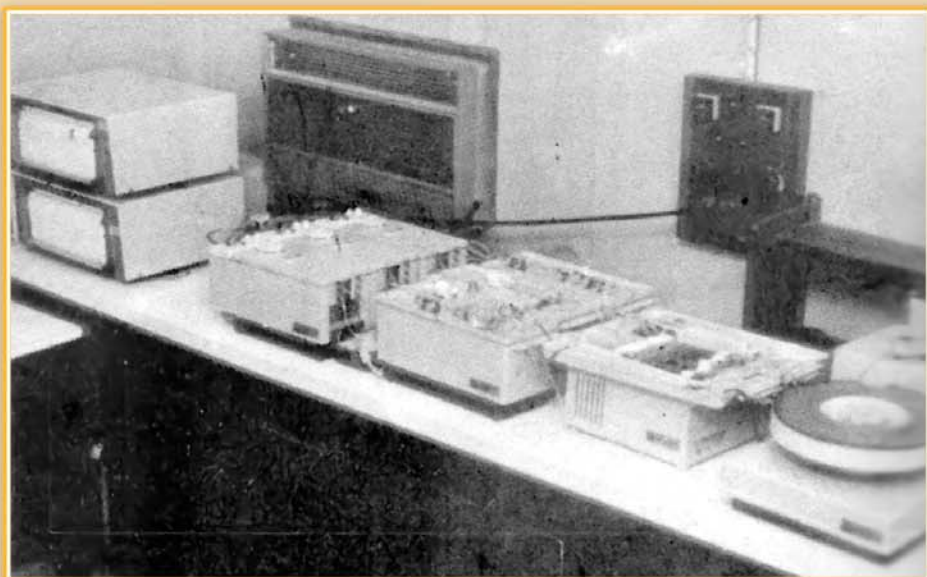
Protection of raised nursery beds on heavy black soils with tobacco midribs (1975)



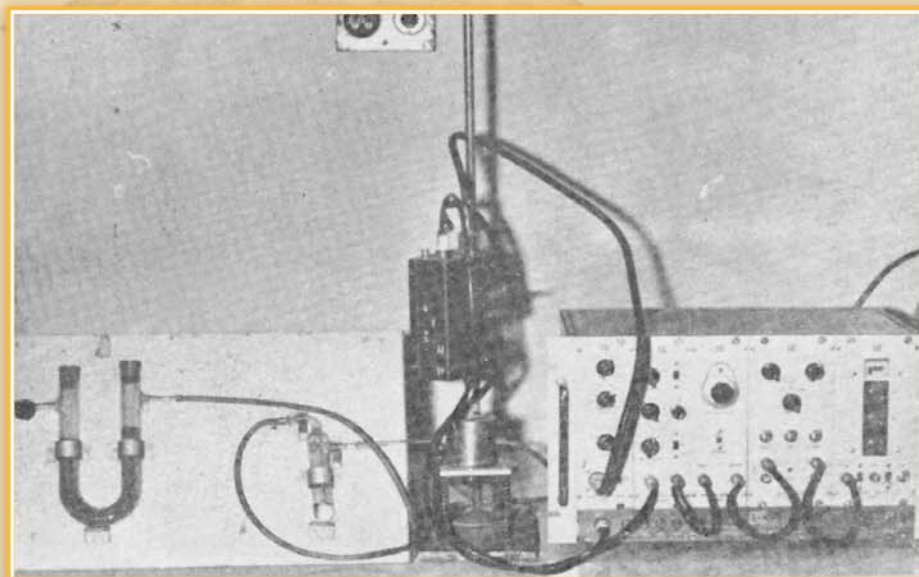
Low profile barn (24' x 16' x 11') was introduced for fuel saving (1974)



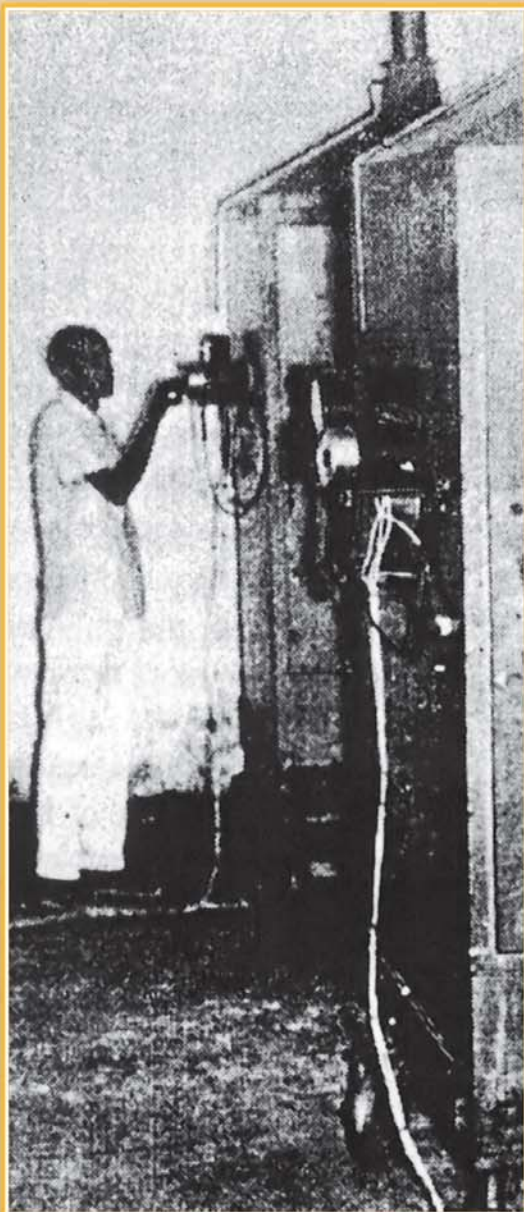
Impact of Institute was realised by increase in productivity by 18% during 1958-66



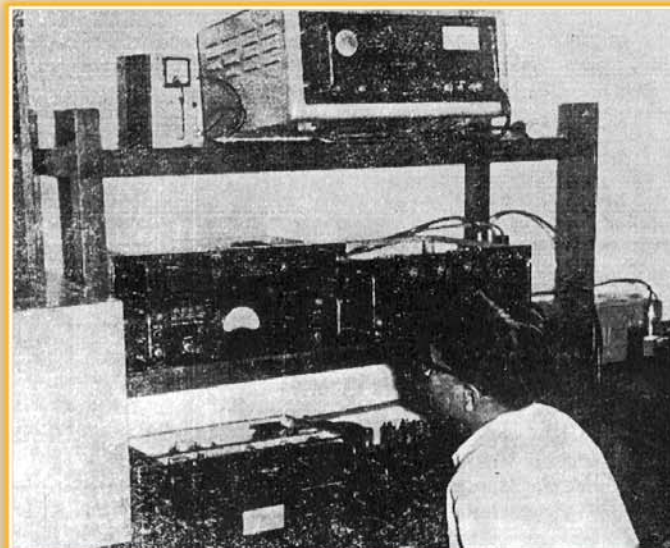
Phytochemicals (nicotine, organic acid, solanesol) extraction from tobacco waste was standardised (1976)



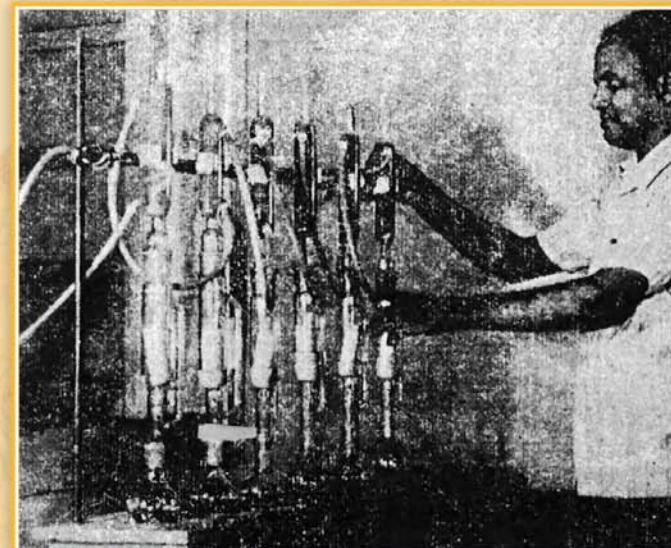
Estimation of leaf quality constituents determined by Proportional Counter (1976)



Introduction of Miniature Barn to study the effect of curing on leaf quality (1976)



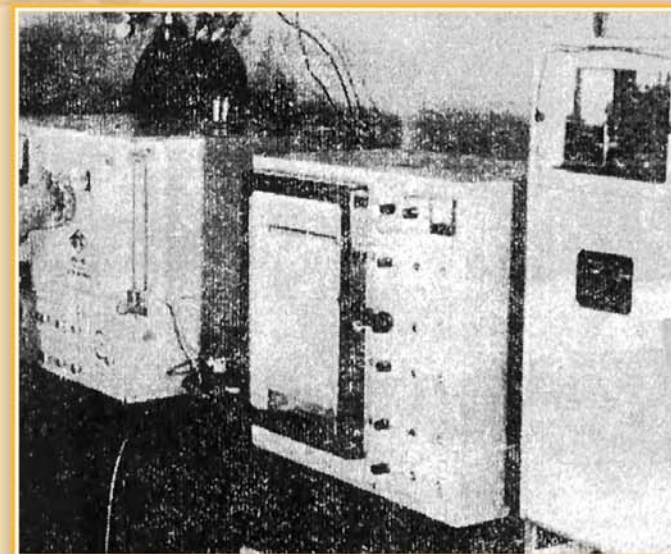
Use of radio tracer techniques for nutrient estimation in tobacco research (1976)



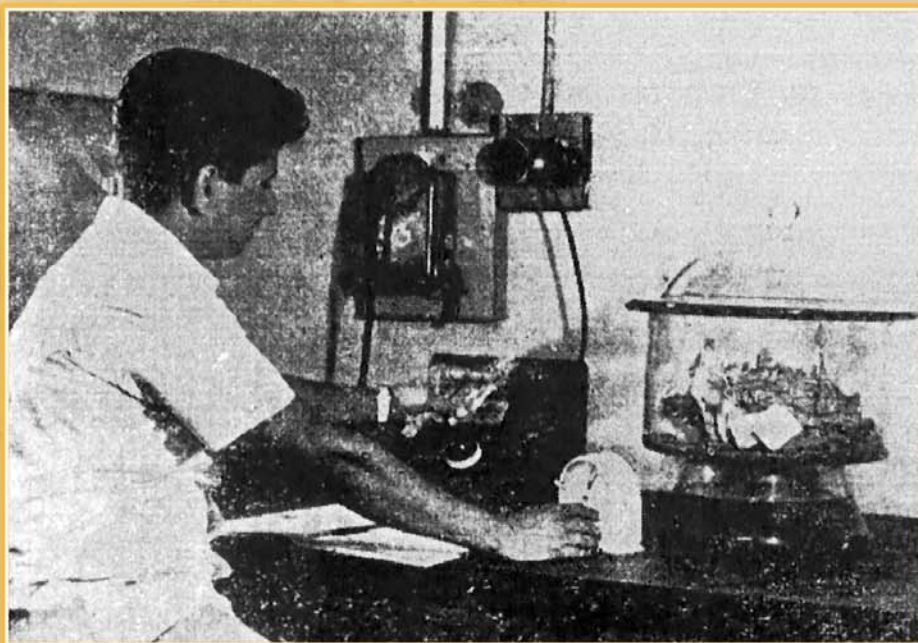
Research on aroma started by determination of aroma compounds in tobacco using Petroleum Ether Extract (1976)



