

# Doyens of Tobacco Research



भाकृअनुप - केन्द्रीय तम्बाकू अनुसंधान संस्थान

**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





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## **Doyens of Tobacco Research**

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## Preface

ICAR- Central Tobacco Research Institute (CTRI), Rajahmundry, AP established in 1947, completed 75 years of yeomen service to tobacco farmers and fraternity. During the last 75 years, it made significant contributions in terms of improving the yield of tobacco crop and subsequent returns to farmers through the collaborative efforts of scientists working at the Institute, State Agricultural Universities and Private Sector. This book deals with the doyens of tobacco research who made significant contributions during the yester years.



The book deals with the significant contributions of the doyens of tobacco research starting from 1947 year onwards. Efforts made to the fullest extent possible to collect the information from different sources. The information compiled based on the records available at the Institute library, Administration and personnel interactions. Authors are thankful to all the personnel that assisted during the compilation process. I am hopeful that the information provided will serve as a tribute to the contributing scientists.

Dated: 09-12-2023

**(M SHESHU MADHAV)**  
DIRECTOR



## Introduction

Realizing the importance of tobacco in national economy, the Govt. of India constituted the Indian Central Tobacco Committee (ICTC) at Madras in 1945. After two years, the ICTC established the Central Tobacco Research Institute (CTRI) at Rajahmundry, Andhra Pradesh in 1947. CTRI was subsequently brought under the aegis of the Indian Council of Agricultural Research (ICAR), New Delhi in the year 1965. Currently, the ICAR-CTRI is one of the premier research institutes functioning under the crop sciences division of the ICAR and has an exclusive mandate of conducting basic, strategic and applied research on myriad aspects of different tobacco types grown in India. It has a network of six regional research stations situated at Guntur, Kandukur, Jeelugumilli (Andhra Pradesh), Vedasandur (Tamil Nadu), Hunsur (Karnataka) and Dinahata (West Bengal). The Regional Stations are catering to the requirements of tobacco farmers in their respective agro-climatic zones by developing improved varieties and crop production technologies.

The ICAR-CTRI is the unique institution in India providing research backup for all the tobacco types (Flue-cured Virginia, chewing, *natu*, burley, cigar filler, cigar wrapper, lanka, HDBRG and hookah). ICAR-CTRI is spearheading the tobacco national programme through the co-ordination of tobacco research with All India Network Project on Tobacco (AINPT) involving various state agricultural universities and private organizations. Since its inception, CTRI has been making impressive contribution to the development of tobacco sector as a whole in the country while collaborating with all stake holders. Thus, effectively serving the farmers of different tobacco producing regions of the country and its stake holders. Over the years, the ICAR-CTRI made outstanding research contributions in various domains including developing a number of improved/speciality varieties with premium leaf quality, and economically viable and eco-friendly agro-technologies for tobacco production, product quality, energy conservation in curing, reduction of harmful constituents in smoke and alternative uses of tobacco. Moreover, the ICAR-CTRI has been providing very crucial and exclusive services to the farmers and other clients in terms of production and supply of pure seed, analytical services and in-season contingency advisory services.

As a result of the concerted research efforts of ICAR-CTRI and others stake holders during the last 75 years, the productivity of various types of tobaccos in vogue is more than doubled (around 2.3 times) compared to those cultivated in 1950s. The productivity potential of FCV reached to a maximum of 3900 kg/ha and non-FCV to around 5000 kg/ha. Total tobacco productivity increased from 725 kg/ha to 1750 kg/ha. This amount to an improvement of about 17 kg/ha/year since 1947. Such phenomenal improvements is conceivable due to the efforts of all the scientists that worked since inception of the institute and scientists from other organizations that collaborated with the institute in advancing tobacco science. At this Amrit Mahostav period (Platinum Jubilee) of the Institute, contributions made by the notable personalities for the tobacco research and development are remembered as "doyens of tobacco research" as their work significantly added to the incremental scientific advancement of tobacco science. We made a sincere effort in collecting all the information on significant contributions made by several retired persons across the disciplines. Any oversights may be due to the ignorance and lack of information, which may please be absolved.



## Dr. Amarnath S.

Dr. Amarnath S, was a renowned tobacco breeder with research experience of 38 years (1974-2012). He worked extensively on genetical and breeding aspects of *chewing* tobacco. He also worked on breeding of *Motihari* tobacco grown in North Bengal and FCV tobacco. His significant contributions include release of eight chewing/hookah tobacco varieties viz., Gandak Bahar, Vaishali Special, PT-76, Torsa, Sona, Prabha, Kamatchi and Lichchavi and two FCV hybrids, CH-1 & CH-3. He published 51 research papers and received Dr. G.S.



Murthy award in 1995 for his research contributions in Chewing Tobacco. He was conferred with Fellow, Indian Society of Tobacco Science (ISTS) in 2011 for his contributions in development of high yielding and disease resistant chewing and hookah tobaccos.

## Dr. Appa Rao K.



Dr. K. Appa Rao was a Cytogeneticist and has more than 35 years (1958-1991) of experience in tobacco research. He was instrumental in developing and releasing high yielding and disease resistant FCV varieties viz., CM-12, Mc Nair-12, Jayasri, Jayasri (MR). He was one of the pioneers in establishing a research farm for light soil tobacco. Carried out extensive work on interspecific hybridization, cytogenetic behaviour of interspecific hybrids, neutronic mutants, multiple polyploids in *Nicotiana*, colchicine induced mutations in a trispecific

*Nicotiana* hybrid, interspecific transfer of resistance to tobacco caterpillar (*Spodoptera litura* F) etc., Assumed duties as Head, Division of Genetics & Plant Breeding in 1982. He was posthumously conferred with Fellow, Indian Society of Tobacco Science (ISTS) in 2003 for his contributions to the farming community through release of promising varieties and original work in cytogenetics of tobacco.

## Bangarayya M.

Shri Bangarayya M. was a Plant Physiologist having 33 years (1953-1986) of research experience. He has published 24 papers in various journals. He worked on various aspects of seed germination, storage, mineral nutrition for the nursery and field crop, foliar nutrition, establishment of seedlings in the field and suppression of suckers. He also focussed on interrelation of potassium and chlorine supply on the leaf burn of flue-cured tobacco. Farmers even today are using the technology developed by him i.e. use of C 10 fatty alcohols for sucker control.



## Dr. Bhat N.R.

Dr. Bhat N.R. served as the Director of the Institute during 1955-1958. His specialisation was Plant Breeding. He was involved in intervarietal crosses, cytogenetic studies of *Nicotiana* hybrids, and improving tobacco cultural methods. He identified that moisture stress during the growth period is the main reason for poor yield and quality. He found topping in Delcrest variety improves the leaf complexion, yield and quality than Harrison Special. He also studied the fasciation of stamens in interspecific *Nicotiana* hybrid, male sterile mutant in *N. tabacum* and germination of tobacco seeds. He has published 24 papers in various journals.



## Dr. Chakraborty M.K.



Dr. Chakraborty M. K. was an Organic Chemist, worked at ICAR-CTRI and BTRS, Anand, known for his outstanding contribution in alternate use of tobacco viz., nicotine sulphate, aroma-bearing compounds, solanesol, leaf protein, etc. He has more than 30 years of research experience in tobacco starting from 1964. His contributions in the area of chemical studies on Lanka tobacco and its smoke, influence of tobacco waste extract on solubilisation of rock phosphate, effects of ageing on FCV tobacco are note worthy. He developed technology for reduction of tar in bidis, methods for determining the leaf strength and elasticity of tobacco leaf. He published 50 research papers in the peer reviewed journals. He was conferred with Fellow, Indian Society of Tobacco Science (ISTS) in 1995 for his contributions towards tobacco research.

## Dr. Chari M.S.

Dr. Chari M.S. was an Entomologist, and he served as Director, ICAR-CTRI during 1986-96 for a period of 10 years. His specialisation was on insecticidal activity of neem extracts. He was associated with the release of a high yielding, black shank and root-knot nematode resistant and semi-flavourful tobacco variety Kanchan occupied 90% area of the Karnataka Light Soils and Northern Light Soils during 2010s. The Indian Council deputed him to study the tobacco scenario at Cuba. As a Director he was instrumental in overall development of the Institute and enhancing the Indian tobacco production. He visited countries like Zimbabwe, Brazil, Australia, Kenya, Malaysia and USA for understanding the demand of the tobacco at International level. He published 150 research papers and received prestigious awards viz., Dr. G.S. Murthy, Sri. K. Devappa, ITA and ISTS Gold medal for leadership. He was the President, ISTS during 1996-97, conferred FISTS for outstanding contribution to tobacco science.



