



समाचार Newsletter

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Central Tobacco Research Institute, Rajahmundry

RESEARCH HIGHLIGHTS

CTRI, RAJAHMUNDRY

- Direct DNA transformation studies confirmed that it is possible to transform recipient parent by direct injection of DNA from donor parent following the pollen tube carpellary septum pathway. The gene responsible for brown seed colour from the donor (Red Russian Carmine) could be transferred to the recipient (Jayalakshmi) parent by direct injection of donor DNA.
- Growing Soybean with Redgram as intercrop in 5:1 ratio has been found to be profitable as an alternate cropping system in traditional black soils in place of fcv tobacco. There was a net profit of Rs.18,565/ha by growing Soybean with Redgram as intercrop with a cost benefit ratio of 1:3.24. Growing fcv tobacco as sole crop gave a net profit of Rs.11,445/- with a cost benefit ratio of 1:1.57. Thus there was an additional profit of Rs.7,120/ha by growing Soybean + Redgram over the standard practice of monocropping of tobacco in black cotton soils.
- Among the 60 germplasm accessions screened for various diseases, Coker 176, Kutsaga 110, L 2902 and Tanta were resistant to Tobacco Mosaic Virus; Q.29, Frangam, Okinawa -12, NLS.2, NLS.3 and

NLS.4 were resistant to root-knot nematode *Meloidogyne javanica*. Among the 21 Burley accessions, N 503, Leca-10, B.105 and Burley Spartoon showed RKI less than 1.0. Among the wild species of *Nicotiana*, *N. plumbaginifolia* and *N.repanda* were resistant to *Meloidogyne javanica*.

- FCV selections, L 1247, L.1256 and L. 1274 were found resistant to both black shank and TMV diseases.
- Akomin 0.3 and 0.4% with three sprays at weekly interval gave good control (88%) of leaf blight disease in nursery. A new chemical "score", @1.0 and 1.5% was found promising in controlling anthracnose disease in nursery.
- Studies on solarization indicated that white transparent alkathene 100 G for 4 weeks in combination with neem leaf @ 500g/m² has reduced the root-knot incidence, RKI being 1.25 in a scale of 0 to 5.
- A new contact cum systemic insecticide viz., Pymetrozine 25% WP at 200g and 100g a. i. /ha and acephate 75% SP at 750g a. i. / ha gave 100% mortality of aphids up to seven days after spraying and effectively controlled the tobacco aphid *Myzus nicotianae* up to 14 days after spray-

ing. These treatments recorded significantly higher yields of green leaf, cured leaf, bright leaf and showed better grade index than the botanicals.

CTRI RESEARCH STATION, JEELUGUMILLI

- Application of endosulfan @ 1.0 l/ha as bait mixed with 66 kg of rice bran and 16.5 kg of Jaggery gave maximum protection to transplants from tobacco ground beetles (*Mesomorpha villiger* Blanch) damage in fcv tobacco crop. Neem cake powder was found least effective.

CTRI RESEARCH STATION, VEDASANDUR

- Two selections of chewing tobacco H.V. 94-2, V. R - 2 resistant to TMV recorded 7.1 and 3.7 per cent increase in whole leaf yield, respectively over their respective recurrent parents.
- Though none of the TMV resistant selections of cigar tobacco were significantly superior to the susceptible parents KV-1 and Krishna in total leaf yield, selections H.V. 94-13, H.V. 94-9 and H.V. 94-11 emanated from the cross of KV-1 x TMVRR-3 exhibited 15.9, 9.8 and 6.8 per cent increase in whole leaf yield, respectively over their parent KV-1.

CTRI RESEARCH STATION, KANDUKUR

- ❑ Advanced breeding line CM 134 out yielded the standard controls and found promising.
- ❑ The exotic variety NLS-4 proved promising in all kinds of yield and quality characters over the controls.
- ❑ Variety L-1158 out yielded Jayasri (MR) by 17% in cured leaf and 8.5% in bright leaf.

