

# NRCS

# News Letter



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No. 1

**NATIONAL RESEARCH CENTRE FOR SPICES**

**P. O. Box No. 1701, Calicut - 673-012, Kerala**

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## NRCS

### An Introduction

Kerala is the land of spices. The flavour and fragrance of spices have attracted foreigners to the Kerala coast as early as 1487. Today, spices contribute about Rs. 3000.00 million to our economy by way of foreign exchange earning. Realising the importance of spices in our economy it is but proper that Indian Council of Agricultural Research established a full fledged research institute for spices in the coastal district of Kerala in April, 1986 with a regional Centre at Appangala, Kodagu district, Karnataka.

NRCS conducts research on crop improvement and production as well as protection and technological aspects of black pepper, cardamom, ginger, turmeric, cinnamon, clove, nutmeg and allspice. At present 25 scientists and about an equal number of technical persons are directly involved in the research of these crops.

The NRCS is located in an area of 14 ha within the Calicut Corporation limits on the Calicut-Wynad Road at Chelavoor (Pallithazam), 10.5 km

away from the city. The research farm of the Centre (94.08 ha) is situated at Peruvannamuzhi, about 50 km north-east of Calicut. The Cardamom Research Centre (NRCS), Appangala has an area of 14 ha located 8 k.m. away from Madikeri on the Madikeri-Bhagamandala Road in Kodagu district of Karnataka.

## RESEARCH ACHIEVEMENTS

### New Black Pepper Varieties

Two high yielding black pepper selections of *Karimunda* viz., *KS-14* (Sreekara) and *KS-27* (Subhakara) recommended for release yield better than Karimunda local and Panniyur-1. Sreekara yields 4.78 kg green pepper/vine and Subhakara 4.18 kg green pepper/vine. *KS-27* (Subhakara) has since been released for general cultivation.

### New Turmeric Cultivars

The new selections of turmeric *Suguna* (PCT-13) and *Sudarshana* (PCT-14) of NRCS recommended for

release has an yield potential of 60.3 t/ha and 54.8 t/ha fresh rhizomes, respectively. *Suguna* (PCT-8) has already been released.

### High Production Technology in Pepper

Since land is a limiting factor in Indian agriculture the immediate alternative is to increase productivity from unit area of land. NRCS in this endeavour has developed a viable high production technology (HPT) in black pepper by which the present productivity level can be increased to more than 4-5 times. The new technology is based on the following agro-techniques.

- \* Adoption of phytosanitary measures
- \* Replanting of old black pepper gardens with high yielding elite lines.
- \* Balanced nutrition
- \* Adoption of timely plant protection measures and
- \* Cultural operations

### Slow Release Fertilizer in Pepper Production

Studies conducted in laboratory and field highlighted the superiority of

**LATEST IN RESEARCH**

A preliminary field evaluation of tissue cultured cardamom plant along with seedlings and suckers for two years at Appangala Centre revealed no significant differences for yield and yield attributes among the three types of planting material.

**IN PIPELINE**

A new high yielding selection of black pepper namely 'Amputan' is undergoing pre-release trials at NRC Research Farm, Pervanamam.