## Dr. Damodar Reddy D.

Dr. Damodar Reddy, Dendi is an eminent Soil Scientist and working in ICAR since 1994. Served ICAR-CTRI as Head, Division of Crop Chemistry & Soil Science during 2009-2014 and Director, ICAR-CTRI during 2014-2022. He has made significant contribution in enhancing the potassium fertilizer efficiency in NLS tobacco, crop residues as source of potassium, tobacco stalk biochar as soil amendment, soil fertility thematic maps and development of prescription equations for fertiliser recommendations in FCV tobacco. He published around 160 research papers and other publications. He is associated in developing and releasing of ten FCV and non-FCV tobacco varieties (CTRI Sulakshana, LT-Kanchan, NBD-209, Nandyala Pogaku-1, GABTH-2, GCT-5, DJ-1, CTRI Shresta, CTRI Naveena and Nandyala Pgaku-2) during his period. As a Director, he is involved in reducing the cost of cultivation in research farms.



## Dr. Deo Singh K.



Dr. Kapil Deo Singh was an accomplished tobacco agronomist and has a research experience of 26 years in different tobacco types viz., FCV, chewing, cigar, *motihari*, cigar wrapper, cigar filler, cheroot, hookah etc. grown in India. His research contributions include profitable tobacco based cropping systems, nutrient and water management, topping & de-suckering, integrated nutrient management and reduction of Tobacco Specific Nitrosamines etc. He assisted the farmers of Bihar, AP, West Bengal and Tamil Nadu with release of improved tobacco varieties with superior yields and quality along with higher net returns. As a Director (2001-2005) he could successfully lead his team in conducting research in tailoring the tobacco plant for higher yields along with reducing the harmful substances. A total of eight (Siri, Hemadri, Manasi, Lichchavi, Vaishali Special, Torsa, Lanka Special, Bhairavi) FCV and non-FCV varieties were developed and released during his service. During his tenure, the laboratories were upgraded with state-of-the art facilities and renovated the main building at Headquarters and Regional Stations to give a corporate look. He has published 59 papers in various journals. He was conferred with Fellow, Indian Society of Tobacco Science (ISTS) in 2003 for his contributions in developing and standardizing remunerative production technologies. He was instrumental in improving the financial status of Indian Society of Tobacco Sciences. During his Directorship, Institute maintained cordial and fruitful relationships with other stake holders.

## Dr. Gopalachari N.C.

Dr. Gopalachari N.C. was a Biochemist joined at ICAR-CTRI in 1952 and later served as Director of ICAR-CTRI during 1972-85. He worked on different tobacco types such as FCV, *Bidi*, *Natu*, *Chewing*, *Lanka* tobacco. He established the objective quality criteria of FCV tobacco assessment for the first time. He has done extensive work on the phosphorus nutrition of FCV tobacco in different soils. He is a pioneer in the field of FCV tobacco curing, developing improved barns and identified alternate cheaper fuels sources for curing. Other monumental contributions were Infra-red curing, low-profile barn, solar curing barn, briquetting of agricultural waste materials for curing, etc. His other noteworthy contributions are studies on the germination of tobacco seeds, a rapid test for determining nicotine in green tobacco leaf, distinguishing 'saline' Tobacco, chemical changes during storage of lanka tobacco, etc. He is associated with the development and release of two varieties viz., Hema and Viswanath. He has about 165 published scientific papers to his credit and also authored the book entitled "Tobacco" which is a reference for many researchers. He was conferred with Fellow, Indian Society of Tobacco Science (ISTS) in 1995 for his contributions in overall development of tobacco research in India. As Director, Dr. Gopalachari was instrumental in developing the main Institute and its sub-stations to great heights of scientific achievement.



## Dr. Gopinath D.M.



Dr. Gopinath D.M. worked at ICAR-CTRI as Botanist from 1953-1972 and served as Director from 1964-1974. He made significant contributions in the field of tobacco genetics and plant breeding. He studied the morphological classification of chewing tobaccos of the Madras State. He was involved in the exploratory studies on the possibilities of wrapper tobacco cultivation in hill stations and worked on cytology of a few low sterile plants in *N. tabacum*. As Director he reoriented the research programmes with special emphasis on developing high yielding tobacco cultivars suited to different agro climatic conditions. He developed and released three FCV tobacco varieties (CTRI Special, Dhanadayi and Kanakrabha). He also initiated research on breeding disease resistant varieties with particular reference to powdery mildew disease. Out of the 44 research papers published by him 14 were in reputed foreign journals.

## Dr. Gunneswara Rao S.

Dr. Gunneswara Rao S. was an Entomologist and joined the council service in 1981. He has an experience of 33 years in tobacco research. His contribution was mainly on biological control of *S. litura* and *H. armigera* with nuclear polyhedrosis virus, insecticide resistance management, integrated pest management and arthropod biodiversity. Developed an extractor for NP virus. Studied the tri-trophic interactions in pest management. He worked on ecotoxicology of insecticides against natural enemies of tobacco pests. He published 60 research papers.



## Dr. Harishu Kumar P.



Dr. Harishu Kumar P. joined ICAR service in 1974 and had a research experience of 37 years. He retired as a Head, Crop Production Division, ICAR-CTRI in 2011. He worked on FCV tobacco production technology, cropping systems, crop nutrition, irrigation and drainage, alternate use of tobacco through improved genotypes and organic production of FCV tobacco. He was associated in release of three tobacco varieties viz., Hemadri, lanka special, Bhairavi. He was conferred with FISTS for his contribution to tobacco research and service to the society

as Editor, Tobacco Research Journal. He bagged many awards viz., Sri K Devappa Award-1995 and 1998 and ISTS Award 2003 conferred by ISTS. He published 112 research papers and 15 status papers.

## Dr. Hussaini S.S.

Dr. Hussaini S.S. was a distinguished Nematologist and had about 30 years of research experience. He worked on Root knot nematodes associated with FCV tobacco and identified the existence of race 2 in *Meloidogyne incognita* and *M. arenaria* in light soils of Karnataka. He developed cultural and soil solarisation techniques for root-knot management. He was associated in the development of FCV tobacco varieties, Kanchan and Bhavya for KLS region. Served as Officer-in-charge, ICAR-CTRI RS, Hunsur for two years and has published 60 research papers.



## Joshi B.G.

Shri Joshi B.G. was a distinguished Entomologist worked at ICAR-CTRI and had 33 years (1954-1987) of vast research experience. He has done excellent work on the use of botanicals as pest control agents and recommended the use of pongamia cake against ground beetles and neem seed kernel suspension against tobacco caterpillar. Initiated the research on biological control of *S. litura*. He studied on Leaf curl menace in tobacco. Published 64 papers in various reputed Scientific Journals. He also served as Director-in-charge of the Institute for a period of six months.



## Dr. Jaisani B.G.



Dr. Jaisani B.G. was a Plant Breeder. He has joined Anand Agriculture University in the year 1957 and has an experience of about 35 years. He served as Project Coordinator tobacco for 3 years. He bred number of *bidi* and *rustica* varieties. He was instrumental in the development and release of seven Non-FCV tobacco varieties viz., GT-7 (Drought tolerant), GT-5 (Tolerant to root-knot disease), GT-4 (Tolerant to moisture stress and leaf burn disease), GT-8, GT-6, GC-1 and GCT-2 (High yielding). As a PC he is involved in the overall improvement of various tobacco types. He has more than 40 publications.

## Dr. Kadam B.S.

Dr. Kadam B.S. was a Botanist, the first Director (1947-1954) of ICAR-Central Tobacco Research Institute, Rajahmundry. He was instrumental for establishing the institute at Rajahmundry as this region is suitable to take up on flue-cured tobacco and lanka tobacco. He introduced the FCV tobacco variety Chatham in 1950. As the first Director of the Institute, established the infrastructure for initiating research on FCV and Lanka tobaccos and has given emphasis on the genetic investigations, developing suitable package of practices for raising of seedlings, transplanting in the field and finding a suitable method for suppressing suckers. He has published 23 research papers in various journals. Under his leadership, the institute developed a seed processing method of flue-cured tobacco which resulted in better germination than the imported seed.