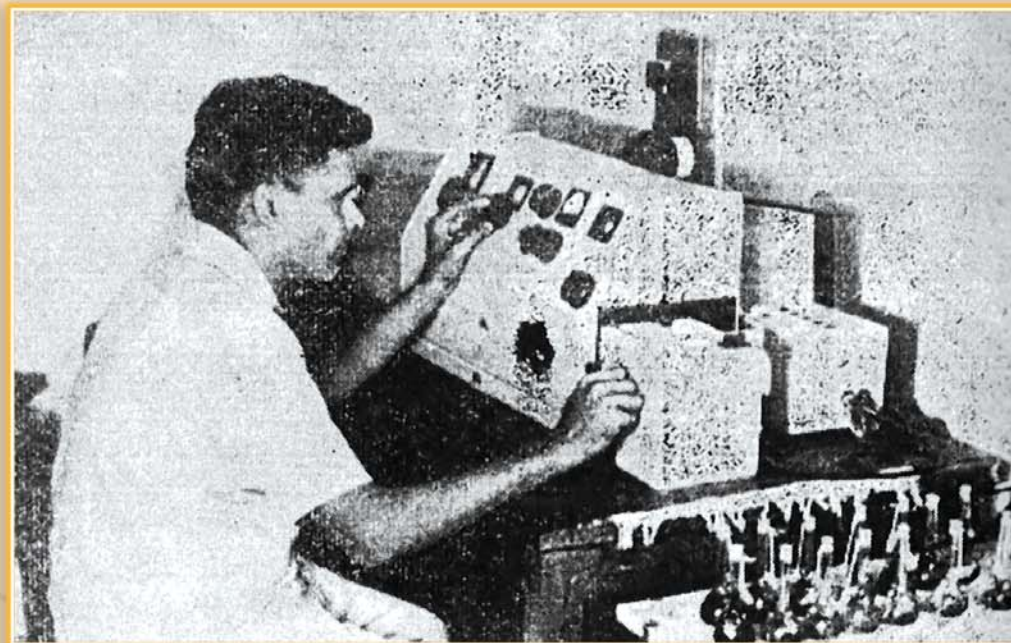
Experiments on cigarette making and manufacturing quality determination in FCV tobacco initiated at Rajahmundry (1976)



Estimation of minor chemical components by Gas-chromatography initiated (1976)



Estimation of leaf burn in FCV tobacco (1976)



Spectrophotometric determination of tobacco alkaloids (1976)



Silver Jubilee of CTRI celebrated - Sri J. Chokka Rao, Agriculture Minister, Andhra Pradesh graced the occasion (1976)



Visit of Dr. M.S. Swaminathan, Secretary, DARE & DG, ICAR to CTRI (1976)



First National Symposium on Tobacco held at Rajahmundry (1976)

Era of Enduring ... (1977-1986)







Research Station at Kandukur established for FCV tobacco under SLS & SBS regions in 1977



Krishi Vigyan Kendra, Kalavacharla established under ICAR-CTRI in 1983



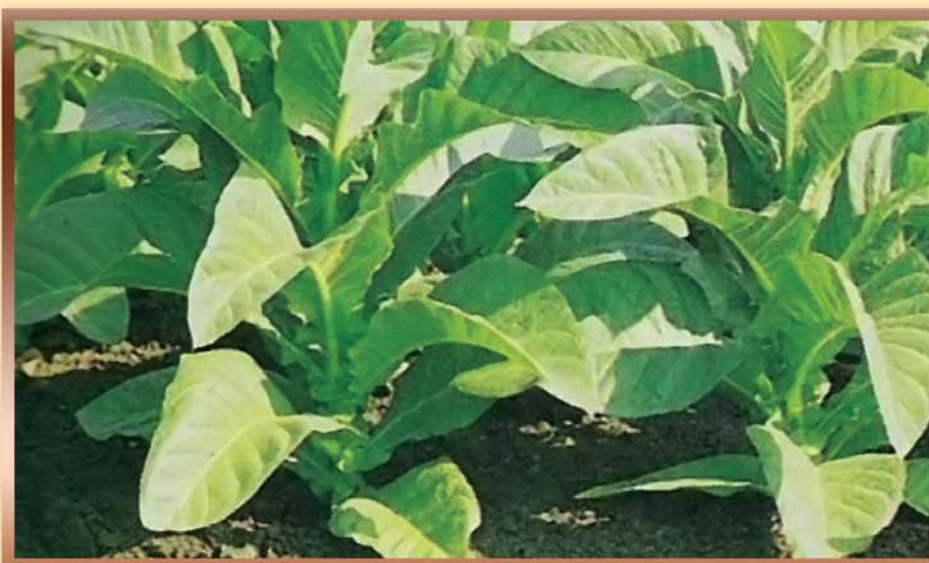
CTRI shifted to New Laboratory Building (1985)



First Chewing tobacco variety Vairam released for Tamil Nadu in 1977 - Yield 2800 kg/ha



Chewing tobacco variety Thangam released for Tamil Nadu in 1980 - Yield 3226 kg/ha



Natu tobacco variety Viswanadh released for rainfed areas of A.P. in 1986 - Yield 2430 kg/ha



First FCV tobacco variety McNair-12 released for NLS of A.P. in 1986 - Yield 1880 kg/ha



**First FCV tobacco variety Swarna released for KLS in 1986 -
Yield 1450 kg/ha**



***Bidi* tobacco variety A-119 released for Gujarat, Karnataka,
Maharashtra and A.P. in 1984 - Yield 2625 kg/ha**



***Bidi* tobacco variety A-2 released for Gujarat, Karnataka,
Maharashtra and A.P. in 1984 - Yield 2555 kg/ha**



**Topping at 18 leaves was recommended for higher yield in *Natu*
tobacco at Guntur (1977)**

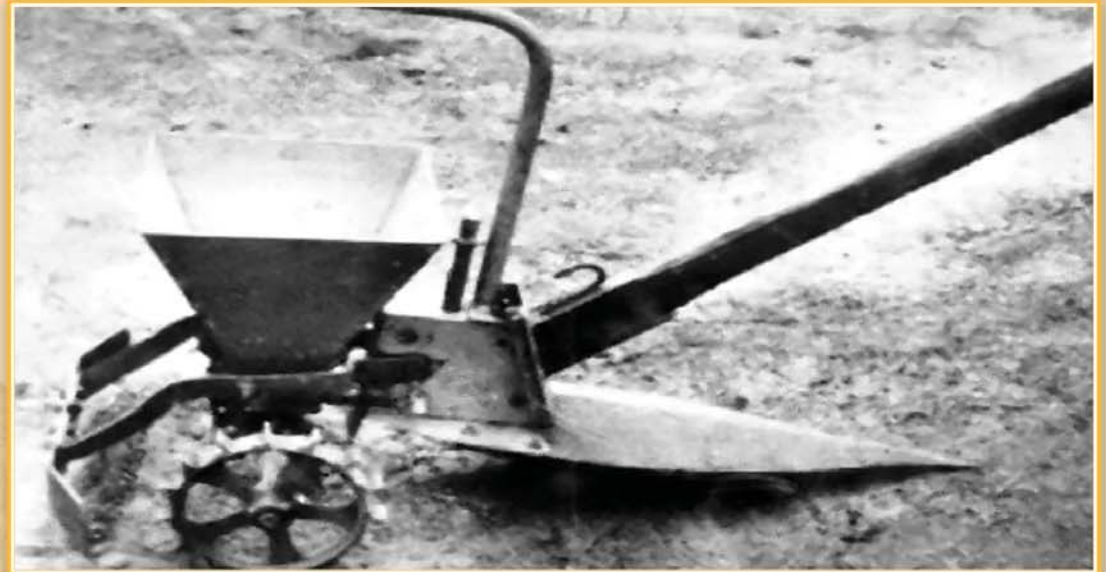
First TMV resistant source Vamorr 50 identified (1986)



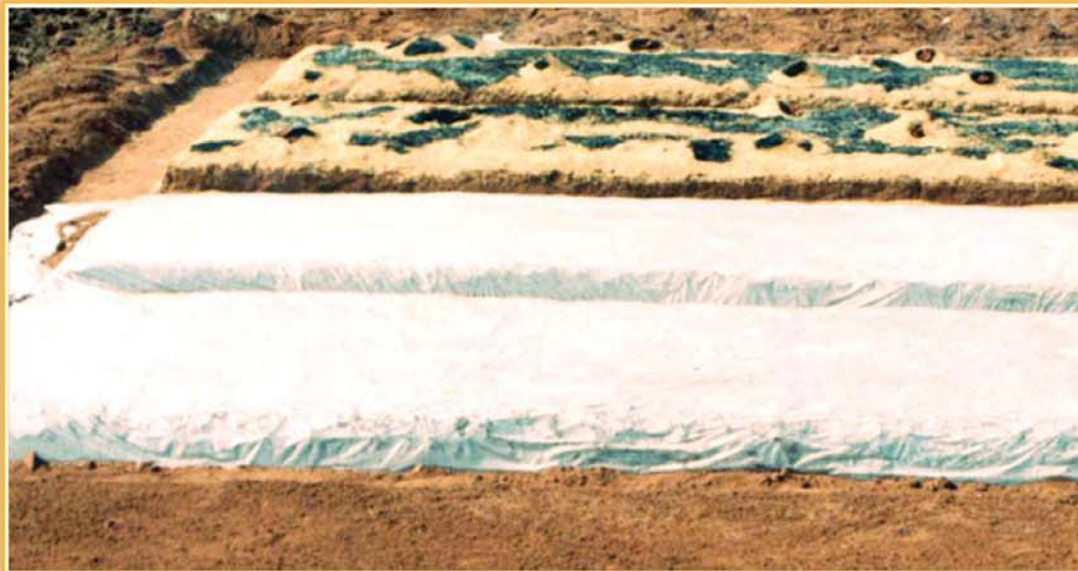
DWFC resistant germplasm line for Tobacco caterpillar (1986)