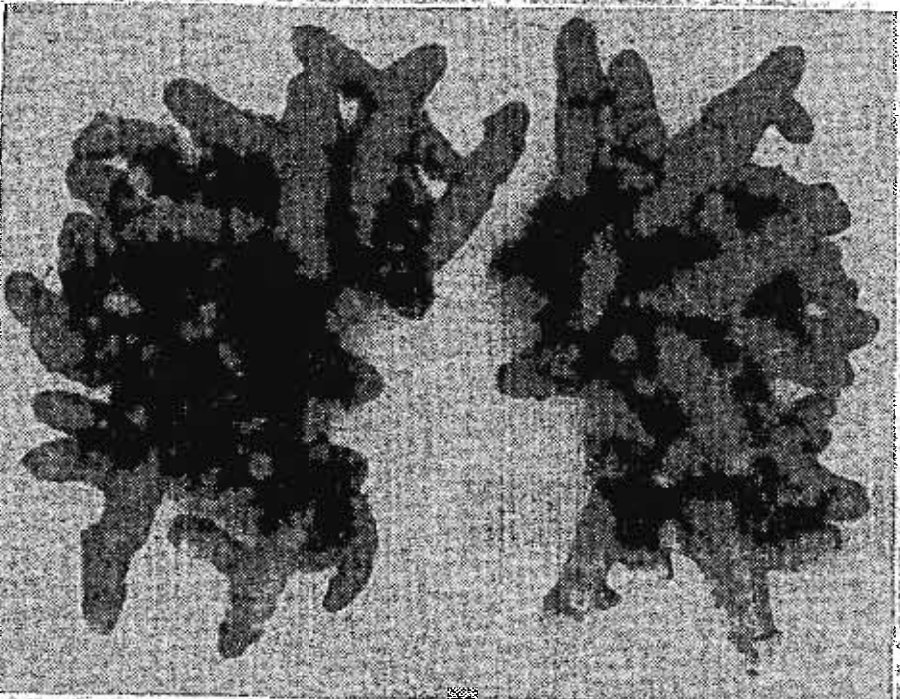
**ALL INDIA COORDINATED RESEARCH PROJECT ON SPICE (AICRPS)**

Coordinated project on spices initiated in 1971 envisages research on cardamom, black pepper, ginger, turmeric, coriander, cummin, fennel, fenugreek and large cardamom. The research programme under the AICRPS being carried out in 15 coordinating



Black Pepper Variety, KS - 27

the world amounting about 853 accessions. Besides this, 249 cardamom, 228 ginger, 393 turmeric, 313 nutmeg, 152 clove and 1821 cinnamon accessions are also maintained at the Centre.



New Turmeric Varieties of NRCS

**GERMPLASM CONSERVATION AND COLLECTION**

NRCS has got the largest germplasm collection on black pepper in

Two OP programs of black pepper under field evaluation at Srisi were found to be field tolerant to Phytophthora p.

**DISEASE CONTROL**

Micropropagation of ginger through leaf callus culture is standardised. Technology for meristem culture of cardamom is also perfected at the Appangala Centre of NRCS (Spices).

**BIOTECHNOLOGY**

of subsoil, the pepper standard black pepper yield and also the growth of applied nitrogen. This increased resulted in high percentage of recovery for longer periods in soil which nitrogen was slow and was persistent 228 ginger, 393 turmeric, 313 nutmeg, 152 clove and 1821 cinnamon accessions. Besides this, 249 cardamom, 228 ginger, 393 turmeric, 313 nutmeg, 152 clove and 1821 cinnamon accessions. The release of urea-N from urea-N coated urea in black pepper

centres spread over different agro-climatic regions covering 9 states falling under respective agricultural universities except Gangtok centre which is an ICAR based Institute.

The main objectives of the project are:

- \* Evolving high yielding varieties resistant/tolerant to diseases and pests.
- \* Standardisation of agro-techniques for the crops under different agro-climatic conditions.
- \* Evolving control measures for major pests and diseases.
- \* Working as an interface and feed back between Agricultural Universities NRCS, CPCRI and ICAR.

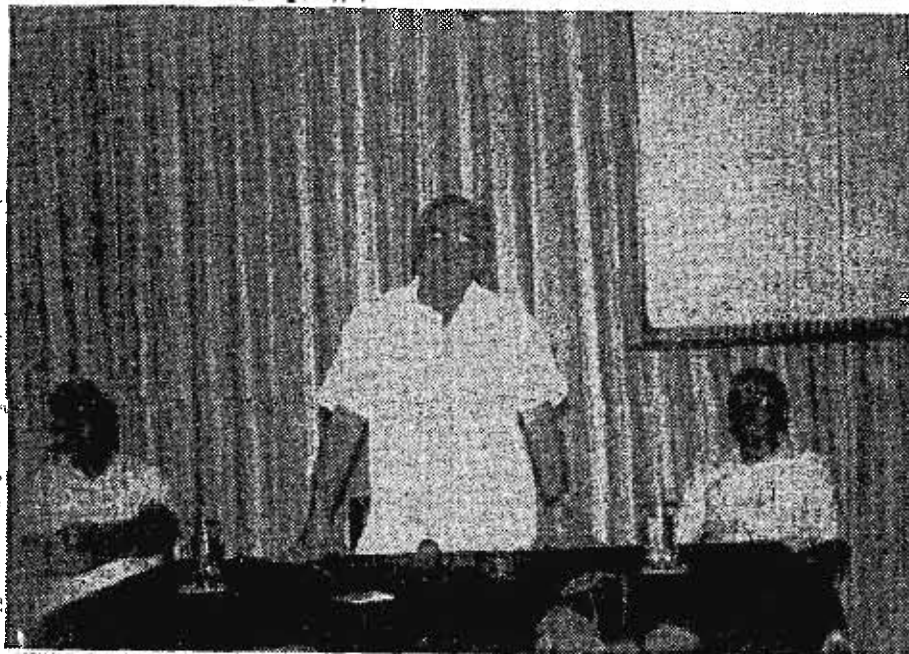
Workshop of the All India Co-ordinated Research Project on Spices are held regularly.