## Dr. Kameswara Rao B.V.

Dr. Kameswara Rao B.V. was a Chemist specialised in tobacco smoke analysis and have more than 30 years' experience in tobacco research starting from 1960. He did extensive research on tobacco smoke composition, polyphenolic constituents of tobacco, determination of total nitrogen in tobacco, reduction of total particulate matter and nicotine in cigarette tobacco blends etc. Some of his other research works include water culture for improving grades of FCV, determination of total soluble salts in the black clayey soils by conductivity method, effect of chlorides on the yield and quality of FCV, phosphatic fertilization of FCV using P32 labelled superphosphate, comparative evaluation of quality of FCV, methods for determining the available potassium status of tobacco soils, chemical studies on Lanka tobacco and its smoke, etc. He published 50 research articles.



## Dr. Krishna Murthy G.V.G.



Dr. Krishna Murthy G.V.G. was a Plant Pathologist contributed immensely to the management of root-knot nematodes and *Orobanche*. He worked on weed hosts and systemic nematicides for the management of root-knot nematode and identified the parasitization of *Sclerotium rolfsii* on *Orobanche*. He developed a hand tool named CTRI kathua for the mechanical removal of *Orobanche* in fields. His research work on *Orobanche* is internationally renowned. His scientific contribution towards control of this dreaded pest on tobacco is acknowledged nationally and internationally. He published 50 research articles. He was conferred with Fellow, Indian Society of Tobacco Science (ISTS) in 1995 for his contributions in overall development of tobacco research in India.

## Krishna Murthy S.

Shri Krishna Murthy S. was an Agronomist and worked for about 25 years (1952-1977) at various capacities at ICAR-CTRI, Rajahmundry and other Tobacco Research Stations, Vadasandur & Guntur. He contributed to the agronomy of FCV tobacco in black soil, light soils and Burley tobacco in the agency area. He developed practices like spot application of fertilizers, foliar application of urea and neem oil for sucker control. These practices were widely adopted by the farmers through Lab to Land program. He was also contributed in the development and release of nine varieties viz., VT-1158, Gauthami, Meenakshi, Maragadham, Bhagyalakshmi, Thangam, Sendarapatty Special, Bhavani Special) which includes FCV and especially chewing & cheroot. Under his guidance, Chewing tobacco research station, Vadasandur has gained popularity in the farming community. He has published 29 research papers in various journals.



## Dr. Krishna Murty I.V.G.

Dr. Krishna Murty I.V.G. served the institute for about 30 years (1952-1982). As an in charge of demonstration unit, he was successful in transferring the research results to the tobacco growers by different demonstrations. He also served as in-charge of the training, seed & seedlings production schemes at the institute. Under his leadership, the scheme earned a good name for the quality seedlings supplied to farmers. He has published 18 research papers in various journals and about 50 extension articles. He was considered as a friend, philosopher and guide of the tobacco farmers.



## Krishnamurthy K.V.



Shri Krishnamurthy K.V. was joined ICAR-CTRI in 1950 as Cytological Assistant and served the Institute for nearly 29 years. He developed good number of fertile amphiploids, aneuploids and inter-specific hybrids in genus *Nicotiana* that formed the basic cytogenetic material. Through mutation breeding with neutron radiation, created several mutants of practical and academic value there by established a mutant gene bank as source breeding material. During 1970-1979 he intensified work on varietal breeding in FCV tobacco and developed several lines resistant to mosaic, powdery mildew and black shank in FCV and non-FCV tobaccos. He developed a total of 7 FCV disease resistant and tolerant varieties viz., Swarna, Godavari Special, CTRI Special, CTRI Special (MR), Jayasri, Dhanadayi and Kanakaprabha. He has published 35 research papers.

## Dr. Krishnamurthy V.

Dr. Krishnamurthy Veeranki, a renowned soil scientist served the institute for 36 years. He was the director during 2006-12. He developed first time soil fertility thematic maps of FCV tobacco production zones. His path breaking contribution was identification of potassium deficiency for the first time in FCV tobacco grown in light soils and its management strategy. Also, studied the irrigation water quality of tobacco areas, nutrition contents of tobacco plant and its parts as influenced by fertilization, salinity survey in flue-cured tobacco soils of Andhra Pradesh, effect of NPK fertilisation on the yield of burley tobacco grown in AP, available iron status and factors influencing its availability in flue-cured tobacco soils of AP, natupogaku grading, etc. As a Director, he was instrumental for the all round development of the Institute. He was associated in release of four (FCV and non-FCV) tobacco varieties viz., FCH 222, Meenakshi CR, Manasi, Torsa. He is popularly known as "Potash Krishnamurthy" in farmer and trade circle. He has published 151 research articles in both National International Journals.





## Dr. Lakshminarayana R.

Dr. Lakshminarayana Rallapalli was a distinguished Plant Breeder with a vast experience of 39 years in the tobacco breeding. Served as a Project Coordinator, All India Coordinated Research Project on Tobacco (AICRPT) at BTRS, Anand. Developed 6 high yielding FCV varieties (LT-Kanchan, Siri, Thrupthi, VT-1158, Gauthami, CTRI-Special) and 5 *bidi* tobacco varieties (ABT-10, MRGTH-1, GT-9, GTH-1, GT-7), 6 chewing tobacco varieties (Meenakshi CR, Kaviri, Abirami, Manasi, GT-8, Meenakshi) and 3 *Rustica* tobacco varieties (Dharla, GCT-3, GCT-2). As a PC, BTRS, Anand he strengthened the research on non-FCV tobaccos in India and has a wide knowledge on myriad aspects of different tobaccos. He was a Fellow of the Indian Society of Genetics and Plant Breeding and published more than 100 research papers.



## Dr. Mani M.



Dr. Mani M. specialized in Genetics & Plant Breeding joined as scientist at CSIR-Central Institute of Medicinal and Aromatic Plants, Kodaikanal, Tamil Nadu (1986-1990). Later served at ITC Ltd - Agri Business Division- ILTD as Plant Breeder (1990-92 & 1997-2002), Regional Manager of Palmtech India Ltd (1992-1997). He was in tobacco research and development for a period of 32 years and served as Chief Scientist (2003-2018), ITC Ltd - ABD- ILTD. Developed First Series of CMS Hybrids (CH-1 & CH-3) in FCV Tobacco in India and standardized the seed production facility. He served the Indian Society of Tobacco Science (ISTS) in various capacities. He popularized the hybrid cultivation through tray nursery system. He has a total of 50 publications. He was conferred with Fellow, Indian Society of Tobacco Science (ISTS) in 2005 for his contribution for developing high yielding varieties.

## Mathrani D.I.

Shri Mathrani D.I. was an accredited Plant Pathologist who worked in ICAR-CTRI during 1950's. He identified Anthracnose disease caused by *Collectotrichum tabacum* for the first time in India in the FCV tobacco. His most significant research contribution to the tobacco farming community is recommendation of the control of Damping off and other diseases in flue-cured tobacco. He has a total of 40 publications.

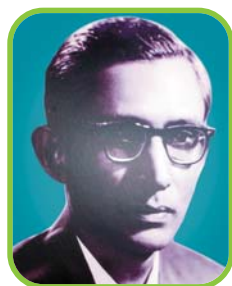


## Dr. Murthy B.R.

Dr. Murthy B.R. was renowned Plant Breeder joined ICAR-CTRI in 1948 along with Dr. B.S. Kadam, the first Director. He was one of the early research staff of the Institute who contributed to the genetics of tobacco. During his 13 years of service at the Institute, he studied biometrical genetics and breeding behaviour of tobacco crop. He made multiple crosses for the first time for genotype improvement of tobacco. He developed initial 3 varieties, one Flue-Cured Virginia and 2 *Natu* tobaccos. His foremost research contributions include selection methodology for breeding light soil tobacco, inheritance of filament colour in tobacco, male sterility in *N. tabacum*, genetic variability in FCV and *Natu* tobaccos, components of genetic variation of flowering time, leaf number, grade performance and leaf burn and partial chlorophyll deficiency in *N. tabacum* L. He has published 14 research papers in various journals.



## Dr. Murthy G.S.



Dr. Murthy G.S. served as 3<sup>rd</sup> Director of the Institute from 1958-1963. He worked in different capacities at IARI, for 21 years before joining as Director, ICAR-CTRI, Rajahmundry. He developed the FCV tobacco varieties Kanakaprabha, Dhanadayi and *Natu* tobacco variety DR-1. His most important research contributions include development of Cigar Wrapper, Hookah and Chewing tobaccos in Bihar apart from the Flue-cured tobacco. He has published a total of 45 research papers in different journals. He introduced two Awards on his name in the

Indian Society Tobacco Science one is for best research in genetics and breeding (G.S. Murthy Award in 1986) and the other for any other disciplines of tobacco research (G.S. Murthy Award in 1995).

