

ICAR-CTRI

News

ICAR - CENTRAL TOBACCO RESEARCH INSTITUTE - 533105, A.P.

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Edited and Compiled

Dr. K. Sarala
Dr. H. Ravisankar
Dr. L.K. Prasad

Assistance

Md. Elias

Published

Dr. D. Damodar Reddy
Director, ICAR-CTRI
Rajahmundry-533105, A.P.
Ph: 0883-2449871-74
E-mail: directorctri@gmail.com
FAX : 0883-2410555
Website : www.ctri.org.in

ISO 9001:2008

The ICAR-CTRI, Rajahmundry, A.P. has been bestowed with ISO 9001:2008 certificate for the successful implementation of the quality management system with regard to basic, strategic and applied research on tobacco crop on 25.01.2016.



From the Director's Desk




Micronutrient Nutrition of Tobacco – Need for Major Focus

Of the seventeen essential elements known to be vital for plant growth and development, eight nutrients viz., boron (B), zinc (Zn), manganese (Mn), iron (Fe), copper (Cu), molybdenum (Mo), chlorine (Cl) and Nickel (Ni) are described as micronutrients as they are required in relatively smaller quantities than others. All micronutrients together constitute less than one per cent of the dry weight of most plants. Even though the amounts needed are small, the micronutrients are critical for many physiological processes and metabolic pathways. In accordance with Justus von Liebig's "Law of the Minimum", deficiency in any one of the essential nutrients would severely curtail overall tobacco plant growth, development and leaf quality even when all other essential nutrients are abundant. Short-supply of any of the micronutrients can, therefore, have an adverse impact on plant growth and crop yield. Micronutrient deficiencies often have as drastic an effect on crop yields and quality as do the deficiencies of major nutrients (N, P, K, Ca, Mg and S).

The message from various long-term fertilizer experiments in India and elsewhere is loud and clear that continuous cropping without micronutrient addition depletes soil micronutrient reserves. Occurrence of micronutrient deficiencies is now widespread across different production systems. Tobacco was once thought to be able to grow well with native soil micronutrient levels. However, with the use of high-yielding varieties with heavy nutrient demand, increased use of high analysis fertilizers devoid of micronutrient impurities, decreased input of organic manures and non-inclusion of micronutrients in fertilizer recommendations, soil micronutrient pools are subjected to gradual exhaustion resulting in emergence of micronutrient deficiencies. The micronutrient deficiencies represent a serious constraint to tobacco production because they not only adversely affect the crop but also hold back the crop responses to applied major nutrients and result in low nutrient use efficiency. Environmental conditions, soil characteristics (soil pH, organic matter, calcium carbonate content, drainage etc.) and soil management practices including liming, manure and fertilizer use and irrigation also affect micronutrient availability and deficiencies.

Tobacco, an important commercial crop, is valued more for leaf yield and its quality. The crop is grown on a wide range of soils both under rain-fed and irrigated conditions in India. Achieving high yield of good quality leaf in tobacco requires adequate supply of both major and micronutrients in a balanced form. Viewed against this, there is an emerging need to initiate systematic research on micronutrient nutrition of tobacco. The focus of the research should be on: (a) establishing critical limits of micronutrients in soils for tobacco production, (b) assessing soil micronutrient availability in different tobacco domains, (c) identifying hot-spots of micronutrient deficiency, and (d) developing appropriate nutrient management interventions/ strategies with due consideration to micronutrient needs.


(D. DAMODAR REDDY)

National Seminar on Crop Diversification

The ICAR-CTRI has organised the National Seminar on Crop Diversification at Rajahmundry on 18.01.2016. The Seminar is sponsored by the DAC & FW, Ministry of Agriculture, Govt. of India. Department officials, Scientists from ICAR and ANGRAU and YSR Horticulture University, Farmers and Industry Representatives participated in the Seminar and deliberated on a myriad issues relating to crop diversification in tobacco growing areas.



RESEARCH HIGHLIGHTS

Cultivar improvement

Varieties released

❑ CH-3: A flavoured high yielding (2500 to 2700 kg/ha) FCV tobacco hybrid suitable to Karnataka light soil FCV tobacco growing areas was released.



❑ NBD-209 : A high yielding (rainfed 1300-1500 kg/ha; irrigated 1500 – 2000 kg/ha) *bidi* tobacco variety suitable to Karnataka was released. NBD-209 is moderately resistant to root-knot nematode & brown spot disease.



- ❑ Advanced breeding line, Tobios-6 and NLST-4 performed better in bulk as well as on-farm trials.
- ❑ FCV lines viz., FCH 239, FCH 242 and V-5057 and Burley line, YB-27 found promising over their respective controls.
- ❑ Rapid evolving loci *trnH-psbA* (intergenic spacer region) is found to be polymorphic among the *Nicotiana* accessions with respect to amplicon length & sequence and *ycf1* for sequence.