CTRI RESEARCH STATION, DINHATA

- ❑ In an experiment conducted under breeding for brown spot resistance in Hookah and Chewing tobacco it was observed that brown spot index has come to 0-25% scale at F7 generation which does not affect quality.

CTRI RESEARCH STATION, HUNSUR

- ❑ Score @ 0.05% and Bavistin WG @ 0.1% were found effective against anthracnose infection on both leaf and stem in FCV tobacco nurseries when given as foliar sprays thrice at 10 days interval after 30 days after sowing (DAS).
- ❑ Among the several integrated schedules, combination of six weeks of soil solarization amended with neem cake applied @ 400 g / m² followed by a supportive foliar spray of Ridomil MZ after 30 DAS or application of Bordeaux mixture was the best schedule identified for effective management of soilborne fungal diseases such as damping-off, blight and black shank in FCV tobacco nurseries.
- ❑ Crude leaf extract of *Lawsonia inermis* showed good inhibition of mycelial growth of *Alternaria alternata* in *in vitro* up to 1:30 dilution.

NEW SCHEMES LAUNCHED



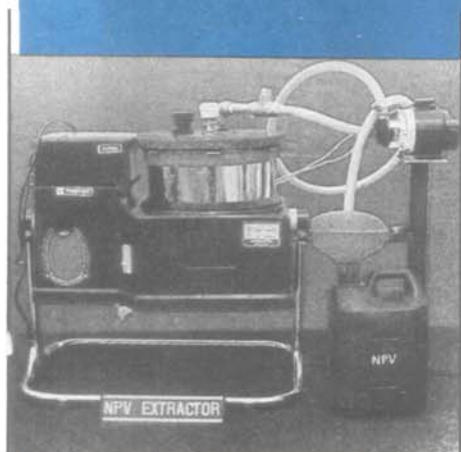
Sri Bhagirath Mal Jakhar and Sri R.P. Jhuria members of the Institute Management Committee lighting the lamp

- ❑ Biotechnology Project entitled 'Breeding tobacco varieties for biotic stresses' with a financial out lay of Rs 59,70,000/- was sanctioned by DBT to CTRI, Rajahmundry w.e.f 31.5.95. The project was inaugurated by Sri Bhagirath Mal Jakhar and Sri R.P.Jhuria, Members of the Institute Management Committee. Dr.M.S.Chari is the Project Director and Dr.T. Venkateswarlu is the Principal Investigator of the scheme. Dr.K.Nagarajan, Sri G.Ramaprasad, Dr.S.S.Hussaini are the co-investigators of this project.
- ❑ Studies on epidemiology and control of brown spot disease of tobacco caused by *Alternaria alternata* in Karnataka with an out lay of Rs.2,66,640/- was sanctioned by ICAR to CTRI RS, Hunsur w.e.f 1.5.95.
- ❑ Flusilazole a broad spectrum new fungicide from Dupont was inhibitory to both *Alternaria alternata* and *Colletotrichum tabacum* in *in vitro* studies.
- ❑ Pigeonpea + Blackgram in 1:3 row proportions followed by Chickpea + Blackgram in 4:4 row proportions recorded maximum income of Rs.. 31,482 /ha, and Rs. 30,230 /ha, respectively with a cost benefit ratio of 10.51 and 9.46, compared to the net income of Rs.11,150 /ha through monocropping of FCV tobacco.
- ❑ FCV selection II-1625 produced 10,547 kg/ha green leaf, 1618 kg/ha cured leaf, 1281 kg/ ha grade index with an increase of 18%, 22% and 28% green leaf, cured leaf and grade index, respectively over control Hema.
- ❑ In bulk trials of natu tobacco, the selection II-1327 yielded 1386 kg/ha cured leaf, an increase of 20% over the existing variety "Natu special".