## Dr. Murthy V.N.

Dr. Murthy V.N. joined ICAR-CTRI Rajahmundry as first Statistician in the year 1952. He was responsible for evolving suitable statistical methodology for conducting various field experiments viz., Agronomy and Plant Breeding, layout design and interpretation of the experimental collected data from the experiments at the Institute and its Regional Stations. He was deputed from the Institute for advance studies in Statistics at U.S.A. under the Full Bright Scholarship. He was associated with this Institute for a short period of 5 years. He improved the Statistical Section and contributed several scientific papers.



## Murthy N.S.

Murthy N.S. was an Agricultural Statistics scientist joined ICAR service in 1976 at ICAR-CTRI, Rajahmundry and has a work experience of 23 years in CTRI and 10 years in GB Pant University. He was associated in the conduct of various experiments as per the designs of statistics, developed the formula for grade index, identification of best lines based on cured leaf data collected from the scientists etc. He was the Secretary, Indian Society of Tobacco Science (ISTS) and Editor of Tobacco research Journal. He published 38 research papers.



## Dr. Murthy P.S.N.



Dr. Murthy P.S.N. was an Organic Chemist with 20 years of experience in tobacco research at ICAR-CTRI, Rajahmundry. His contribution in the tobacco research includes development of natural products from Neem, pheromone traps in Tobacco pest control, flavour chemistry in lanka tobacco, and structural elucidation of organic compounds. He was associated in the development of a recently released low TAR FCV tobacco variety, LT-Kanchan. He has a total of 35 publications.

## Dr. Murthy T.G.K.

Dr. Murthy T.G.K. was a distinguished scientist in Genetics and Plant Breeding having 31 years (1985-2016) of ICAR service. He joined ICAR-CTRI, Rajahmundry in the year 1995. He was an expert of cytogenetics, genetics, biotechnology and conventional breeding of crop varieties. He has done extensive work on interspecific hybridization in tobacco and groundnut crops. He developed high yielding, pest and wilt resistant FCV tobacco varieties/hybrids (CTRI Sulakshana, CH-3, LT-Kanchan, CH-1, FCH-222, Siri, CTRI Naveena, CTRI Shresta), Bidi (NBD 209, Nandyala Pogaku-1) & Chewing (Abirami CR, Kamatchi), burley tobacco varieties (Vijetha) & Chewing varieties (Yasini & DJ-1). He was Director (Acting) of this Institute from 2012 to 2014. He also contributed to the development of Computer databases for *Nicotiana* Species and tobacco germplasm. He made significant contributions to Indian Society of Tobacco Science (ISTS) in various capacities. He published a total of 163 research papers. He was conferred with Fellow, Indian Society of Tobacco Science (ISTS) in 2009 for his contribution for improving the yields of tobacco.



## Dr. Nagarajan K.

Dr. Nagarajan K. joined as Senior Scientist and served the Institute for 23 years. He served as the Director ICAR-CTRI during 1996 to 2000. He has done extensive studies on *Orobanche* and TMV diseases. Studied the effect of prophylactic sprays of leaf extracts on the infection of tobacco by the Tobacco Mosaic Virus. Enumerated the source of resistance in *Nicotiana* species to important tobacco diseases and reported the occurrence of a strain of etch virus on tobacco. He worked on collar rot, root knot nematode in nursery, weed hosts, powdery mildew disease, chemical control of damping-off (using Redomil), anthracnose, frog-eye spot diseases of tobacco in seedbeds. Associated in the release of TMV resistant FCV tobacco varieties - Jayasri MR, CTRI Special MR, VT-1158 and a Burley tobacco variety Banket A1; and Black Shank resistant FCV tobacco varieties - CM-12 (KA) and Kanchan (semi-flavourful). He published a total of 154 scientific & popular articles and bulletins on tobacco plant protection. During his Directorship of ICAR-CTRI, tobacco research marched ahead and Institute maintained good relationships with stake holders. He was conferred with Fellow, Indian Society of Tobacco Science (ISTS) in 1995 for his contribution for imparting resistance to varieties for TMV and Black shank.



## Nageswara Rao C.R.



Shri Nageswara Rao C.R. was a statistician having 35 years of experience in ICAR-CTRI (1974-2000). He established the ARIS Cell in the year 1998, which was subsequently renamed as AKMU. He assisted in utilization of UNIX, C and other Databases for the statistical analysis of the data from various experiments. Associated in fixing the seed rate for growing tobacco nursery, development of software on agricultural pest information system, etc. He served the ISTS in various capacities. His efforts and active participation in the society activities strengthened the society financially. He has published 27 research papers in various journals. He was conferred with Fellow, Indian Society of Tobacco Science (ISTS) in 2000 for his active participation in society activities.

## Dr. Nageswara Rao K.

Dr. Nageswara Rao K. a renowned Plant Physiologist having 37 years (1978-2016) of research experience. His contributions are noteworthy in the area of seed physiology, seed storage, plant growth hormones, plant nutrition and plant metabolism. Major techniques developed by Dr. Rao are inexpensive tobacco seed storage technique for 27 years by keeping seed moisture below 4%, Decanol formulation for Sucker control and identification of major nutrient deficiency symptoms. He has published 36 research papers in various journals. He was associated in the development of a FCV variety LT-Kanchan. He served the ISTS in various capacities and is a Fellow of ISTS.



## Naidu S.K.

Shri Naidu S.K. was a versatile extension scientist with 38 years (1974-2012) of experience in tobacco research. As an extension scientist he was instrumental in evaluation, demonstration and transfer of technology developed by ICAR-CTRI to tobacco farmers of Andhra Pradesh. He was involved in various technology dissemination activities viz., evaluation and popularization of released technologies, studies on extent of adoption and their Impact in the real farm situation, Organized large number of Kisan Melas, farmer-scientist interaction meets, farmer training programmes, etc. He published 34 bulletins and pamphlets in local languages on good agricultural practices of tobacco for the benefit of farmers. He developed very good rapport with the farming community, used to mingle with the farming community as a part of their family and assisted the Institute in maintaining cordial and fruitful relationships with farmers. He used to visit regularly to different villages for updating the scientific knowledge in each zone, he became one of the house hold name among the tobacco farmers of Andhra Pradesh.



## Dr. Narasimha Rao C.V.



Dr. Narasimha Rao C.V. an eminent Organic Chemist. During his 26 years of service he made significant research contribution in the area of quality control, tobacco leaf and smoke chemistry. He has equipped the laboratories with sophisticated equipment viz., GC with different detectors, HPLC and GC-TEA, Smoke analyser for analysis of pesticide residues, smoke constituents analysis, phytochemicals, bioactive compounds in botanicals, tobacco aroma and Tobacco Specific Nitrosamines (TSNA). He was instrumental in establishment of sophisticated smoke research laboratory in compliance to CORESTA/ISO standards for smoke analysis. Involved in the development of the processes for recovery of solanesol, nicotine, organic acids, proteins and seed oil from tobacco. He was associated in the release of nine FCV & non-FCV tobacco varieties/hybrids viz., CTRI Sulakshana, FCH-222, N-98, Siri, Kanchan, LT-Kanchan, CH-1, CH-3, Abirami during his service. He published a total of 59 research papers and was a fellow of FISTS and received several awards. He patented the processes for recovery of solanesol (Patent No. IN 211204).

## Dr. Narayana Bhat B.

Dr. Bhat B.N. was a well-known *bidi* tobacco breeder worked at AINPT centre Nipani, Karnataka since its inception in 1971 and served the *bidi* tobacco farmers for about 33 years. As a Plant Breeder, he developed four high yielding *bidi* tobacco varieties Vedaganga-1, Bhagyashree, Bhavyashree and NPN-190. He published around 100 research papers on tobacco. He served the Institute as a member in QRT. His contributions in the development of *bidi* tobacco varieties for the Nipani area of Karnataka are well recognized. He was conferred with FISTS in 2005 for development of *bidi* tobacco varieties.



## Narayanan A.I.



Shri Narayanan A.I. was a renowned Cytogenetist and served the Institute for 32 years (1971-2003). During his service he contributed immensely to the cultivar development in FCV and Burley tobaccos. He developed the FCV tobacco varieties viz., Kanthi, CM 12 (KA), Jayasri and Jayasri MR including the land mark variety Siri and a burley tobacco line BSRB 2. The variety Siri revolutionized the tobacco productivity in SLS and SBS regions. He has published 17 research papers in various journals. He was conferred with FISTS for outstanding contributions to tobacco research during 2003. His contribution in tobacco Cytogenetics, interspecific hybridization and mutation breeding are worth mentioning.