BEINHART 1000-1 resistant germplasm line for Black shank and other diseases (1986)



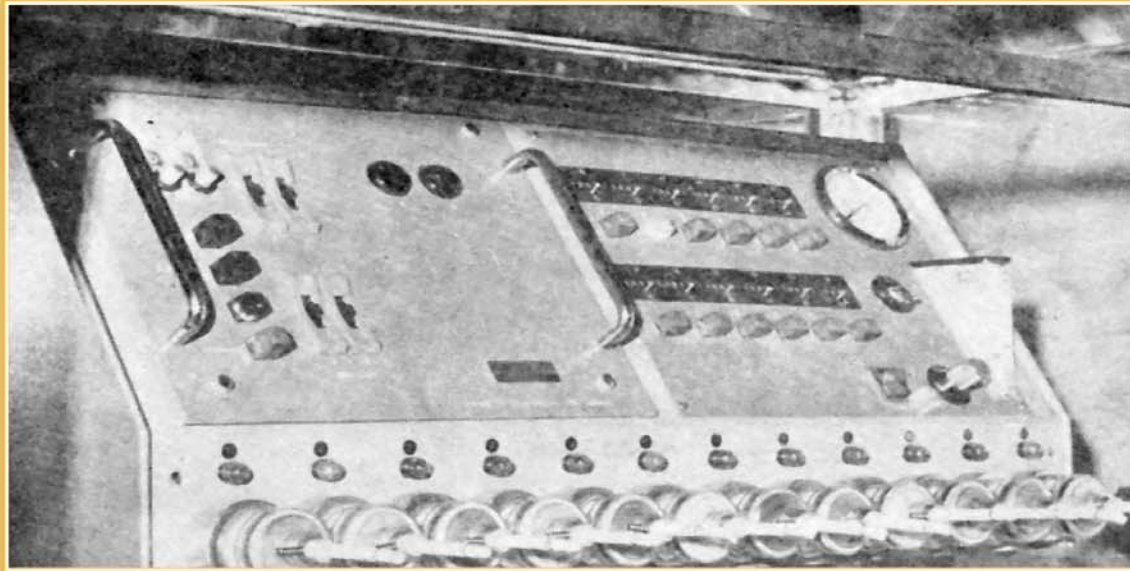
Mechanisation introduced by Deep fertilizer instrument (1977)



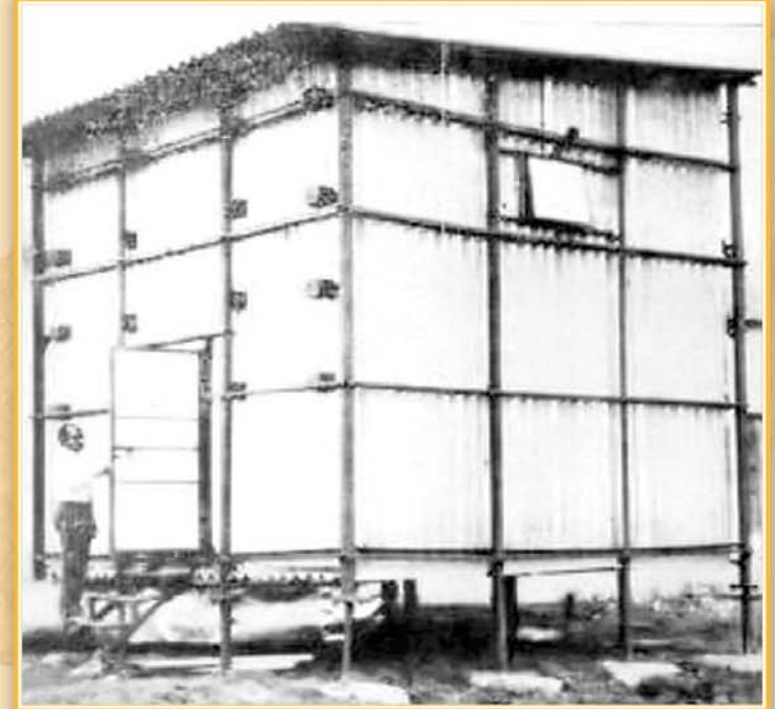
Use of paddy husk for rabbing the nursery beds (1977)



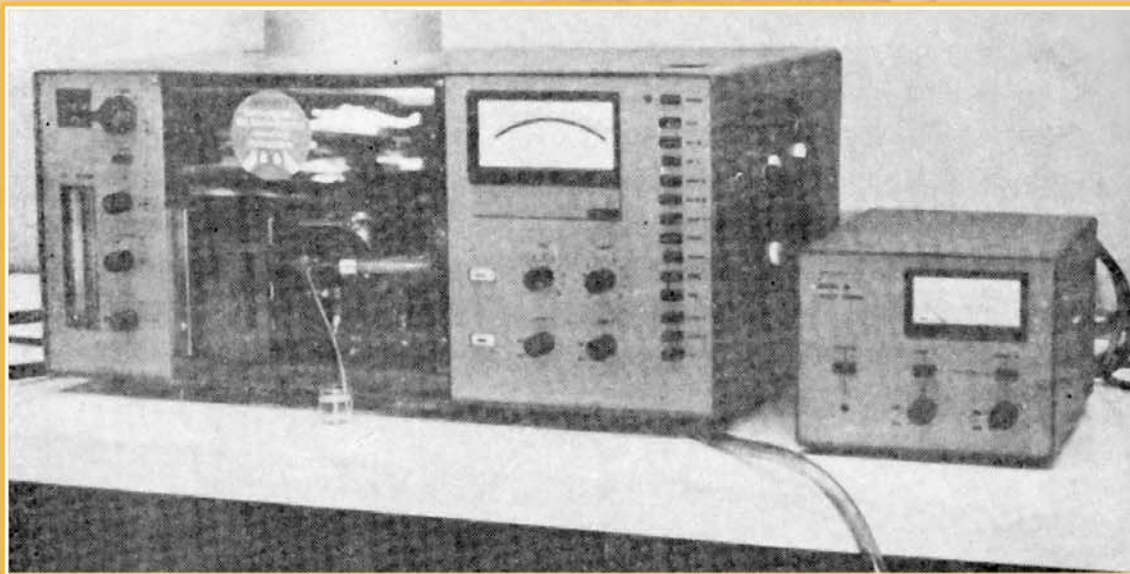
Anthracnose disease was serious constraint - Carbendazim was recommended (1978)



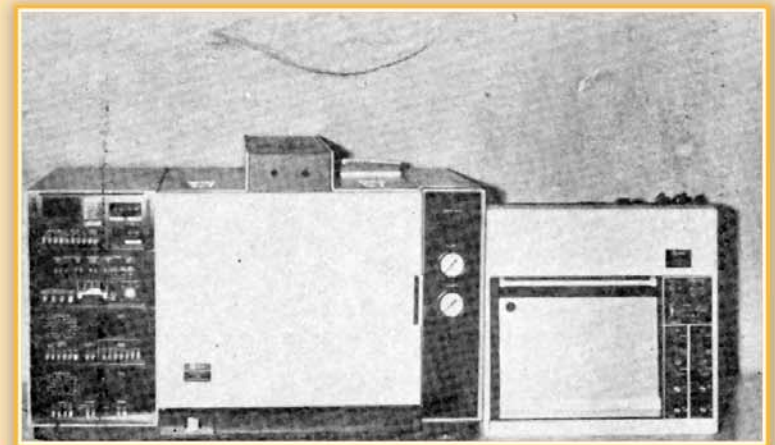
Introduced smoking machine for estimation of total particulate matter and nicotine in Indian brand cigarettes (1979)



Novel system of curing - Solar air-drying system introduced for *Natu* tobacco at Guntur (1984)



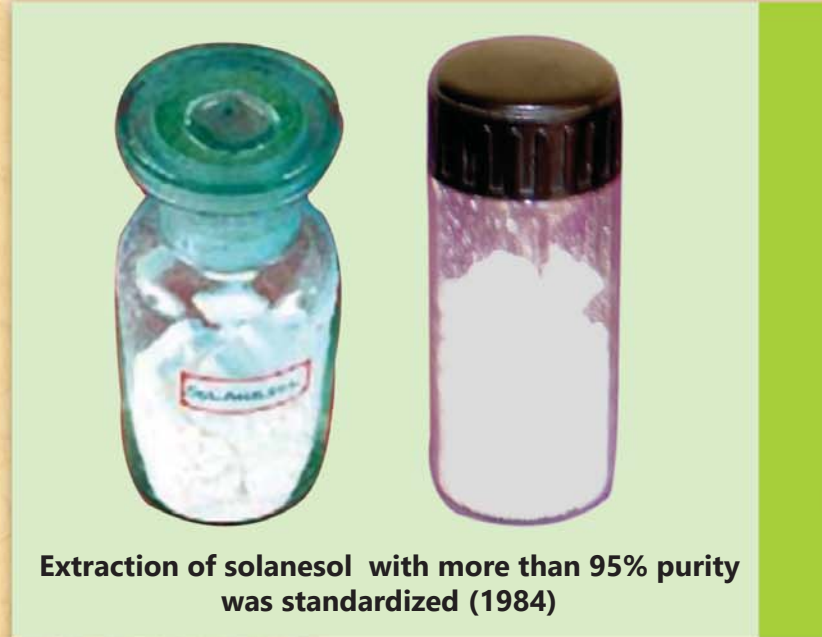
Experiments on estimation of lead and cadmium in Indian tobacco using Atomic Absorption Spectrophotometer (1984)



Estimation of aroma constituents in FCV tobacco was standardised using GLC (1983)



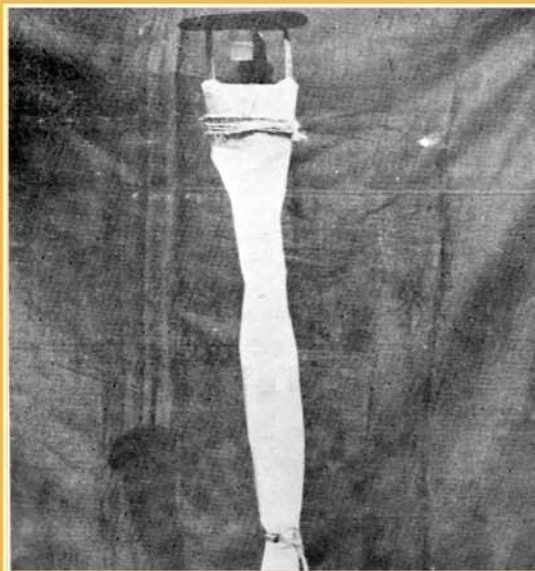
Basamid 99G was recommended for control of root-knot nematode (1980)



Extraction of solanesol with more than 95% purity was standardized (1984)