Crop Production

- ❑ Bulk production of tray (100000) seedlings was done in poly trays for planting in Vertisols and alfisols experimental plots.
- ❑ Tray seedlings along with drip irrigation is more efficient in producing higher yields.
- ❑ Initiated studies on *Orobanche* seed germination with different methods. Seed germination could be obtained using *in situ* root exudates (green gram) absorption method.

❑ Application of urea/ AS as basal dose followed by urea or AS or Urea+ AS or Urea + AS+ KNO₃ or Urea + AS + CN did not show significant differences in green leaf yield or cured leaf yield or grade index.

❑ In vertisols, the integration of balanced N, P & K and regular intercultural operations along with weeding and *Orobanche* removal did not show any symptoms of false maturity.

❑ Set row planting with 100% RDF showed significantly higher uptake and soil available N, P and K over conventional planting with 100% RDF.

❑ Annual moringa intercropped in chewing tobacco did not affect the yield of chewing tobacco.

Crop Chemistry & Soil Science

❑ Reducing sugars found to have significant positive correlation with the afternoon relative humidity during the crop growth season and leaf chloride content have a negative correlation with the in-season rainfall.

❑ Sensitive bands identified in canopy spectral reflectance for leaf potassium, nicotine, reducing sugars and leaf nitrogen.

❑ In flue-curing of FCV tobacco, poly carbonate chamber with black alkathene inner lining is found promising during the day time by effectively trapping the solar energy using the greenhouse effect. A dual fuel system (solar energy + wood) in the existing conventional barn was found effective for curing which reduces the dependency on wood fuel.

Crop Protection

❑ Ground beetle *Mesomorpha villiger* Blanchard could be managed with seedling root dip using Imidacloprid 70 AF @ 0.14% or transplant water

treatment with imidacloprid 200 SL @ 0.005%.

❑ Use of Hi-tech sprayer till 50 DAP and thereafter HPKS was effective in saving of spray fluid and time over compression sprayer.

❑ Enriched tray seedlings with *Trichoderma viride* (30g) + *Pochania lilacinus* (30g) + *P. chlamydosporia* (30 g) increased the cured leaf yield by 10.5% and decreased the root knot index by 51.0% and wilt disease incidence by 51.3%.

Research Advisory Committee meeting

The second meeting of the current Research Advisory Committee (RAC) of ICAR-CTRI was held during 19th May, 2016 at ICAR-CTRI, Rajahmundry under the Chairmanship of Dr. A. Padma Raju, Former Vice-Chancellor, Acharya N.G. Ranga Agricultural University, Hyderabad. The committee reviewed the research being conducted at ICAR-CTRI & its Research Stations and advised few priority areas for initiating the research.



QRT

Prof. R.R. Hanchinal, Chairman, QRT and Chairperson, Protection of Plant Varieties and Farmers' Rights Authority, Government Of India, New Delhi visited ICAR-CTRI during 7-9 June, 2016 and finalized the QRT (2009-2013) report of ICAR-CTRI, AINPT and KVK.

Tribal sub-plan

- Tribal sub plan (TSP) of ICAR-CTRI for 2015-16 was implemented at Manchalavarigudem of Seethappagudem Panchayat in West Godavari district of Andhra Pradesh. Critical inputs viz., weighing scales, sprayers, fertilizers and seed were supplied to tribal farmers to enhance the agriculture productivity.



- TSP Action plan of ICAR-CTRI for 2016-17 was prepared for implementation in Seethappagudem and Sirivarigudem villages of West Godavari District, A.P; Veerepalli village in Prakasam district, A.P; Jamadar Bose village of Cooch Behar district, West Bengal and Ummathur village in Mysore district of Karnataka.

Monitoring visit

- Dr. S. Kasturi Krishna, Head, Div. of Crop Production and Dr. C.C.S. Rao, Head, CC & SS visited the ICAR-CTRI Research Station, Dinhata during 9-10 January 2016. They have monitored the experiments conducted at the station and tobacco crop situation at West Bengal.
- Dr. K. Sarala, Head, Div. of Crop Improvement and Dr. U. Sreedhar, Head i/c, Div. of Crop Protection visited ICAR-CTRI Research Station, Vedasandur during 22-23 January, 2016. They have monitored the on-going experiments at the station, on-farm trials at the farmers fields and tobacco crop situation at Tamil Nadu.

TRANSFER OF TECHNOLOGY

Training programme conducted

A training programme was conducted to the officials of Tobacco Board on Good Agricultural practices of FCV tobacco cultivation during 15-17 March, 2016 at ICAR-CTRI, Rajahmundry.

A training programme on "Good Agricultural Practices, crop protection agents and PHPM in NLS tobacco production" to Tobacco Board field staff and farmers of five auction platforms in NLS area of AP was conducted in collaboration with Tobacco Board on 10.03.2016 at ICAR-CTRI RS Jeelugumilli.



Field Friends Programmes

About twelve field friends' programmes were conducted during the first half of 2016 in the villages of Jangareddygudem, and Koyalagudem Mandals of West Godavari District. The farmers were suggested to follow the recommended practices of ICAR - CTRI during the tobacco crop season.