## Dr. Pal N.L.

Dr. Pal N.L. was a renowned tobacco physiologist joined in 1948, laid the foundation of tobacco physiology research and also involved in the development of laboratories of the Institute. He has done pioneering work on tobacco sucker control, tobacco seed germination, flue-curing schedules, estimation of total alkaloids, interrelation of potassium and chlorine supply on the leaf burn of flue-cured tobacco. He also served the Institute as Director, over three years in different periods. He successfully controlled the axillary suckers in tobacco by application of coconut oil after topping. Dr. Pal had developed low temperature pre-treatment of tobacco seed for improving germination at supra optimal temperature. He developed a simple method of nicotine estimation in tobacco leaf by Spectrophotometer. He published several research papers in physiology. He has published 25 research papers in various journals.



## Dr. Palanichamy K.

Dr. Palanichamy K. was a well-known Geneticist and a Plant Breeder, initially joined ICAR 1974 and has a research experience of 31 years. He served as Head, ICAR-CTRI-RS, Vedsandur and the Division of Crop Improvement, ICAR-CTRI. He did outstanding work on tobacco breeding, biometrical & biochemical genetics and mutation breeding areas. He contributed for the improvement of different types of tobacco particularly in chewing tobacco of Tamil Nadu and West Bengal. He developed and released tobacco varieties, Abirami CR, Kamatchi, Meenakshi CR, Kaviri, Abirami, Manasi and Siri. He also underwent training in Cuba under Indo - Cuban exchange plan on 'Agro-techniques for cigar filler binder and wrapper tobacco and Grading and manufacture of Cigars'. He has published several papers in various journals. He was conferred with Fellow, Indian Society of Tobacco Science (ISTS) in 2005 for the improvement of different types of tobacco.



## Dr. Patel A.D.



Dr. Patel A.D. a noted Plant Breeder joined at Bidi Tobacco Research Station, Anand in 1975. He served in tobacco research for 31 years. He worked mainly in the development of non-FCV tobaccos viz., bidi, chewing and *rustica*. He developed a total of twelve high yielding, tolerant and resistant tobacco varieties viz., GABT-11, ABT-10, MRGTH-1, GT9, GT 7, GT 5, GT 8, GT 6, GCT 3, GCT 2, GC 1 and first bidi tobacco hybrid (GTH-1). He was awarded with Fellow, Indian Society of Genetics & Plant Breeding and Fellow, Indian Society of Tobacco Science for his contribution in releasing tobacco varieties and hybrids to increase the productivity. He has published 70 research papers.

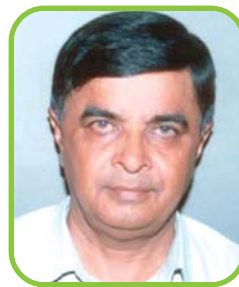
## Dr. Patel B.K.

Dr. Patel B.K., an outstanding scientist in the Soil Science and Agricultural Chemistry joined in Institute of Agriculture, Anand in 1967. He has 37 years of experience in research, teaching and extension. His achievements include nitrogen and irrigation management in *bidi* and *rustica* tobacco, sucker control, and reduction of pesticide residues in *bidi* tobacco. He served as Head Bidi Tobacco Research Station, Anand for a short time. He has also contributed on maximization of tobacco leaf protein concentrates and tobacco seed oil. He is associated in development of *bidi*, *rustica* and chewing high yielding and resistant tobacco varieties (MRGTH1, GTH1, GT7, GT8 and GCT2). He published 110 research papers and received awards for his research contribution. He was a Fellow of Indian Society of Tobacco Science (ISTS), Indian Society of Agricultural Chemists and Indian Society of Agricultural Biochemists.



## Dr. Patel B.N.

Dr. Patel B.N. was a Plant Pathologist joined in the service in 1978, he had 34 years of research experience. He served as Head, *Bidi* Tobacco Research Station, Anand for a period of 2 years. His area of research include management of fungal and viral diseases of *bidi* and *rustica* tobaccos through cultural, physical, chemical, biological and resistance methods. He also worked on integrated management of diseases in tobacco nursery and field crops. He published 68 Research Papers. He was awarded with Shri Kuberbhai Vrajbhai Gold Medal, BACA; P.P. Singhal Memorial Pesticides India Award by ISMPP, Sardar Patel Agricultural Research Award by Govt. of Gujarat etc.



## Dr. Patel D.J.



Dr. Patel D.J. was a Plant Nematologist joined AICRP on Tobacco at BTRS, Anand in 1967. He had 38 years of research experience. Especially he worked in Non-FCV tobaccos viz., *Bidi*, *Rustica* and Chewing. His outstanding contributions include control and management of root-knot nematodes, damping-off and cigarette beetle on *bidi* tobacco. He received a total of 10 Awards for his research contribution. He published 239 research papers in peer reviewed Journals.

## Dr. Patel G.J.

Dr. Patel G.J., a distinguished Plant Breeder and served long period of 37 years in the tobacco research. He initially joined at *Bidi* Tobacco Research Station, Anand in 1948. He was instrumental in establishing the All India Coordinated Research Project on Tobacco (AICRPT) in the year 1971 and became first Project Coordinator (PC), served AICRPT for 14 years. He developed ten high yielding and disease resistant *bidi* tobacco varieties viz., A119, A2, GT5, GT4, GT6, GCT2, GC1 etc. The land mark *bidi* tobacco variety A119 developed by him has been cultivated in all the 3 *bidi* tobacco growing states till today. He is accountable for the overall development of the *Bidi* Tobacco Research Station and the agro-technologies developed during his period led to phenomenal increase in the *bidi* tobacco yield (800-3000 kg/ha). He was involved in different tobacco policy making committees. He was conferred with FISTS by Indian Society of Tobacco Science (ISTS) in 1995 for his outstanding tobacco research contribution. He was very popular among the *bidi* tobacco farmer's of Gujarat State. 'Dr. G.J. Patel award' was introduced by the ISTS on his name.





## Dr. Pavate M.V.

Dr. Pavate M.V. was a statistician worked at ICAR-CTRI in the early year of the Institute establishment. He made significant contributions in the field of statistics and quantitative genetics. His notable contributions include the estimate of optimum plot size for field experiments in tobacco, selection of cropping pattern through linear programming, adequacy of the linear model in discriminatory analysis for plant selection, combined analysis of balanced incomplete block designs with some common treatments, routine method of detection of linkage in segregations involving three or more characters, suitable unit for assessing frog-eye spot on heavily infected tobacco leaves, etc. He is also associated in the study of quantitative inheritance in *Nicotiana tabacum* L. and components of genetic variation of flowering time, leaf number, grade performance and leaf burn, Varietal classification and selection by multivariate analysis, chemical characteristics of flue-cured tobacco grown on four different classes of land by discriminant function, determination of optimum combination of nutrients in NPK experiments by the use of response surfaces, etc. He has published 12 research papers in various journals.

## Dr. Prabhu S.R.



Dr. Prabhu S.R. was an Organic chemist and has 36 years (1969-2005) of experience in tobacco research. Worked extensively on alternative uses of tobacco, chemical compositions of aroma-bearing constituents, radioactive tracer studies on carbonyl generation and improvement of tobacco aroma and smoke flavour by post curing processing in flue-cured tobacco. Active member of ISTS, published 37 research papers and received two ISTS awards.

## Dr. Prasad Rao J.A.V.

Dr. Prasad Rao J.A.V. was a distinguished scientist in Soil science and Agricultural chemistry, has 36 (1972-2008) years of research experience. Served as Head, Division of Crop Chemistry & Soil Science (2006-2008). His research contributions include saving of phosphorus in NLS, secondary and micro nutrient nutrition in nursery and as well as field crop, nitrogen requirement of 16/103 and CM-12 (KA), tobacco quality analysis & fixing the limits for quality parameters and seed bed management. Major contributions are proposing the concept of Soil Health cards for the sustainable management of agricultural fields, creation of CTRI website with information on good agricultural practices to various zones and publication of literature on tobacco crop management aspects. He was associated in the development of tobacco varieties viz., Siri, Hemadri, Lanka special and Bhairavi. He has more than 100 publications. He received 4 awards and conferred with fellow ISTS, fellow of Indian Chemical Society and Fellow of Institution of Chemists (India).