Second generation suckercide - Neem oil emulsion (1985)



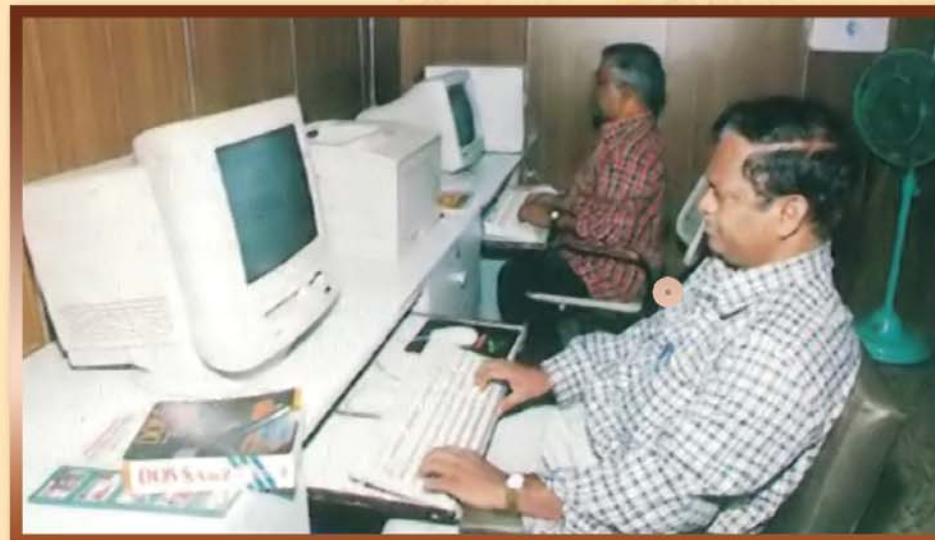
Non chemical method introduced for pest management - Pheromone trap for *Spodoptera litura* F. (1985)



Use of solar energy for curing initiated (1985)



Use of micro computers for statistical analysis (1978)



Desk Top Publishing (DTP) system introduced for printing of publications (1996)



Inauguration of 'Lab to Land Programme' (1979)



Visit of Dr. O.P. Goutam, Secretary, DARE & DG, ICAR to ICAR-CTRI (1980)



Sri Y. Venkata Rao, Hon'ble Minister for Agriculture, A.P., inaugurated the Fourth National Symposium on Tobacco (1981)



Delegates of World Bank Project, Tanzania visited CTRI Research Station, Hunsur (1982)



European Economic Community delegation visit (1982)



Dr. M.V. Rao, DDG (CS), ICAR graced the Fifth National Symposium on Tobacco (1984)



Dr. Shankar Dayal Sharma, Governor of Andhra Pradesh inaugurated CTRI New Building Complex (1985)

Era of Quality Assurance ... (1987-1996)







Dr. M.S. Chari
Director
(1986-1996)



AICRP Centre at Saraimiran shifted to Araul, Kanpur for research on Hookah tobacco (1987-88)



CTRI RS, Jeelugumilli established for research on FCV tobacco in NLS (1987)



AICRP Centre Berhampur, Odisha started for research on Pikka tobacco (1987-88)



**FCV tobacco variety Hema released for SLS & SBS of A.P. in 1987 -
Yield 1560 kg/ha**



**FCV tobacco variety Bhavya released for KLS in 1988 -
Yield 2000 kg/ha**



**FCV tobacco variety VT-1158 having best quality released for Black
soils of A.P. in 1993 - Yield 2000 kg/ha**



**Burley tobacco variety Backet-A1 released for light soils of A.P. in
1994 - Yield 1800 kg/ha**



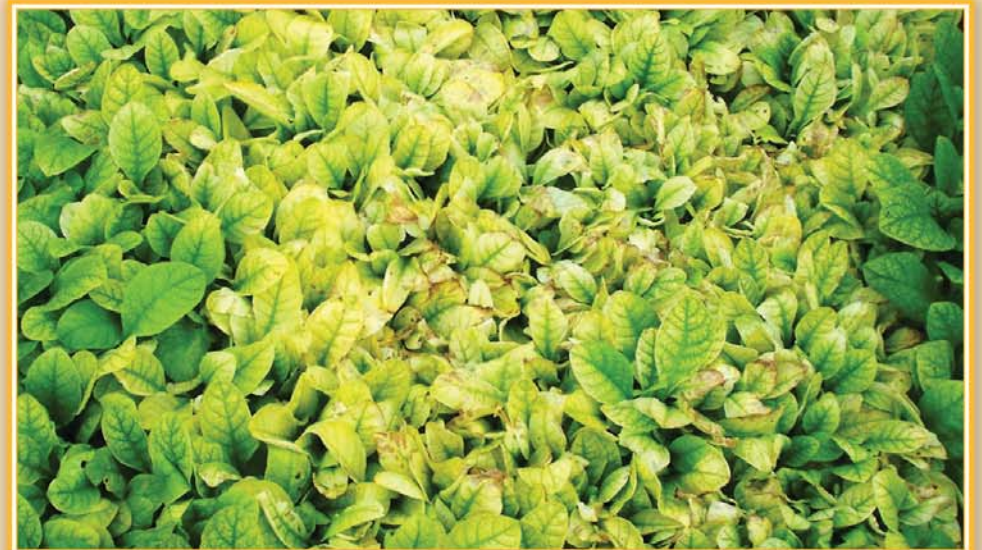
Chewing tobacco variety Meenakshi released for Tamil Nadu in 1992 - Yield 3750 kg/ha



Chewing tobacco variety Vaishali Special released for Bihar in 1993 - Yield 2778 kg/ha



First hybrid in *Bidi* tobacco GTH-1 released for Gujarat in 1995 - Yield 3644 kg/ha



Secondary nutrient application introduced - Magnesium sulphate application @ 45-60 g/10 sq.m. (1987)



New fertilizer application - Dollop method recommended for NLS (1987)



Lalpuram-2 identified as high yielder in HDBRG tobacco (1988)



Third generation suckercide : C₁₀ Fatty alcohol recommended (1988)

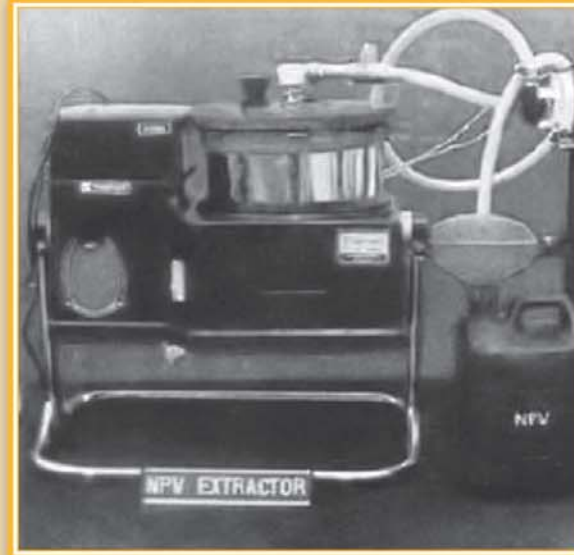
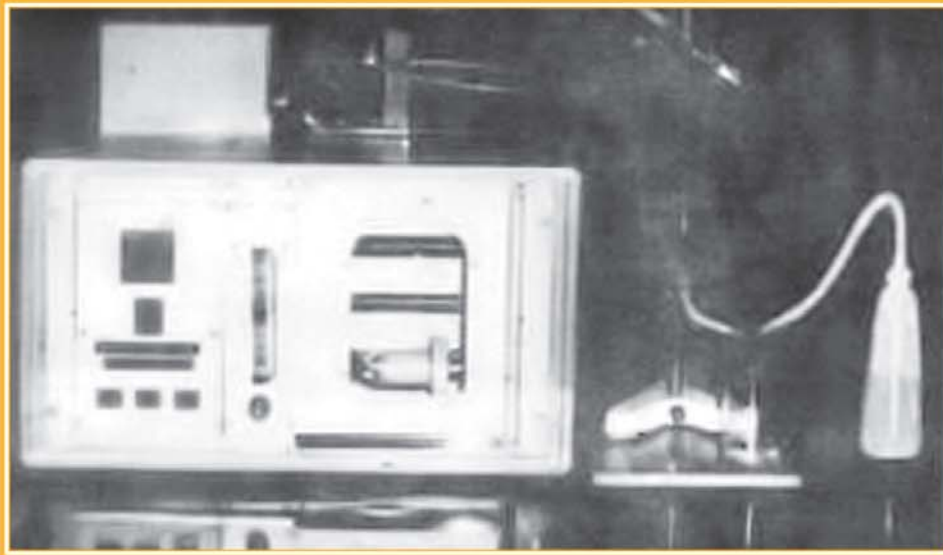


Refined fertilizer application method - Spot application in burley (1991)



Soil solarisation with polythene sheets introduced for control of weeds and nematodes (1994)

Studies on tar initiated with Tar Predictor machine (1992)



Introduction of NPV suspension for pest management (1995)

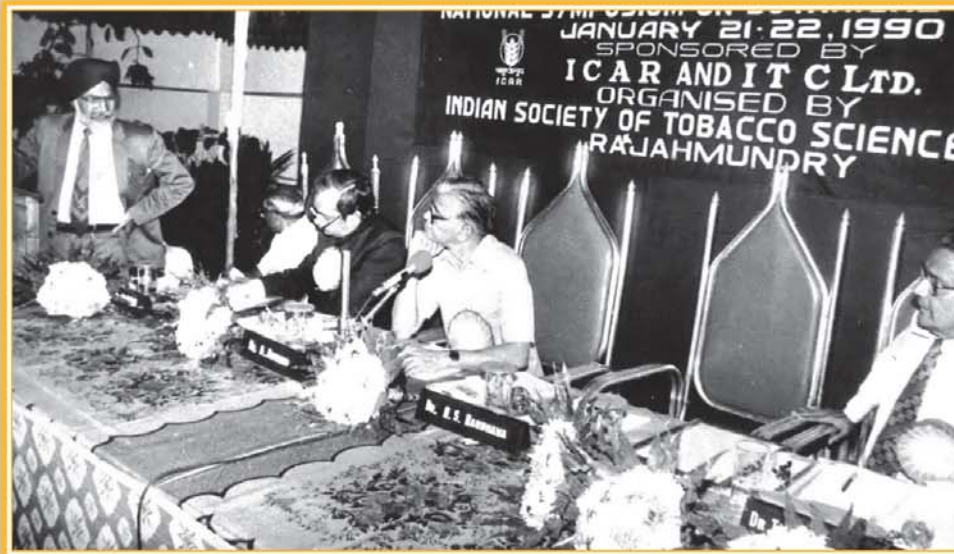
High Performance Liquid Chromatograph introduced for phytochemical analysis (1995)