CTRI RESEARCH STATION, GUNTUR

TRANSFER OF TECHNOLOGY

PROTOTYPE MACHINE TO EXTRACT NPV



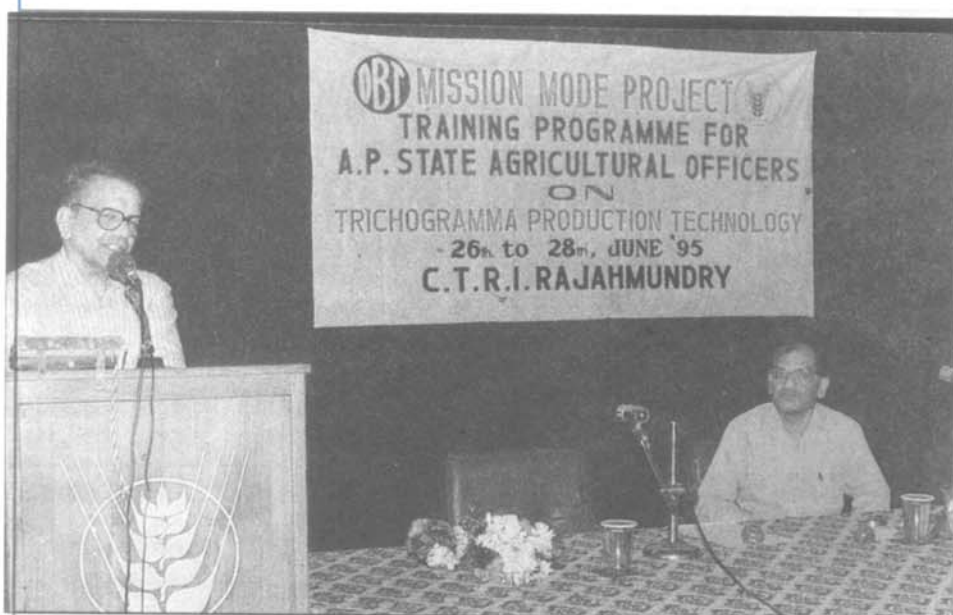
□ A newly designed equipment to extract the Nuclear polyhedrosis virus was inaugurated by Dr.M.S.Chari on 19.4.95. With this equipment 15-20 litres of NPV solution can be prepared within one hour. It is useful for commercial production of NPV on large scale. The exposure to putrid smell of larval cadavers is completely eliminated in the present process. School drop-outs and rural women can operate this NPV extractor and supply the NPV solution to needy farmers as a model cottage industry.

TRAINING PROGRAMME ON IPM OF *S. LITURA*

□ A training programme on "IPM of *S. LITURA*" for groundnut farmers of villages of Peera Ramachandrapuram (Anaparti Mandal) and Tokada (Rajagaram Mandal) was conducted at Kalavacherla under Mission Mode Project of DBT with collaboration of KVK, Kalavacherla on 7-4-95. Dr. M.S. Chari, Director, CTRI addressed the farmers in the valedictory function. About hundred farmers attended the training programme.

TRAINING PROGRAMME ON MASS PRODUCTION TECHNOLOGY OF *TRICHOGRAMMA*

□ A training programme on Mass Production Technology of *Trichogramma* was conducted from 26.6.95 to 28.6.95 under Mission Mode Project of DBT at CTRI, Rajahmundry for Agricultural Officers of Biological Control Station (Dept. of Agriculture, A.P.), Nidadavolu. Dr.M.S.Chari released a book-let on "Mass production technology of *Trichogramma*" on this occasion. Participation certificates were presented to the trainees by Dr.M.S.Chari, Director, CTRI.



Dr. M.S. Chari addressing the trainees



Trainees of the Department of Agriculture, A.P.