## Dr. Prasada Rao T.D.

Dr. Prasada Rao T.D. has 34 years (1957- 1991) of experience in various tobacco R&D activities involving ITC and VST organisations. Introduced many production practices for improving quality and productivity of FCV tobacco in NLS region to meet the export quality standards. He was responsible for transformation of Northern Light Soil crop from the filler tobacco to semi-flavourful tobacco. Introduced the concept of ripeness and grading in FCV tobacco. Served as member of Research in the Management Committee of ILTD and contributed in setting the strategic direction for tobacco R&D. Served as a Quality Control member for ICAR-CTRI. He was conferred with FISTS for outstanding contribution in the FCV tobacco during 1998.



## Prasanna Simha Rao G.S.B.



Shri Prasanna Simha Rao G.S.B. was an experienced tobacco breeder with a vast experience of 39 years (1963-2002) in the varietal improvement for yield and quality, and biotic stress (Black Shank and Tobacco Mosaic Virus) resistance in FCV, chewing, Cigar and Cheroot tobaccos. Developed many promising FCV and non-FCV tobacco varieties viz., Kanchan, VT 1158, Gauthami, Hema, Meenakshi, Maragadham, Prabha, Bhagyalakshmi, Thangam, Vairam, Sona, Gandak Bahar, Sendarapatty Special, Bhavani Special, Krishna, Lanka Special, Bhairavi, Natu Special and Viswanath, are noteworthy to mention. He served as incharge, CTTRI RS, Jeelugumilli. He Published 24 research papers in the scientific journals. He was conferred with FISTS for outstanding contribution in the improvement of tobacco during 1998.

## Dr. Raghupathi Rao G.

Dr. Raghupathi Rao G. was an entomologist and joined service in 1985, has an experience of 35 years in tobacco research. He worked on pesticide application technology, evaluation of new insecticides for management of ground beetle. He also worked on influence of insecticide formulations on incidence of major insect pests of FCV tobacco. He was also associated in the development of three FCV tobacco varieties viz., Hemadri, Lanka Special and Bhairavi. He published about 16 research papers.



## Dr. Raju C.A.

Dr. Raju C.A. was a tobacco Plant Pathologist, had a research experience of 34 years (1978-2012). He worked extensively on the broomrape and its control. Identified *Sclerotium rolfsii* parasitizing *Orobanche cernua* and *Waitea circinata* causing damping-off in tobacco. Developed a 'Mini-Spear' and 'Leaf pusher' in broomrape control in air-cured tobacco crop. Studied the variability in tobacco germplasm towards *Orobanche* infection and identified *Nicotiana* species having field tolerance to *Orobanche*. He studied copper toxicity in tobacco nurseries. Also worked on black shank disease control, viral diseases spread & symptoms and screened breeding lines to TMV. He has published 40 research papers.



## Rama Prasad G.



Shri Rama Prasad G. was an Entomologist, has an experience of 35 years in tobacco research (1964-1999). His outstanding contributions include control and management of tobacco insect pests, viz., tobacco caterpillar, aphid and ground beetles. He screened Bt tobacco transgenics for reaction against *S. litura* and *H. armigera*. He is involved in the development of FCV variety, CTRI Sulakshana, a high yielding variety having resistance to TMV and tolerance to Aphid. Received Dr. G.S. Murthy Award, Dr. G.J. Patel Award. He was conferred FISTS for outstanding contribution to the management of insect pests in tobacco and work on neem products and IPM during 1998. He published about 30 research papers. He was conferred with Fellow, Indian Society of Tobacco Science (ISTS) in 1998 for his contributions to tobacco research.

## Ramachander P.R.

Shri Ramachander P.R. was a Statistician worked at ICAR-CTRI in the early years of the Institute. He worked on desirable limits of chemical parameters for quality appraisal in Flue-Cured Virginia tobacco, uniformity trails in black soils of Andhra Pradesh, light soils of Mysore and efficient plant types in tobacco, fixing the size of F2 progeny in Flue-Cured Virginia, etc.

## Ramachandram D.

Shri Ramachandaram D. was an Agronomist has 22 years (1974-1996) of experience in tobacco research. Later Joined Godfrey Phillips India Ltd., as Leaf Development Manager in 1996 and served for a period of 12 years. His main focus was on effect of nitrogen levels and irrigation schedules on the chemical and physical quality characteristics of VFC tobacco grown in Northern Light Soils of Andhra Pradesh. He is also associated in the development of FCV varieties Kanchan and CM 12 (KA). He has several Research papers and popular articles (36) at his credit. He has got ITA award during 1998 by ISTS.



## Dr. Ramakrishnaya B.V.



Dr. Ramakrishnaya B.V. was an eminent Soil scientist with an experience of more than 40 years in tobacco research starting from 1954. Served as Head, Division of Crop Chemistry and Soil Science, ICAR-CTRI, Rajahmundry and also Head, CTRI Research Station, Hunsur. He conducted extensive research on potassium nutrition of tobacco and first time identified potassium deficiency in FCV tobacco. He prepared soil fertility bulletins of tobacco growing areas of Andhra Pradesh. He has experience on scientific aspect of tobacco cultivation, especially for KLS tobacco. He took active role in creating awareness on quality in KLS tobacco and Potash deficiency in NLS and recommended omission of P and K in heavy blacksoils. He was associated in the development of FCV variety, Bhavya and Burley variety, Banket A1. He published more than 100 research papers in National and International Journals. He received 3 awards. He was associated with ISTS activities since its inception. He was conferred with FISTS in the year 1998 for outstanding contribution for his research on potassium deficiency in tobacco.

## Ramana Rao V.V.

Shri Ramana Rao, V.V. was a Plant Breeder and served ICAR-CTRI for a long period of 41 years (1955-1996). Also, served as Head, Crop Improvement, ICAR-CTRI. His major contribution were in the development and release of high yielding varieties of FCV (Siri and Kanchan) and Natu tobacco (Viswanath and Natu Special). He worked extensively on the transfer of resistance to pests and diseases from elite lines. He published a total of 30 research papers. He was conferred with FISTS for outstanding contribution in the improvement of tobacco during 1995.



## Dr. Rao C.C.S.

Dr. Rao CCS joined the ICAR service in 1989 and has 34 years experience in Research and Extension. His major contributions include fertilizer adjustments to reduce leaching losses in light soils of A.P., omission of P and K to FCV in vertisols, recommendation of calcium nitrate, potassium nitrate, rock phosphate in FCV tobacco. He is instrumental in developing tray seedling technology, micro-sprinkler irrigation in nursery and drip fertigation in FCV tobacco at NLS and demonstrated utilisation of solar energy in FCV tobacco curing. He is associated with the release of eight tobacco varieties viz., CTRI Sulakshana, LT Kanchan, CH-1, CTRI Shrestha, CTRI Naveena, GABTH-2, Nandyala Pogaku-2 and GCT-5. He served as Head, Division of Crop Production; Head, Division of Crop Chemistry & Soil Science, Nodal Officer, PME Cell and Nodal Officer, AINPT. Published 148 research papers and received 5 awards, Fellow Indian Society of Tobacco Science and Editor, Tobacco Research Journal and associated with activities of ISTS. He was conferred with FISTS for his outstanding contribution during 2009.



## Rao R.S.N.



Shri Rao R.S.N joined the service as an Entomologist in ICAR-CTRI. Has more than 35 years of research experience. He worked on various aspects of tobacco insect pests, studied insecticide efficiency, alternative host plants. etc. Identified many new pests on tobacco which include white grub, *Alphitobiuspiceus*, a new pest of stored wrapper Tobacco, new additions to the natural enemies of *S.litura* and *M. persicae* on Flue-Cured tobacco, *Aphelinus* SP. (Hymenoptera: *Aphelinidae*) as a parasite of *M.persicae*, on Lanka tobacco. Studied extensively on the biology of insect pests such as *Demobrotis* sp. and *Lasioderma serricorne* F on stored wrapper tobacco. He also developed many control measures for aphids and leaf eating caterpillar. Initiated work on biological control of tobacco caterpillar using Nuclear Polyhydrous Virus (NPV). He has published 44 research papers in various journals.