Research initiated on Tobacco Specific Nitrosamines by using Thermal analyzer (1995)



Acharya N.G. Ranga inaugurated the Golden Jubilee Celebrations of CTRI RS, Guntur. Dr. R.S. Paroda, DDG (CS), ICAR and Sri Vadde Shobanadriswara Rao, Agricultural Minister, Govt. of Andhra Pradesh graced the occasion (1987)



National Symposium on 'Problems and Prospects of Botanical Pesticides' inaugurated by Dr.N.S.Randhava, Secretary DARE & DG, ICAR (1990)



Hon'ble Chief Minister, A.P. Sri K. Vijaya Bhaskara Reddy visited CTRI exhibition stall (1994)



Dr. V.L. Chopra, Secretary, DARE & DG, ICAR graced the World Neem Conference organized by ISTS (1993)



Foreign Delegates from 16 countries (USA, Brazil, UK, Argentina, etc.) visited CTRI RS, Hunsur (1995)



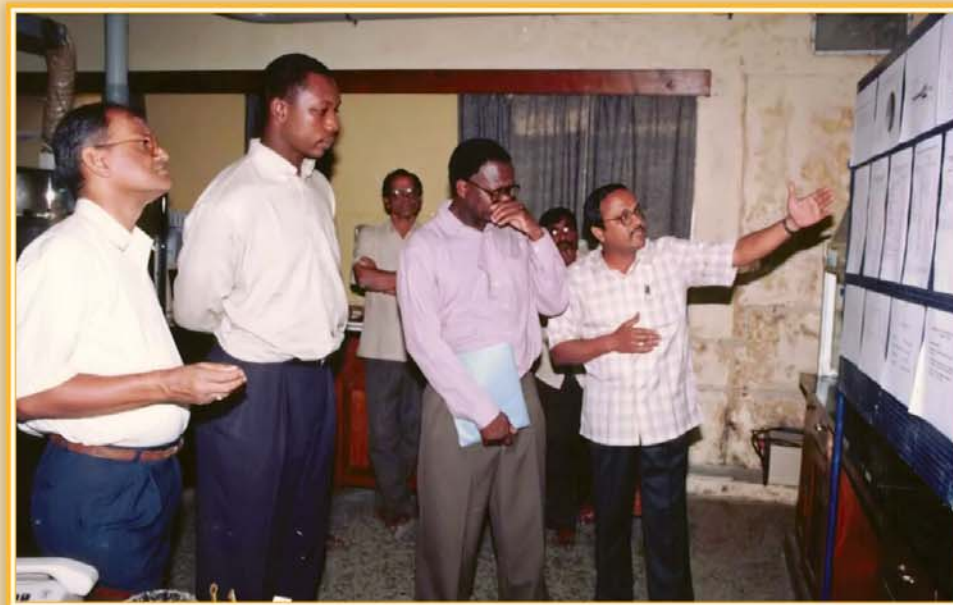
Institute Village Linkage Programme (IVLP) at ICAR-CTRI (1995)



Dr. R.S. Paroda, Secretary, DARE & DG, ICAR unveiling the plaque of Farmers Hostel (1995)



Dr. R.S. Paroda, Secretary, DARE & DG, ICAR visit to ICAR-CTRI inaugurated Division of Crop Improvement, Crop Production and CTRI Scientist Home (1995)



Visit of South African delegates to ICAR-CTRI (1995)



Tobacco Symposium on 'Search for High Quality' (1995)

Era of Modernization ... (1997-2006)







Dr. K. Nagarajan
Director
(1996-2000)



Dr. R.S. Paroda, Secretary, DARE & DG ICAR inaugurated the ARIS Cell (1998)



FCV tobacco variety Kanchan released for NLS of A.P. in 1998 - Yield 2400 kg/ha



Chewing tobacco variety GT-8 released for Gujarat in 1998 - Yield 4469 kg/ha



FCV tobacco variety Thrupthi released for drought areas of Karnataka in 1998 - Yield 1520 kg/ha



Emphasis on Burley production - Optimum time for planting standardised (1996)



Brown spot was a major threat - Propiconazole 25% EC and Difenoconazole 25% EC was recommended for its control (1999)



Standardized package of practices for irrigated *Natu* tobacco (2001)



Abirami and HDBRG were identified as high solanesol content genetic sources (2006)



Unveiling the Golden Jubilee Plaque by Dr. R.S. Paroda, Secretary DARE & DG, ICAR (1997)



Designed and Fabricated Palmyrah Fibre Separator and bagged NRDC Award (1998)



Tobacco Symposium on 'Indian tobacco - Problems and prospects' (1998)



Tobacco Symposium on 'Together we sustain' organized on the occasion of Silver Jubilee of ISTS (2000)

AICRPT Headquarter shifted to Rajahmundry and renamed as AINRPT (1998)

FCV tobacco crop holiday in AP 2000-01

The excess production of tobacco resulted in low prices in auctions, prompted growers to demand a crop holiday for the year 2000-01.

After thoroughly evaluating the market demand and supply situation, the Tobacco Board declared a crop holiday for FCV tobacco in Andhra Pradesh.



Dr. K. Deo Singh
Director
(2000-2006)



FCV tobacco variety Rathna released for KLS in 2001 - Yield 1900 kg/ha



Renovated CTRI Building (2005)



Established AINPT Voluntary Centre on Rustica tobacco at Ladol, Gujarat (2001)



**Bidi tobacco variety GT-9 released for Gujarat in 2001 -
Yield 3077 kg/ha**



**Natu tobacco variety Gajapati released for Odisha in 2002 - Yield
1800 kg/ha**



**Jati tobacco variety Manasi released for West Bengal in 2004 - Yield
1700 kg/ha**



**Chewing tobacco variety Abirami released for Tamil Nadu in 2006 -
Yield 4000 kg/ha**



Trangenics for *Spodoptera* and *Helicoverpa* were screened in the limited field trial (2000)



Viable tobacco based cropping systems were identified for NBS (2001)



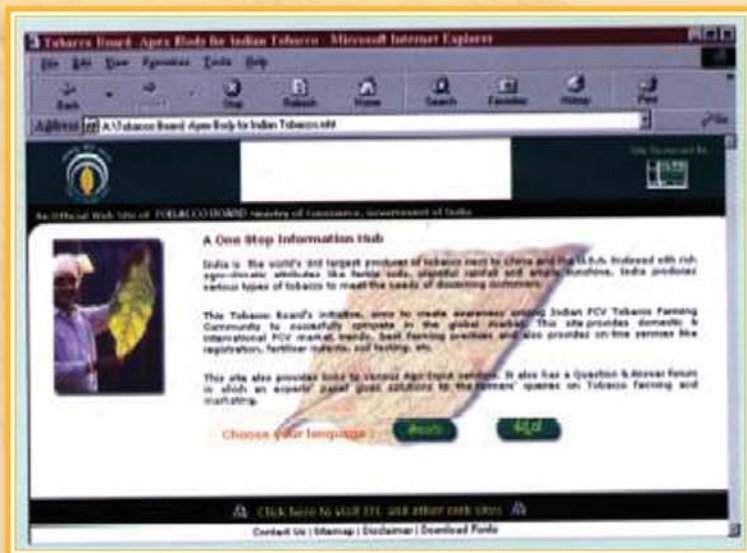
An eco friendly tobacco caterpillar management strategy introduced - Insect bait (2001)



Energy saving intervention - Integrated barn designed (2001)



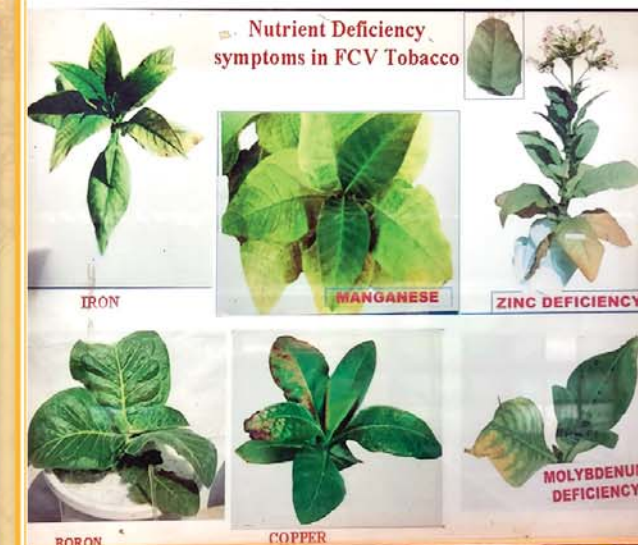
Reducing TSNA - Integrated Nutrient Management with 25% N as organic manure (2002)



ICTs in extension - Tobacco Farmers' Portal (2002)

COTPA-2003

The COTPA (Cigarettes and other Tobacco Products Act), 2003 is an important law made by Govt. of India on prohibition of advertisement and regulation of trade and commerce, production, supply and distribution of tobacco.



Nutrient deficiency symptoms of tobacco (2005)



Decision support system for fertility evaluation developed (2003)



Tray seedling technology advocated to reduce the root-knot infestation in KLS (2003)



Annual moringa - A remunerative inter crop recommended in chewing tobacco (2005)



Technology for water use efficiency - Drip irrigation recommended for NLS (2005)



Dr. Punjab Singh, Secretary, DARE & DG, ICAR visited (2002)



Kisan Mela at Guntur - Sri Ajit Singh, Union Minister for Agriculture graced the occasion (2003)



Golden Jubilee - CTRI RS, Dinahata (2003)



Tobacco Symposium on 'Facing future challenges' at Guntur (2003)



CTRI Farm building, Katheru inaugurated by Dr. Mangala Rai, Secretary, DARE & DG, ICAR (2004)



Dr. K.C. Jain, ADG (CC) graced the Tobacco Symposium on 'Scientific strategies for sustaining growth' at Hyderabad (2005)

India became a signatory to
WHO-FCTC (2005)

The World Health Organization-Framework Convention on Tobacco Control (WHO-FCTC) came into force on 27th February, 2005 with 180 parties including India, the FCTC is a widely embraced treaty. The main objective is to protect the present and future generations from the devastating health consequences.