RADIO TALKS

- ఆరోగ్యవంతుడైన బద్ధి పొగాకు నారును పెంచుటకు కొన్ని సూచనలు. by Sri R. Subba Rao on AIR, Visakhapatnam 21-4-95
- పొగాకు పాగు చేసే నేలల్లో భూసార పరీక్ష. by Dr.V.Krishna Murty on AIR, Vijayawada 22-4-95.
- సూర్యరశ్మి ద్వారా పొగాకు నేలల్లో వేరుకాయ తెగులు తదితర రోగ నివారణ. by Dr.C.A.Raju on AIR, Visakhapatnam 24-4-95.
- Management of nursery and field crops of FCV tobacco in Karnataka by Dr. M.M. Shenoj on AIR, Mysore 2-5-95.
- కేంద్ర పొగాకు పరిశోధనాలయము, రాజమండ్రి, వివిధ భాగములలో జరుగుతున్న పరిశోధన. by Dr. M.S.Chari on AIR, Vijayawada 5-5-95.
- పొగాకు వేసే భూమిలో వేసవి దుక్కు. by Sri C.B.Sarma on AIR, Vijayawada 11-5-95.
- పొగాకు ప్రత్యామ్నాయ ఉపయోగములు. by Dr.C.V.Narasimha Rao on AIR, Visakhapatnam 22-5-95.
- పండ్ల రసాలు, జాముల తయారీ. An interview with Smt. V.V. Lakshmi Kumari on AIR, Visakhapatnam 19-6-95.

WORKSHOPS/TRAINING COURSES ATTENDED

Dr.(Kum) K.Sarala attended workshop entitled 'Theory and Methodology for Physiological and Molecular Basis of Stress Resistance in crop Plants' at WTC, IARI, New Delhi from 3-24 April, 1995.

SOUTH ZONE IV TOURNAMENTS OF ICAR

CTRI has participated in South Zone IV tournaments conducted at SBI Coimbatore from 25-30 May 1995 with a contingent of 27 players and secured 2nd place in Volley Ball (Volley) and 3rd place in pole vault. The team was led by Dr.P.S.N.Murthy, Principal Scientist. **Congratulations.**

VISITORS

CTRI, RAJAHMUNDRY

4.4.95 Dr.N.R.Singh, Godfrey Phillips India Ltd., Guntur.

7.4.95 Mr.Jayaprakas Mangur Campithier flag, Mauritius and Dr.Jagadish Foolu, Pon-Louis, Mauritius.

PAPERS PUBLISHED

Raju,C.A. G.V.G.Krishna Murthy, K.Nagarajan and M.S.Chari. A new disease of *Orobanche cernua* parasitizing tobacco, caused by *Sclerotium rolfsii*. **Phytoparasitica** 23(3) : 235-7,1995.

RETIREMENTS

Name	Designation	Reason	Date
Sri M.C.M. Reddy	Tech. Officer T-7	Superannuation	30-4-95
Sri R. Krishnamurthy	S.S.Gr.III	Superannuation	30-4-95
Sri M. Chinnappa	S.S.Gr.III	Superannuation	31-5-95
Sri Md. Ahmed Ali	Tech. Officer T-5	Superannuation	30-6-95
Sri S. Pydiraju	Tech. T-1-3	Superannuation	30-6-95