Krishi Unnati Mela

ICAR-CTRI participated and put up an exhibition stall in Krishi Unnati-National Agricultural Fair organized by Ministry of Agriculture and Farmers Welfare during 19-21 March, 2016 conducted at ICAR-IARI, New Delhi.



Survey Conducted on Orobanche

A survey on *Orobanche* was conducted in Prakasam and Nellore Districts (14 Plat farms) by Scientists of CTRI, Managers and Auction Superintendents of Tobacco Board for 5 days in January, 2016. The extent of damage varies from 5 to 10%. Farmers were educated about *Orobanche* infestation and management.

ICAR-CTRI Seed Hub

ICAR-CTRI has been identified as one of the Seed Hub Centres for pulses under centrally sponsored Scheme of NFSM. It is proposed to raise seed production plots at different farms of CTRI viz., CTRI Farm-Katheru; CTRI RS, Kandukur; CTRI RS, Guntur and CTRI RS, Jeelugumilli, during *kharif/ rabi/* summer seasons of 2016-17.

Field IRC

Field IRC was conducted at Black Soil Research Farm, Katheru on 25.02.2016 to monitor the experiments as per the approved technical programme.

Capacity building programmes

Refresher cum skill upgradation programmes were conducted for technical and skilled supporting staff during 16-19 March, 2016. The programme was covered in three modules viz., 1. For Technical personnel engaged in field 2. For Skilled Supporting Staff engaged in labs and 3. For Skilled Supporting Staff engaged in field operations

INTERNATIONAL YOGA DAY

International Yoga Day was celebrated on 21st June 2016 at ICAR – CTRI and its Research Stations.



AWARDS

Dr. D. Damodar Reddy, Director, ICAR-CTRI elected as the Fellow of Andhra Pradesh Akademi of Sciences - 2016 for his outstanding contributions to Science & Technology (19.03.2016).



Dr. H. Ravisankar, Senior Scientist elected as Associate Fellow of Andhra Pradesh Akademi of Sciences - 2016 for his outstanding contributions to Science & Technology (19.3.2016).



Dr. K. Suman Kalyani, Principal Scientist, ICAR-CTRI has been honoured with the prestigious 'Bio-Technology Social Development Award – 2015' by the Department of Bio-Technology, New Delhi on 05.02.2016 for her outstanding extension work.



Swachh Bharat Pakhwada

Swachh Bharat Pakhwada was celebrated at ICAR -CTRI from 16-05-2016 to 31-05-2016 and taken up activities for cleaning the surroundings of institute, labs and farms.

PERSONALIA

Promotions

- Dr. H. Ravisankar (w.e.f. 30.10.2014) and Dr. V.S.G.R. Naidu (w.e.f 08.08.2014) are promoted to the post of Principal Scientist through CAS.
- Twenty Five Temporary Status Casual Labourers has been regularized as Skilled Supporting Staff during the first half of 2016.
- Sri P.V. Satyanarayana and Sri S.V. Ramana are promoted as Assistant Administrative Officers; Sri P. Eswara Rao, Sri G.S.N. Murthy and Sri Y. Venkateswara Rao as

Sr.Technical Assistants; Sri B. Raja Rao as Sr.Technical Officer and Sri K. Malakondaiah as Technical Assistant

RETIREMENTS

Dr. K. Nageswara Rao superannuated on 31.01.2016, Sri D.V. Rama Rao on 29.02.2016, Sri Gouranga Sarkar, Smt. Mariyamma, Sri K. Vijaya Raju and Sri Chimala Rangaiah on 31.03.2016, Sri Nalini Rajan Barman on 30.04.2016, Smt. Rangamma on 31.05.2016, and Dr. T.G.K. Murthy, Sri N.V.V. Satyanarayana and Smt. K. Pushpa on 30.06.2016.

KRISHI VIGYAN KENDRA, KALAVACHARLA

- KVK organised 9 training programmes for farmers and rural women in the areas of milky mushroom production, pro-tray vegetable seedlings production, embroidery & painting, block printing, handicrafts with weeds, value addition to fruits and vegetables, value addition to cocoa, value added products with coir, etc.
- A Training-cum-Awareness Programme on "Protection of Plant Varieties and Farmers' Rights Act" was organised on 29.03.2016 at KVK, Kalavacharla.
- K i s a n Sammelen/ Goshti was organised on ' R a b i Vegetable

Cultivation' on 01.03.2016 at Madiki village, Alamuru mandal and 'Pulses Production' on 30.03.2016 at ICAR-CTRI, Rajahmundry. 200 farmers from 6 mandals were participated in these programmes.

- Organized a 'Friends of Coconut Tree (FoCT)' training programme from 20-25 January 2016 at KVK, Kalavacharla. About 20 rural youth/farmers participated in the programme.



- Capacity building programme on 'Collection of soil samples' was organised on 19.02.2016 to 45 farmers from five villages of Korukonda Mandal.