Era of Innovation ... (2007-2016)







Dr. V. Krishnamurthy
Director
(2006-2012)



**FCV tobacco variety Siri released for black soils of A.P. in 2006 -
Yield 2900 kg/ha**



**FCV tobacco variety FCH 222 released for KLS in
2012 - Yield 2000 kg/ha**

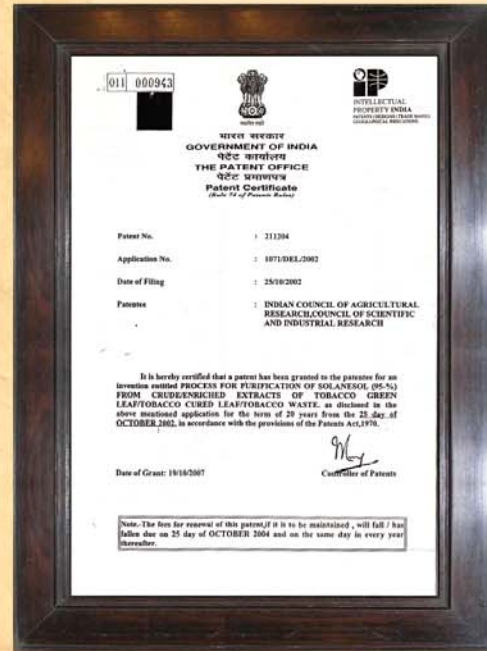


**Natu tobacco variety Bhairavai released for
black soils of A.P. in 2006 - Yield 2600 kg/ha**



**Chewing tobacco variety Abhirami released for
Tamil Nadu in 2006 - Yield 4000 kg/ha**

Process for Purification of Solanesol - Indian Patent No. 211204 (2007)



Technology for fertiliser and water use efficiency - Fertigation with micro sprinklers in nursery (2011)



Best remunerative cropping system for NBS recommended - Maize-Tobacco (2008)



Conservation of energy - Introduction of Turbo Fan (2007)



Viable alternative cropping system - Soybean-Chickpea for NBS (2011)



Technology for fertiliser use efficiency - Drip fertigation in FCV tobacco field crop (2011)



Low dose pesticide - Flubendiamide for control of stem borer in FCV tobacco (2012)



Uniform crop establishment technology - Tray seedling technique recommended for NLS (2012)



**Improved Smoke Machine installed -
Smoke chemistry (2010)**



**Emphasis on low pesticide residue - Gas
Chromatograph Mass Spectrometer
installed (2010)**



**Sustainable production technology - Total
Organic Carbon Analyzer installed (2011)**



Diamond Jubilee Celebrations of ICAR-CTRI, Rajahmundry (2007)



Dr. M. Mahadevappa, Member, ICAR Governing Body, New Delhi graced the Golden Jubilee Celebrations of CTRI RS, Hunsur (2007)



Silver Jubilee of KVK, Kalavacharla (2008)



Diamond Jubilee Celebrations of CTRI RS, Vedasandur (2008)



Tobacco Symposium on 'Challenges and Opportunities' (2009)



Dr. S. Ayyappan, Secretary, DARE & DG, ICAR graced the Platinum Jubilee Celebrations of CTRI RS, Guntur (2011)



National Symposium on Tobacco 'New Frontiers in Tobacco Science' (2011)



Dr. T.G.K. Murthy
Director (Acting)
(2012-2014)



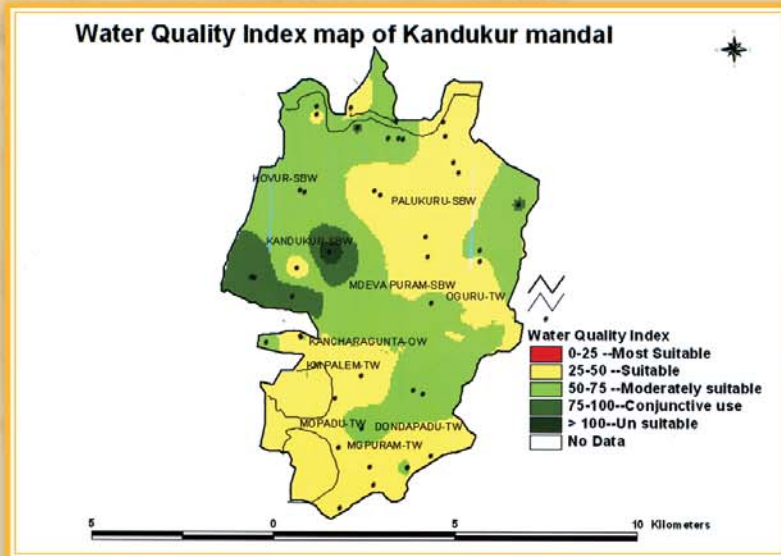
Established Krishi Vigyan Kendra, Kandukur (2012)



**Bidi tobacco variety GABT-11 released for Gujarat in 2013 -
Yield 4175 kg/ha**



**Chewing tobacco variety Kamatchi released for Tamil Nadu in 2013
- Yield 4100 kg/ha**



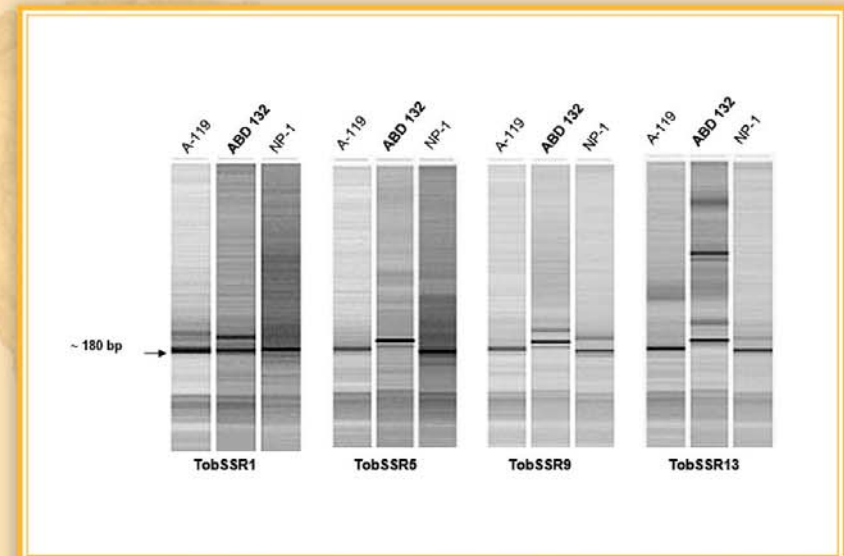
Water quality indices were developed for SLS (2012)



Pre-emergence application of Alachlor recommended for weed management in tobacco nursery (2013)



Coir waste and saw dust briquettes recommended in place of wood for curing FCV tobacco (2014)



DNA fingerprints developed for popular FCV tobacco cultivars (2014)

Era of Transition ... (2007-2016)







Dr. D. Damodar Reddy
Director
(2014-2022)



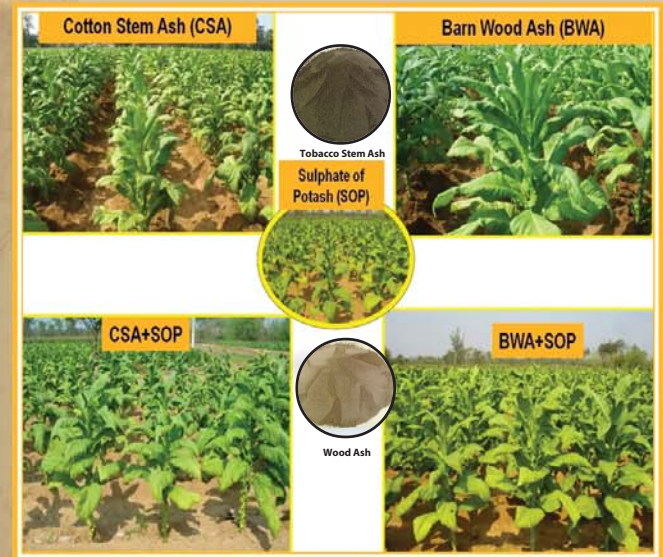
First FCV tobacco Hybrid CH-3 released for NLS in A.P. in 2016 - Yield 2700 kg/ha



FCV tobacco variety CTRI Sulakshana released for black soils in 2019 - Yield 2300 kg/ha



FCV tobacco variety N-98 released for SLS in 2015 - Yield 2200 kg/ha



Recommended crop residue ashes to supplement 50% SOP in FCV tobacco crop (2016)



Climate resilient technology - High density planting under late monsoon conditions in SLS (2017)



Standardization of tobacco seed oil refinement technology with IICT- Tobacco seed oil is as good as sunflower and safflower oil (2016)



Recommended fenamidone 10% + mancozeb 50% @ 0.3% for management of leaf blight in tobacco nurseries (2017)



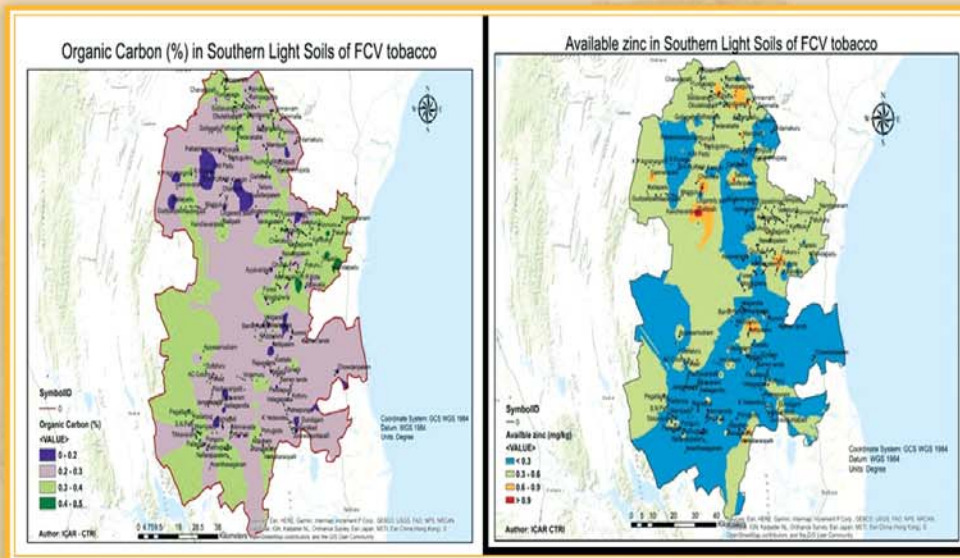
Solar energy intervention - Polycarbonate roof chamber recommended (2021)