## Dr. Rao R.V.S.

Dr. Rao R.V.S. was geneticist and worked on tobacco germplasm management and breeding of cigar-filler, chewing, *jati* and FCV tobaccos. His services are remarkable in the maintenance, documentation and characterisation of tobacco genetic resources. Involved in the development of TGIS (Tobacco Germplasm Information System). He developed and released a total of eight tobacco varieties viz., CTRI Sulakshana, LT Kanchan, Siri, Meenakshi CR, Kaviri, Abirami, Manasi and Meenakshi. Served as Head, Division of Crop Improvement and In-charge, Seed Production Unit at CTRI. He has published 32 research papers in various journals.

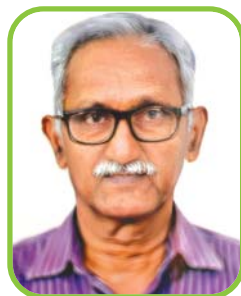


## Dr. Reddy N. S.

Dr. Reddy N.S. was a prominent tobacco breeder. He started his professional career as a Research Assistant at Tobacco Research Station, Guntur from 1943. He worked extensively on Flue Cured Tobacco and he carried out a survey and recommended improved methods of production of Flue Cured Tobacco. He served ILTD for 30 years (1950-1980). His contributions include improved methods of production of Flue Cured Tobacco, light soil tobacco development and release of the tobacco varieties 16/103 and FCV Special which were cultivated widely in NLS and KLS areas respectively during 1980s. Served as Chief Scientist and Development Advisor at ITC (1975-1980). He travelled very extensively and visited several countries. He visited Ceylon in 1952 and Fiji Islands in 1956 to carried out a survey and recommended improved methods of production of Flue Cured Tobacco. Dr. Reddy attended the CORESTA Congress in Greece and West Germany in 1966 and 1971. Visited the Far East as a member of the Study Team set up by the Tobacco Export Promotion Council in 1975. He was conferred with FISTS for his outstanding contribution in light soil tobacco development in India and for release of tobacco during 1995.



## Dr. Reddy, P.R.S



Dr. Reddy, P.R.S was a distinguished Soil Scientist joined at ICAR-CTRI has 32 years of experience (1978-2010) in tobacco research. He has done extensive research on plant nutrition with special reference to phosphorus and potassium and characterised tobacco soils. He has made significant recommendations on omission of P and K in Vertisols, leaching adjustment to nitrogen and potassium, recommendation of Chilean nitrates etc. As Nodal officer, AINPT, he was instrumental in the overall development of tobacco research. He is associated in the release of FCV hybrids, CH-1 & CH-3 and a *bidi* variety, Nandyala Pogaku-1. He has published 37 research papers in various journals. He was conferred with FISTS for contribution in growth and development of ISTS and his research on P and K nutrients in 2000.

## Dr. Reddy T.S.N.

Dr. Reddy T.S.N. was a Pathologist and has tobacco research experience of 30 years since 1965. Worked extensively on root-knot management, resistance of tobacco-distorting virus in India, Anthracnose (*Colletotrichum tabacum* Bowing) disease screening in tobacco germplasm, black shank disease, powdery mildew management. Identified several germplasm lines and varieties resistant to various diseases. He was associated in the development and release of VT 1158, CM 12 (KA), Jayasri (MR) and Godavari Special. He published 40 research papers.



## Dr. Roy S.

Dr. Roy S. joined ICAR in the year 1986 as a Plant Pathologist and joined ICAR-CTRI in the year 2000. He is having a rich experience of 35 years in research. His vital contributions to fungal and bacterial diseases of non-FCV tobaccos such as *Jati* and *Motihari* with special emphasis on bacterial wilt and hollow stalk disease of West Bengal. He was associated in the development and release of a high yielding *Motihari* variety, *Torsa* and *Jati* variety, *Manasi* (tolerant to frog-eye spot, black shank, root - knot, hollow stalk and brownspot). He also served as In-charge Director for ICAR-DMAPR, Anand. He published around 115 publications.



## Sannibabu M.



Shri Sannibabu M. joined ICAR-CTRI in 1975 as an Agronomist and has an experience of about 33 years (1975-2008) in tobacco research especially in FCV tobacco. He served as the Head, CTRI RS, Jeelugumilli. His contributions include water, nutrient and weed management of FCV tobacco grown under NLS and fuel saving methods in leaf curing which are extensively adopted by the farmers till date. He served the tobacco farming community as extension specialist by successfully transferring tobacco production technologies effectively.

He was conferred with FISTS for his contribution on fuel saving methods of tobacco in 2005. He has published 30 research papers in various journals.

## Dr. Satyanarayana K.V.

Dr. Satyanarayana K.V. was a Geneticist and Plant Breeder at ICAR-CTRI during 1956-1993 and had 37 years of research experience. As Head, Division of Crop Improvement, he is well known for his contribution in guiding the plant breeding group in right direction to produce outstanding varieties. He is instrumental in developing and releasing high yielding varieties *Gauthami* and *VT-1158*. He worked on characterisation of *Nicotiana* interspecific hybrids, tissue culture, fixing the size of  $F_2$  population in tobacco, genetics associated with white flower and seed in tobacco, chemical characterisation of HDBRG tobacco, development of high yielding TMV resistant FCV tobacco line, 1099/2/4. He was conferred with FISTS for his contribution for the improvement of tobacco in 1995. He has published 19 research papers in various journals.



## Prof. Shah H.M.

Professor Shah H.M. started his career in Plant Pathology in 1954 and pioneered the establishment of separate discipline of Nematology at the Gujarat Agricultural University, Anand. Worked extensively on control of plant parasitic nematodes. His investigation led to the identification of biological agents such as nematode trapping fungus (*Datylaria* sp.), metabolites from *Aspergillus niger* and *Penicillium* sp., plant extracts with nematicidal values, cultural practices like deep ploughing in summer months, use of organic amendments viz., Neem cake, Maruti cake, Mahuwa cake, etc.,



## Dr. Shenoi M. M.



Dr. Shenoi M.M. joined ICAR in 1978 and had 38 years of research experience in Plant Pathology and 15 years of experience as Head ICAR-CTRI Research Station, Hunsur. He made significant contributions in tobacco disease epidemiology, forecasting, identification and integrated disease management, chemical control, disease resistance etc. He is also associated in the release of FCV tobacco cultivars, FCH-222, Kanchan, Bhavya, Ratna and CH-3. He was conferred with FISTS for his contribution towards integrated pest and disease management of tobacco in 2000. He has published 55 research papers in various journals.

## Sitaramaiah S.

Shri Sitaramaiah S. was an Entomologist served the organization for 34 years and retired in 2006. He developed and demonstrated neem based pest management modules in tobacco. He has served as Head, Division of Crop Protection, ICAR-CTRI and Officer in charge of Krishi Vigyan Kendra, Kalavacherla. He was also associated in the development and release of FCV variety, Kanchan and chewing tobacco varieties, Abhirami CR and Meenakshi CR. He is the recipient of Dr. Benerjee (Plant Protection Advisor, Government of India) Gold medal in 1974 and Dr. G.J. Patel gold Medal for Outstanding Research Contribution in tobacco Plant Protection. He was conferred with FISTS for his contribution towards integrated pest management of insect pests on tobacco in 2000. He has published 95 research papers in various journals.





## Dr. Sitaramachary T.

Dr. Sitaramachary T. was a Plant Breeder having 28 years of research experience since 1970. Involved in fixing the size of  $F_2$  population in FCV and worked on both the breeding of pure line varieties and CMS hybrids. Effectively managed tobacco plant genetic resources. Acted as In-charge, CTRI Research Station, Jeelugumilli. He is the breeder of Flue-Cured tobacco variety, 'Hema' that was widely cultivated for nearly 15 years in black soils and SLS of AP increasing the productivity of these regions to 1500 to 1700 kg/ha. This has brought laurels to institute not only from the scientific community but also from the farmers. He was conferred with FISTS for his contribution towards improving the yields of tobacco. He has published 95 research papers in various journals.



## Dr. Siva Raju K.

Dr. Siva Raju K. was an eminent Bio-chemist joined the ICAR in the year 1989 and continued working up to 2017. He made significant contributions in the area of tobacco biochemistry and molecular biology. His contributions include DNA fingerprinting of tobacco types using isozymes, RAPD, AFLP, SSR and ISSR markers, molecular characterization of bacterial and fungal bio-control agents. He developed non-destructive method of estimating volatile carbonyls in tobacco, biochemical characterisation of tobacco seed oil, effect of cultural factors on quality and neutral volatile aroma compounds in different tobacco types, etc. He has registered 75 nucleotide sequences in NCBI. He is associated in the development of FCV tobacco variety CTRI Sulakshana. He was conferred with FISTS for his contribution tobacco research in 2011. He has published 74 research papers in various journals.