KRISHI VIGYAN KENDRA

SPECIAL TRAINING PROGRAMMES

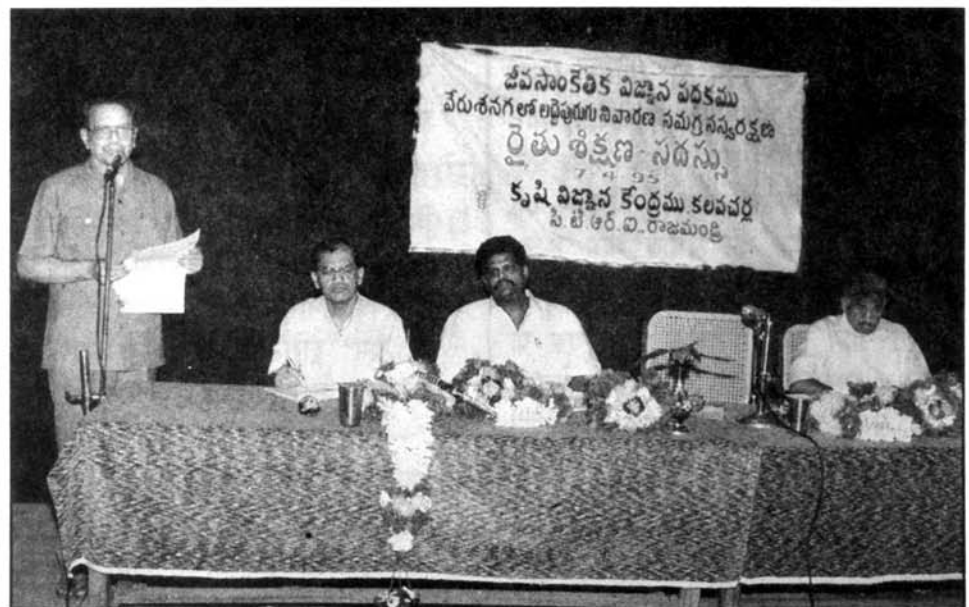
- ❑ Eight extension functionaries i.e., Veterinary Assistant Surgeons were trained in "Participatory Technology Development and field problems" on 15.6.95.
- ❑ A training programme on "Crochet wire bag making" was conducted to fifteen participants from 6.6.95 to 30.6.95.
- ❑ "Grafting techniques in Horticultural Crops" training programme was conducted for 20 rural youth females from 6.6.95 to 30.6.95.
- ❑ Under TRYSEM training programme, training on "Sea shell decoratives" was conducted to 25 rural youth females of Suryapeta village from 27.3.95 to 27.5.95.

FIRST LINE DEMONSTRATIONS ON OIL SEEDS

- ❑ Sesamum demonstrations were conducted for the benefit of ten farmers of Subhadrapeta village in four hectares and seeds of high yielding varieties YLM-11 and YLM-17 were distributed to them on 5-5-95.
- ❑ Groundnut demonstrations were conducted to five farmers of Venkannapeta in two hectares and seeds of high yielding varieties viz., RS1-1, Breeder-3, AK 12-24 and RG-141 were distributed to the farmers on 6-5-95.



Dr. M.S. Chari with Veterinary Asst. Surgeons at KVK.



Dr. M.S. Chari addressing the farmers on IPM Technology

अनुसंधान उपलब्धियाँ

सी.टी.आर.आई, राजमन्त्री

- सीधे डी. एन. ए परिवर्तन के अध्ययन ने यह साबित किया है कि डी. एन. ए. देने वाले पैरेन्ट से डी एन ए पाने वाले पैरेन्ट में सीधे इन्जेक्सन द्वारा डी एन ए परागकण नली के द्वारा परिवर्तित किया जा सकता है। भूरे रंग के लिए उत्तरदायी जीन के जयलक्ष्मी पैरेन्ट में इन्जेक्सन के द्वारा परिवर्तित किया गया।
- काली मिट्टियों में सोयाबीन को अरहर के साथ 5:1 के अनुपात में मिलवा फसल की खेती तम्बाकू के स्थान पर अधिक लाभकारी साबित हुई। इससे 7,120 रुपये का अतिरिक्त लाभ हुआ।
- एफ सी वी सलक्सन लाइन 1247 एल-1256 तथा एल-1274 ब्लैक शैक तथा टी एम वी रोगों की प्रतिरोधी साबित हुई।
- एकोरनिन का 0.3 तथा 0.4 प्रतिशत में एक-एक सप्ताह के अन्तर से पौधशाला में छिड़काव लीफ ब्लाइट रोग की रोकथाम में बहुत अधिक कारगर (88%) साबित हुआ।
- भूतपन के अध्ययन ने साबित किया है कि 100 गेज की पोलीथीन शीट 500 ग्राम प्रति वर्ग मीटर नीम पत्ती के साथ 4 सप्ताह तक भूतपन से रूट नोट नीमाटोड का प्रभाव कम हुआ।
- पाइमैटोजिन कीटनाशक 25% डब्ल्यू पी 200 ग्राम तथा एसीफेट 75% एस पी 75% एस. पी 750 ग्राम प्रति हेक्टर का प्रयोग करने से चेपा का शत प्रतिशत नियन्त्रण हुआ।