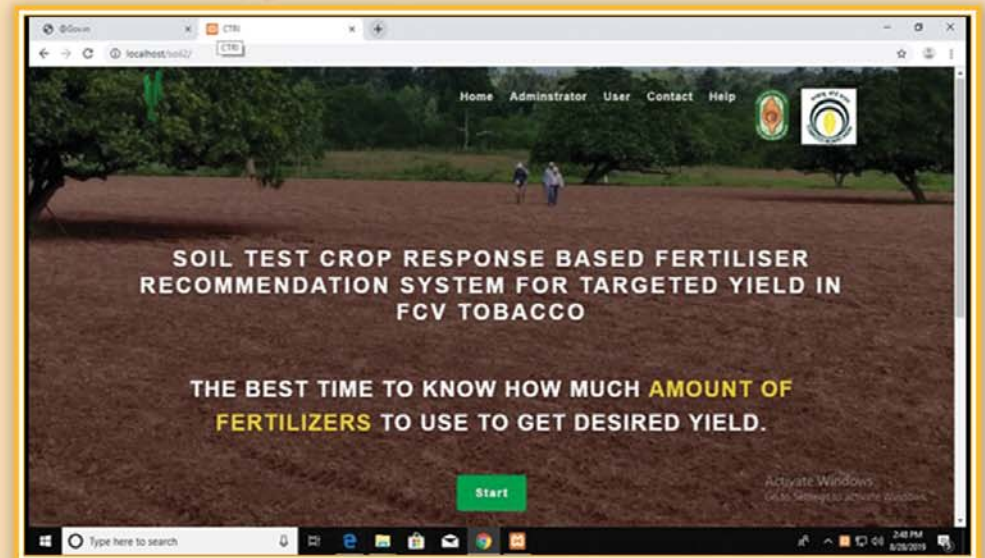
Tobacco Agridaksh : New ICT tool for technology dissemination (2018)



Introduction of Mobile Apps on good agricultural Practices of FCV & Non-FCV tobacco (2019)



Resource characterisation - Soil fertility thematic maps developed for FCV tobacco (2020)



Technology for resource use efficiency - Soil Test Crop Response based prescription equations for fertilizer recommendation in NLS (2022)



DUS descriptors developed for varietal characterisation and protection (2022)



Meeting the farmers needs - Seed distribution through Tobacco Seed Portal (2022)



Mechanisation in seed processing - Introduction of seed thresher (2020)



Reducing the dependence on labour - Leaf stitching machine (2022)

SOIL HEALTH CARD

NAME OF THE LABORATORY : SOIL SCIENCE LAB, ICAR - CTRI, RAJAHMUNDRY

SOIL SAMPLE DETAILS		SOIL TEST RESULTS			
Soil Sample Number		S. No.	Parameter	Test Value	Rating
Sample Collected on		1	pH		
Survey No.		2	EC (dS/m)		
Khasra No. / Dag No.		3	Organic Carbon (%)		
Farm Size		4	Available Nitrogen (kg/ha)		
Geo Position	Latitude: _____ Longitude: _____	5	Available Phosphorus (kg/ha)		
Irrigated / Rainfed		6	Available Potassium (kg/ha)		
GENERAL RECOMMENDATIONS		7	Available Sulphur (kg/ha)		
		8	Available Zinc (ppm)		
1	Organic Manure	9	Available Iron (ppm)		
2	Biofertiliser	10	Available Manganese (ppm)		
3	Lime / Gypsum	11	Available Copper (ppm)		
		12	Available Boron (ppm)		
		13	Soil Chlorides (ppm)		

FERTILIZER RECOMMENDATIONS FOR REFERENCE YIELD (WITH ORGANIC MANURE)									
Sl. No.	Crop & Variety	Reference Yield (kg/ha)	Primary Nutrients		Secondary & Micro Nutrients				
			Nutrient Requirement (N - P ₂ O ₅ - K ₂ O) (kg/ha)	Fertilizer Recommendation Type	Dose (kg/ha)	Nutrient	Recommendation for Soil Application (kg/ha)		
1				Urea/AS			1	Sulphur	
				SSP/DAP			2	Zinc	
				MOP/SOP			3	Iron	
2				Urea/AS			4	Manganese	
				SSP/DAP			5	Copper	
				MOP/SOP			6	Boron	
3				Urea/AS					
				SSP/DAP					
				MOP/SOP					

1 ha = 2.5 acres



Focus on Soil Health - Soil Health Cards distribution initiated (2016)

Focus on standards development - ISO standards for *Bidi* (2017)



National Seminar on Crop Diversification (2016)



XV National Symposium on 'Approaches & strategies for augmenting tobacco farmers' income' (2019)

ICAR constituted a committee for rechristening and broadening the mandate



INDIAN COUCIL OF AGRICULTURAL RESEARCH
Krishi Bhawan, Dr. Rajendra Prasad Road
New Delhi 110 001
(Crop Science Division)

F.No.CS.12/3/2019-IA-III

Dated: 8th June, 2020

OFFICE ORDER

The Competent Authority at the Council has constituted a Committee under the Chairmanship of Dr. H.S. Gupta, Ex-Director, ICAR-IARI, New Delhi and with the following Members to make suggestions on re-christening and broadening the mandate of ICAR-Central Tobacco Research Institute, Rajahmundry, A.P.

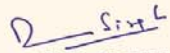
- | | | |
|---|----|------------------|
| 1. Dr. H.S. Gupta, Ex-Director, ICAR-IARI | -- | Chairman |
| 2. Dr. C.L. Acharya, Ex-Director, ICAR-IISS | -- | Member |
| 3. Dr. Mruthyunjaya, Ex-Director, ICAR-NIAP | -- | Member |
| 4. Dr. K.S.Varaprasad, Ex-Director, ICAR-IIOR | -- | Member |
| 5. Dr. P.S.Naik, Ex-Director, ICAR-IIVR | -- | Member |
| 6. Dr. D. Damodar Reddy, Director, ICAR-CTRI | -- | Member-Secretary |

Terms of Reference (ToR) of the Committee:

1. To review the present status and relevance of the ICAR- Central Tobacco Research Institute and assess the scope for broadening its mandate taking into account the unfolding commercial facets of agriculture in general and the need for enhancing farmers' income in particular
2. To suggest an appropriate name and revised mandate for the ICAR-CTRI.

The Member Secretary of the Committee will facilitate the meetings of the Committee and preparation of the report. The Committee will submit its report to the Council as soon as possible, i.e. within one month.

Expenditure on account of TA/DA and Honorarium in this regard will be borne by the ICAR-CTRI, Rajahmundry.


(R.K. SINGH)

Assistant Director General (CC)
Mobile No.:9450930028
E-mail: adgeo.icar@nic.in

Distribution:

1. The Chairman and all the Members of Committee.
2. The Director, ICAR-CTRI, Rajahmundry, A.P.
3. PPS, DDG (CS), ICAR, New Delhi
4. Deputy Secretary, Crop Science Division, ICAR, New Delhi

ICAR - National Institute for Research on Commercial Agriculture (ICAR-NIRCA)

Vision

To emerge as the premier institute of excellence for research on commercial agriculture

Mission

To develop and provide science technology innovation-value chain based vibrant solutions for enhancing profitability, farm income, employment, nutrition and export, while ensuring sustainability of environment and agroecological assets

Mandate

- To conduct research on diverse aspects of commercial agriculture for enhancing farm income, employment, nutrition and export earnings, while ensuring sustainability of environment and agro-ecological assets
- To develop cost-cutting strategies, secondary agriculture technologies and diversified value chain models for increased profitability, competitiveness and sustainability
- To deliver front-line extension services for technology and market intelligence dissemination and organize trainings for stakeholders' capacity and competency building
- To collaborate, coordinate and liaison with producing, processing, value addition, marketing and exporting agencies for achieving its vision

ICAR committee rechristened CTRI as NIRCA

The New Era....







Dr. M. Sheshu Madhav
Director
(November 2022 onwards)



FCV tobacco variety FCR-15 released for SLS in 2023 -
Yield 3000 kg/ha



FCV tobacco variety FCJ-11 released for NLS in 2023 -
Yield 3300 kg/ha



Burley tobacco variety YB-22 released for Vinukonda burley zone
in 2023 - Yield 2900 kg/ha



***Bidhi* tobacco variety ABD-132 released for A.P. in 2023 -
Yield 3100 kg/ha**



**Jati tobacco variety DJ-1 released for West Bengal in 2023 -
Yield 1800 kg/ha**



**Chewing tobacco variety BSR-1 released for Tamil Nadu in 2023 -
Yield 3700 kg/ha**



**ICAR-CTRI became National Active Germplasm (NAG)
centre (2023)**



Precision Agriculture - Agri-drone demonstration (2023)



High throughput seed processing - Modern processing and packing machine established (2023)



Research on Post Harvest Processing - Turmeric processing units established (2023)



Focus on modern biology - RTPCR established (2023)



Dr. T.R. Sharma, DDG(CS), ICAR graced the XII Group Meeting of AINPT (2023)



Stakeholders meet - Yield gap analysis of tobacco strategies and way forward (2022)

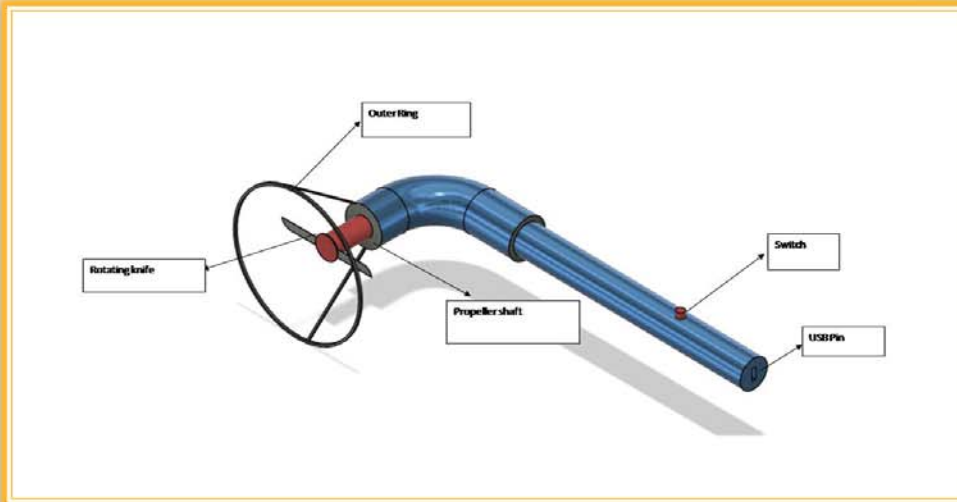


Preparing the road map - Brainstorming session on turmeric and chilli (2023)



Strengthening Industry Linkages - Interaction on accelerating tobacco exports (2023)

Technologies commercialised



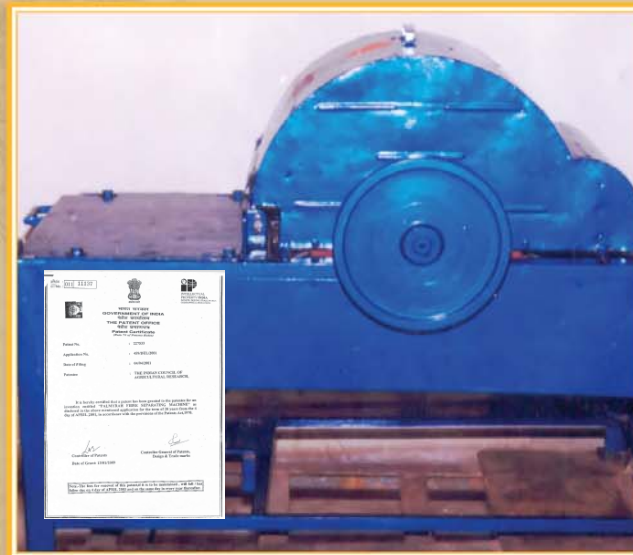
Unique tool for topping - Battery operated topping tool (2023)