## Dr. Sreedhar U.

Dr. Sreedhar U. was a renowned tobacco Entomologist having 33 years (1989-2022) of research experience. He served two terms (2009-2022) as Head, Division of Crop Protection, ICAR-CTRI. He made significant contributions for reducing pesticide residues in Indian tobaccos through IPM. His research contributions include development & demonstration of IPM modules for major tobacco pests, developed habitat management techniques in different crops, identification of new pesticide molecules for management of tobacco pest etc. He is associated in the release of FCV tobacco varieties, CTRI Sulakshana, CTRI Naveena, CTRI Shreshta; burley variety, Vijetha and *bidi* varieties, Nandyala Pogaku-1, Nandyala Pogaku-2 and GABTH-2. He received many prestigious awards including Dr. R.P. Srivastava Memorial National Award, Crystal National Agricultural Award, Dr. Bapi Reddy Memorial Award, T.B. Fletcher Memorial Award, Dr. B.V. David Lifetime Achievement Award etc. He made significant contributions to the growth and image of ISTS as EC member, Treasurer, Editorial Board Member, Associate Editor, Editor and Secretary. He was conferred with FISTS in 2005 for his outstanding research contributions towards reducing pesticide residues in Indian tobaccos as well as growth & image of ISTS. He has more than 350 publications to his credit.



## Srinivasulu R.

Shri Srinivasulu R. was an Agronomist having 34 years (1976-2010) research experience in FCV tobacco. He worked extensively on the cropping sequences, economics of FCV tobacco grown in Southern light soils, control of weeds in burley tobacco, organic amendments in raising successful tobacco nurseries, water harvesting (lined farm pond) for supplemental irrigation to FCV tobacco in SLS, time and level of Nitrogen application in alfisols etc. He is associated in the development of tobacco varieties, Kanthi and N-98. He had 50 publications.



## Subba Rao R.

Shri Subba Rao R. was an Agronomist joined ICAR-CTRI in 1970 and had a tobacco research experience of 38 years (1970-2008). He worked extensively on crop production technologies of non-FCV tobaccos viz., burley, cigar filler, chewing, HDBRG, wrapper, natu, and also FCV tobacco in Vertisols. He was associated in the development and release of popular varieties Banket A1 and Siri. He was conferred with Fellow, Indian Society of Tobacco Science for his contribution in crop production technologies for non-FCV and FCV tobaccos grown in Vertisols of Andhra Pradesh in 2005. He has published 30 research papers in various journals.

## Dr. Subhashini U.

Dr. Subhashini U. was a Cytogeneticist worked extensively on cytogenetics of Interspecific hybrids in the genus *Nicotiana* and tissue culture aspects of tobacco. She had a research experience of 38 years starting from 1963. Her work led to the creation of fourth phylogenetic arc in the genus *Nicotiana*. She was responsible for the establishment of tissue culture laboratory in 1970s at ICAR-CTRI. Worked on pollen culture, callus cultures, embryo rescue, in vitro fertilisation, etc. She published 60 research papers.



## Subrahmanya K.N.

Shri Subrahmanya K.N. was an eminent Plant Breeder with 35 years (1986-2021) of research experience in tobacco breeding. He served for more than 24 years as scientist at ICAR-CTRI and later shifted to ITC Ltd. He was involved in developing and releasing a total of nine tobacco varieties viz., Rathna, FCH 222, CH-1, CH-3, Kanchan, LT-Kanchan, Kaviri, Abirami & Meenakshi. He worked on imparting resistance to black shank, Tobacco Mosaic Virus, *Fusarium wilt*, brown spot, root knot and powdery mildew, etc. tobacco lines. He was involved in the production of truthfully labelled seed of released tobacco varieties for supply to farmers. He was awarded with Dr. G.S. Murthy award for his contribution to Breeding of FCV Tobacco by Indian Society of Tobacco Science in 2000. He has published 16 research papers in various journals.



## Dr. Subramanyam T.S.

Dr. Subramanyam T.S. specialized in Agronomy joined the erstwhile Indian Leaf Tobacco Company limited in the year 1972. He served ITC in different capacities. He immensely contributed in the development of advanced agro techniques such as Balanced Fertilisation, Topping, Chemical sucker control and Ripe Leaf Harvest in Northern light soils and Karnataka light soils, to improve their yield and quality and service the market led requirements. He also contributed substantially, in the area of Energy Management by the introduction of JTS-ILTD jacket in collaboration with JTI Corporation, Japan, saving over 28% of fuel. He was known for his outstanding contribution towards projecting the image of ISTS by taking the initiative to conduct the first National Botanical Symposium and World Neem Conference and to organize the CORESTA Conference for the first time in India. He was conferred with Fellow, Indian Society of Tobacco Science (ISTS) in 1998 for his contributions to tobacco research.



## Umamaheswara Rao M.



Shri Umamaheswara Rao M. was an Agronomist having 36 years (1964-2000) experience of in tobacco research and extension. Served as Head, Division of Crop Production, ICAR-CTRI. His outstanding contributions includes development of agronomic practices black soils, SLS and NLS tobaccos and newly released varieties, identification of economically viable tobacco-based crop rotation sequences to black cotton soils of Andhra Pradesh and flue economy in curing. He was associated in the development of five tobacco varieties viz., Banket A1, Lanka special, Bhairavi, Natu special and Vishwanath. He was awarded with Fellow of Indian Society of Tobacco Sciences in 1998 and Devappa awards for his outstanding contributions. He has published 38 research papers in various journals.

## Dr. Venkatasubramanian V.

Dr. Venkatasubramanian V. joined ICAR-CTRI, Rajahmundry as a Senior Scientist, Agricultural Extension and worked as Head KVK, Kalavacharla. He was instrumental in demonstration and transfer of technology developed by ICAR-CTRI to farmers of Andhra Pradesh. He is associated in the development of Banana Fibre Extractor - a need based farmer friendly invention and popularized the invention more than 13 States in India including North Eastern Region. He popularized the backyard poultry units with high yielding varieties like Nicobari Fowl, Kadaknath, Japanese Quils, Turkey birds etc. He published several bulletins and pamphlets in local languages for the benefit of the rural and tribal farming community. His contributions led the rural and tribal communities to improve their socio-economic status.



## Dr. Venkateswarlu T.

Dr. Venkateswarlu T. was an eminent Cytogeneticist with an experience of about 25 years (1976-2001). He worked extensively on cytogenetics of interspecific hybrids in the genus *Nicotiana* and tissue culture aspects of tobacco. He was one of the early scientists responsible for the establishment of tissue culture laboratory at ICAR-CTRI and developed tobacco somaclones tolerant to leaf curl virus. He is associated with the development of number of nematode resistant pre-bred lines and for the first time he initiated the work on Bt tobacco transgenic resistant to *Spodoptera* and *Heliothis*, and tobacco somaclones tolerant to leaf curl virus. He contributed in the development of FCV varieties LT Kanchan and Hemadri. He had 60 publications to his credit.



## Dr. Venugopala Rao P.V.



Dr. Venugopala Rao P.V. joined at CTRI in 1987 as a Plant Breeder and has an experience of 31 years in improving various tobacco types viz., FCV, *Natu*, HDBRG, Burley, Chewing, Hookah and Cigar Wrapper. He was instrumental in development and release of ten tobacco varieties viz., Siri, N-98, CTRI Sulakshana, CTRI Shreshta, Hemadri (FCV), CH-1 (FCV hybrid), Bhairavi (*Natu*), Dharla (*Motihari*), Vijetha (burley) and Manasi (*Jati*). He served as Head In-charge, CTRI-RS, Dinhat for two years. For his outstanding contributions to tobacco, he was awarded the Tobacco Board Award - 2005 by ISTS. He has published several research papers in various journals.

## Dr. Viswanatham S.

Dr. Viswanatham S. joined in the year 1941 at ICAR-CTRI as a Plant Breeder and has a rich experience of 35 years in tobacco research and served as Officer-in-charge, Tobacco Research Station, Guntur. He made significant contributions in improving the FCV as well as *Natu* tobacco (sun-cured) productivity. He has recommended the crop rotation with gingelly, which has become a regular practice in the Guntur track. He developed and released a *natu* tobacco variety, Prabhat for Guntur and Kurnool areas of Andhra Pradesh. He advocated and thoroughly recommended for cultivation tobacco crop maximum upto 4 years in the same plot to fetch quality FCV produce.



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