सी.टी.आर.आई. अनुसंधान केन्द्र, वेदसन्दूर

- खैनी तम्बाकू के 2 सलक्सन एच वी 94-2 तथा वी. आर-2 टी एन वी प्रतिरोधी होने के साथ 7.1 तथा 3.7 प्रतिशत कुल पत्ती की उपज वृद्धि प्राप्त की।

सी.टी.आर.आई. अनुसंधान केन्द्र, हुनसूर

- प्रक्षेत्र अध्ययन में फ्लूसिलाजोल फफूँदनाशक, एलटरनेरिया एलटरनेटा तथा कोलेटोट्राइकम टेबेकम दोनों के साथ निशेधित साबित हुई।

सी.टी.आर.आई. अनुसंधान केन्द्र, गुन्दूर

- अरहर - उडद 1:3 के अनुपात में तथा इसके बाद चना - उडद 4:4 के अनुपात में बोने से क्रमशः 31, 482 रुपये तथा 30, 230 रुपये प्रति हेक्टर की अधिकतम आय हुई। इससे खर्च तथा लाभ का अनुपात क्रमशः 10.51 तथा 9.46 था जबकि एक फसल लेने से कुल आय रु.11,150 प्रति हेक्टर थी।

प्रौद्योगिकी का हस्तांतरण

- मिशन मोड परियोजना के अन्तर्गत पीरा रामचन्द्रापुरम तथा तोकाडा ग्रामों के 100 किसानों के लिए मूंगफली में "आई. पी. एम" द्वारा तम्बाकू केटरपिल्लर की रोकथाम के लिए कलवाचर्ला में दिनांक 7-4-1995 को एक प्रशिक्षण कार्यक्रम आयोजित किया गया।

कृषि विज्ञान केन्द्र

विशेष प्रशिक्षण कार्यक्रम

- दिनांक 15-6-95 को 8 चिकित्सा सहायकों को पी. टी. डी में प्रशिक्षित किया गया।
- दिनांक 6-6-95 से 30-6-95 तक क्रोशिया से वायर बेग बनाने के विषय में 15 महिलाओं को प्रशिक्षण दिया गया।
- बागवानी फसलों में कलम लगाने के विषय में 15 महिलाओं के लिए दिनांक 6-6-95 से 30-6-95 तक प्रशिक्षण आयोजित किया गया।
- स्वरोजगार के लिए प्रशिक्षण योजना के सम्बन्ध में समुद्री उत्पादों से विभिन्न सजावटी वस्तुएँ बनाने के सम्बन्ध में सूर्यपेटा से 25 ग्रामीण युवतियों के लिए दिनांक 27-3-95 से 27-5-95 तक प्रशिक्षण कार्यक्रम आयोजित किया गया।

तिलहन में प्रदर्शन

- सुभद्रमपोटा गाँव में तिल की फसल में 4.00 हेक्टर भूमि में प्रदर्शन आयोजित किया गया। कृषकों को अधिक उपज देने वाली किस्मों के बीज प्रदान किये गये।
- वेंकन्नपेटा ग्राम के 5, कृषकों को मूंगफली की अधिक उपज देने वाली किस्मों जैसे आर एस 1-1 ब्रीडर-3, ए. के 12-24 तथा आर जी - 141 के बीज वितरित किये गये तथा 2 हेक्टर भूमि में प्रदर्शन आयोजित किया गया।

Edited & Compiled by Y.V. Suryanarayana, M. Ramam and C.V. Narasimha Rao

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