Drudgery reduction technology - Modified Bale Pressing Tool (2023)



Accelerating tray seedling technology - Media Pressing Tool (2023)



Unique Palmyrah Fibre Separator (Indian Patent No. 227533) - 9 units sold (2010-2017)



Novel Banana Fibre Extractor - 86 units sold (2010-2017)

Linkages established



MoU with CSIR-Indian Institute of Chemical Technology, Hyderabad



MoU with Yogi Vemana University, Kadapa



MoU with a-IDEA, ICAR-NAARM, Hyderabad



PPP mode - MoU with MR Biochem Pvt. Ltd., Hyderabad

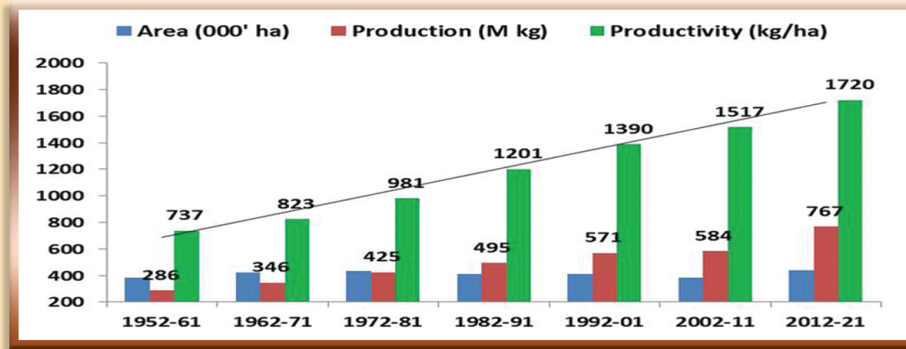


MoU with Adikavi Nannaya University, Rajahmundry

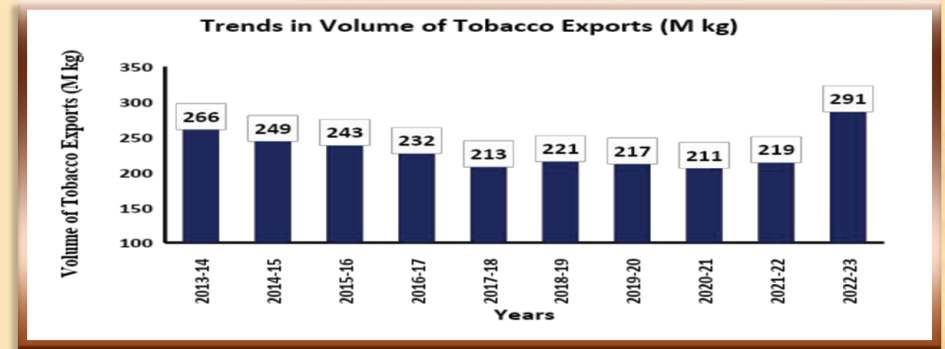


MoU with Alliance One International, Guntur

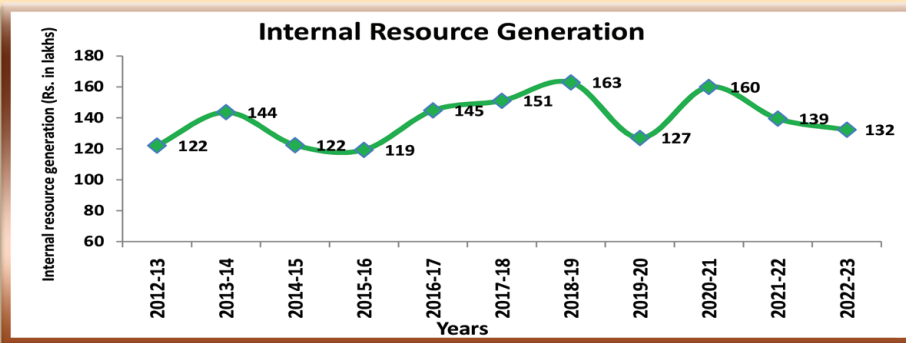
Impact of CTRI over 7 decades



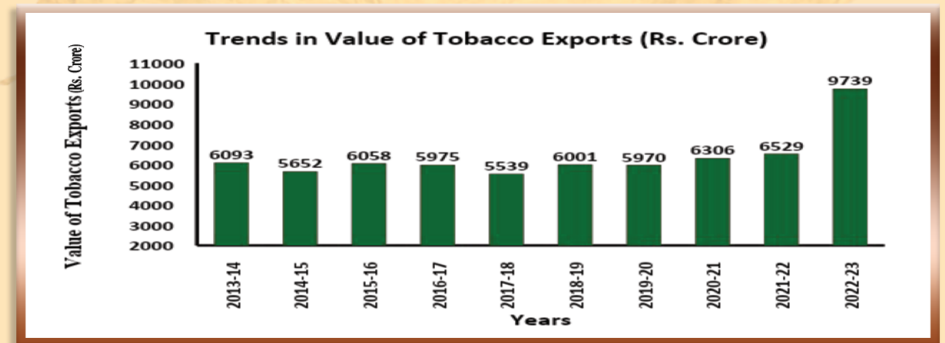
Tobacco Area, Production and Productivity trends



Volume of tobacco exports



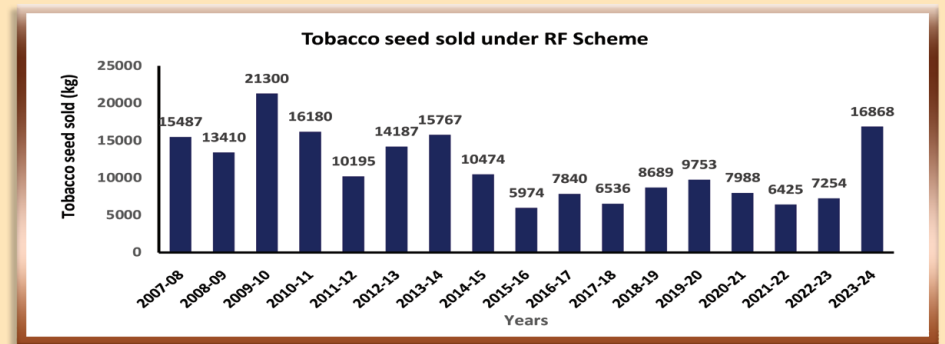
Internal resource generation (2012-2023)



Value of tobacco exports



Training programmes conducted (2016-2022)



Seed sold under Revolving Fund Scheme of CTRI (2007-2023)

Recognitions



Cashless ICAR Institute Award for effectively implementing the cashless transactions (2017)



FTCCI Award for excellence in social welfare initiatives for women empowerment (2019)



Granted ISO 9001: 2015 certificate for the successful implementation of its quality management system (2019)



Certification of Appreciation from ICAR for KRISHI Portal (2019)



Best Invention Award for Palmyrah Fibre Separator (1999)



Second Best KVK Award for CTRI-KVK, Kalavacharla at Global Conference on Women in Agriculture (2012)



Best KVK Exhibition stall award for CTRI-KVK, Kalavacharla at Gandhinagar by CII, New Delhi (2012)

State of art facilities



Real Time PCR



Qiaxcel Capillary Electrophoresis



Particle Accelerator (Gene gun)



Smoking Machine



Auto Analyser



Root Image Analyser



Gas Chromatography Mass Spectroscopy



Briquette Making Machine



Seed Packing Machine



Atomic Absorption Spectrophotometer



Trinocular Stereozoom Microscope

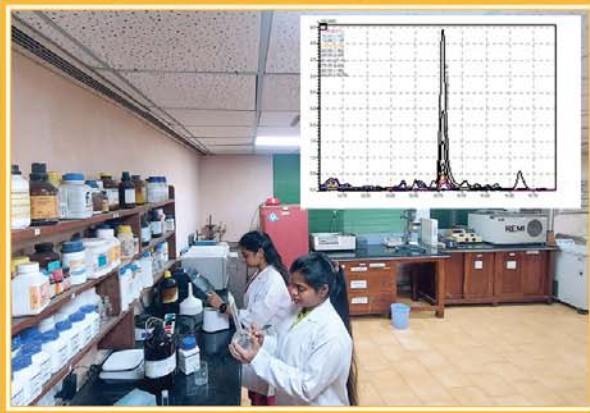


Museum



AKMU

Service functions at CTRI



Pesticide Residue Analysis



Soil and Water Testing



Micro plate reader



Capacity Building



Leaf Quality Estimation



Consultancy Services/ Contract Research

Celebrating Platinum Jubilee ... 13 December, 2023



Organizing International Conference 14-16 December, 2023

ICFTCA-2023

INTERNATIONAL CONFERENCE

SECOND CIRCULAR

Frontiers in Tobacco and Commercial Agriculture
Towards Preparedness for Future Farming

14-16 December, 2023



ICFTCA 2023
INTERNATIONAL CONFERENCE

Venue: NTR Convention Centre,

Adikavi Nannaya University, Rajahmundry, A.P, India

Organized by

INDIAN SOCIETY OF TOBACCO SCIENCE

and

ICAR-CENTRAL TOBACCO RESEARCH INSTITUTE

(ICAR-NATIONAL INSTITUTE FOR RESEARCH ON COMMERCIAL AGRICULTURE)



COLLABORATORS



Way forward ...



Technological innovations for genetic enhancement of commercial crops for doubling export potential

Development of energy efficient technologies with least environmental footprints for sustainable production



Enhancing commercial value of the mandated crops through novel post-harvest produce management and value addition approaches

Exploring innovative extension and market intelligence approaches for efficient marketing and profit realization



Journey continues ...

Concept & Guidance

Dr. M. Sheshu Madhav

Director, ICAR-Central Tobacco Research Institute

Creative Team

Dr. S. Kasturi Krishna

Dr. C. Chandrasekhara Rao

Dr. B. Hema

Dr. Anindita Paul

K. Viswanatha Reddy

Dr. J. Poorna Bindu

Dr. S.V. Krishna Reddy

J. Vasanthi

Md. Elias

Ch. Lakshmi Narayani

I. Arvind

Ch. Sudhakara Babu



Layout & Design: Md. Elias ISBN: 978-81-968708-1-2

© 2023, ICAR-Central Tobacco Research Institute

No part of this publication can be reproduced in any form without the prior permission of the ICAR-Central Tobacco Research Institute, Rajahmundry - 533 105

Printed at M/s. Swapna Art Home, Vijayawada