#### Improved varieties released from Coordinating Centres

The X Workshop of AICRPS conducted at TNAU, Coimbatore recommended the release of two advanced cultures of black pepper from Pepper Research Station, Panniyur (KAU) viz., Panniyur-2 (Krishna) and Panniyur-3 (Shyama) and two selections of cardamom from Guntur Centre of APAU viz., Sadhana (CS-4) and Swathi (CS-6) besides the black pepper and turmeric varieties of NRCS.

#### Minister's Visit

Hon'ble Minister of State for Commerce, Sri. Arangil Sreedharan visited National Research Centre for Spices on 21-7-1990. The minister held discussion with the scientists and also visited the various laboratories and highly appreciated the work carrying out in the institute.



Union Minister of State for commerce Sri Arangil Sreedharan addressing the scientist off. Director Dr. A. Ramadasan is also seen

#### DDG(H)'s Visit

Dr. K.L. Chadha, Deputy Director-General (Hort.) visited NRCS Cardamom Research Centre at Appan-gala on 3-5-1990 and reviewed the research work.

#### Expert Team for Foot Rot Study

An expert team was constituted by Govt. of Kerala to investigate foot rot disease of black pepper in Idukki and Wynad districts during 1990. Dr. A. Ramadasan, Offg. Director, NRCS, was the Chairman and Dr. Y. R. Sarma, Scientist SG (Pl. Path.), NRCS was member besides officials of State Department of Agriculture and KAU. The team submitted a detailed report which was accepted by the Govt. of Kerala.

#### Research Council 1990

The Third Annual Research Council Meeting (ARC) was held at NRCS, Calicut during April 20-22, 1990. Four new projects were approved

and the other ongoing 29 projects were reviewed and finalised the technical programme.

#### FAC Meeting

The Farm Advisory Committee Meeting was held on 29-6-1990 at NRCS Research Farm, Peruvanimuzhi under the Chairmanship of Dr. A. Ramadasan, Offg. Director. Sixteen scientists, Farm Supdt., Asst. Adm. Officer and Asst. Fin. & Accts. Officer attended the meeting. The committee reviewed the proceedings of the previous meeting and discussed the various farm activities.

#### STUDY CIRCLE

Study circle met 5 times during the period January-June, 1990. A total of 22 papers were approved for publication.



### Research Papers Presented:

1. Thomas, V.T., Zachariah, T.J. and Ramadasan, A. Proline accumulation under PEG induced water deficit stress in leaf discs of selected black pepper cultivars.
2. Babu, N.K., Naik, G.V. and Ravindran, P.N. Two new taxa of *Piper* from Kerala, India with a note on their origin.
3. Vasantha, S., Thomas, V.T., Ramadasan, A. and Zachariah, T.J. Drought tolerance in black pepper cultivars — an evaluation of physiological parameters.
4. Ratnambal, M.J., Babu, N.K., Nair, M.K., Thomas, T.V. and Edison, S. PCT-13 and PCT-14 two high yielding varieties of turmeric.
5. Ratnambal, M.J., Ravindran, P.N., Nair, M.K. and Babu, N.K. Two high yielding selection of Karimunda.
6. Thomas, V.T., Samsudeen, K. and Ravindran, P.N. Callus proliferation from leaf tissues of black pepper cultured *in vitro*.
7. Sasikumar, B. and George, J.K. Direct single node propagation of black pepper.
8. Ravindran, P.N., Sasikumar, B. and Babu, N.K. Genetics of shoot tip colouration in black pepper.
9. Babu, N.K., Sasikumar, B., Ratnambal, M.J., George, J.K. and Ravindran, P.N. Genetic variability in turmeric.
10. Krishnamoorthy, B., Rema, J. and Sasikumar, B. Progeny analysis in cinnamon.
11. Babu, N.K., Samsudeen, K. and Ratnambal, M.J. *In vitro* plant regeneration from leaf derived callus in ginger.
12. Krishnamoorthy, B., Sasikumar, B., Rema, J., Sayed, A.A.M. and Abraham J. Variability and association in nutmeg.
13. Korikanthimath, V.S. Shade management in relation to high productivity in cardamom.
14. Eapen, S.J. Nematode pests of small cardamom: Present status and future prospects.
15. Korikanthimath, V.S., Venugopal, M.M., Lukose, R. and Eapen, S.J. Hints for scientific management of cardamom plantations.
16. Gopalan, A., Zachariah, T.J., Babu, N.K. and Ramadasan, A. Effect of different methods of white pepper preparation on the chemical and aroma quality in selected cultivars of *Piper nigrum*.
17. Korikanthimath, V.S. Response of cardamom (*Elettaria cardamomum* Maton) to applied potassium — A Review.
18. Zachariah, T.J. and Lukose, R. Aroma profile of selected germplasm accessions in cardamom.
19. Rema, J. and Krishnamoorthy, B. Vegetative propagation of *Cinnamomum verum* by cuttings.
20. Sadanandan, A.K., Abraham, J. and Anandraj, M. Impact of high productivity technology on productivity and diseases incidence of black pepper.
21. Vasantha, S. and Ramadasan, A. Leaf expansion rate under moisture stress in black pepper.
22. Reddy, B.N. Effect of plant density on the yield and nutrient availability of black pepper.

### PARTICIPATION IN SYMPOSIA SEMINARS AND TRAINING

Indian Phytopathological Society, 42nd Annual Meeting and Symposium on Molecular Biology and Plant Diseases held at S.V. University, Tirupathi, 3-5 January, 1990 — Y.R. Sarma, G. Nageswara Rao.

Pepper Seminar — Organised by Kodagu Planters Association, Madikeri, 30th January, 1990 — A. Ramadasan, Y.R. Sarma, P.N. Ravindran, A.K. Sadanandan, K.V. Ramana, T. Premkumar, V.S. Korikanthimath, M.N. Venugopal, Regy, Lukose, S.J. Eapen.

The 77th Session of Indian Science Congress, Cochin, 5-9 February 1990 — A. Ramadasan, Y.R. Sarma, A.K. Sadanandan, Johnson, K. George.

International Symposium on Natural Resources Management for a Sustainable Agriculture, New Delhi, 6-10 February, 1990 — A.K. Sadanandan and V.S. Korikanthimath.

International Symposium on Genetic Engineering and Tissue Culture for Crop Pests and Disease Management, June 13-15, 1990 at TNARI Coimbatore-641 003 — Y.R. Sarma, P.N. Ravindran and K. Nirmal Babu

### Deputation Abroad

International Conference on Plant Protection in the Tropics, Kuala Lumpur, Malaysia, 20-23 March, 1990 — S. Edison.

### COMING EVENTS

PLACROSYM-IX: Placrosym-IX will be held at Bangalore from 5-7 December, 1990. NRCS Scientists are participating in the Symposium.

**AICRPS WORKSHOP** — The XI Workshop of AICRP on Spices will be held during February 12-14, 1991. The venue will be National Research Centre for Spices, Calicut.

**Training Activities**

Spices Production Technology in collaboration with Directorate of Extension, New Delhi.

Date: 17-21 November, 1990.

Venue: NRC for Spices, Calicut.

Nursery Management in Spices.

Date: 4-5 February, 1991.

Venue: NRC for Spices, Calicut.

**LIBRARY**

NRCS Library has till date subscribed 2854 books, 1591 reprints, 67 foreign and 76 Indian Journals. Indexing and Abstracting journals and content pages of other journals were

circulated to NRCS Cardamom Research Centre, Appangala. Library continued the publication of Agri. Sci. Tit-Bits bimonthly containing news and notes relevant to spices research and agricultural science and also Current Awareness Service on Spices and Condiments.

**TECHNICAL PUBLICATIONS/REPORTS**

1. Sadanandan, A.K., J. Abraham and Anandaraj, M. 1990. High Production Technology in Black Pepper, NRCS, Calicut.
2. Premkumar, T. and Sarma, Y.R. Research Highlights 1989-90. NRCS, Calicut.
3. Edison, S. and Johnny, A.K. Research Highlights 1989, AICRP on Spices, NRCS, Calicut.

**INTERNATIONAL SOCIETY FOR SPICES (ISS)**

An international society for the advancement of research development industry and trade of spices and allied crops has been launched. The society will be functioning from NRCS, Calicut. A meeting of the research workers held on 12-9-90 at NRCS nominated a small ad-hoc committee to organise, register and to carry out the day to day work in connection with the founding of the society. Besides other activities the society is planning to publish a journal exclusively for spices and allied crops. The journal is named as "International Journal for Spices". The first issue of the journal is expected to be out by September-October 1991. ISS in collaboration with NRCS and ICAR will be organising an International Symposium on 'Spices Research and Development' in 1992. The society will be formally inaugurated in February 1991.



Dr. K. L. Chadha, D D G (Horticulture) visiting NRCS Cardamom Research Centre at Appangala. Offg. Director Dr. A. Ramadasan is also seen

### New Posting

Name and Designation	Posted at	Date of joining
Sri Ramakrishnan Nair, Scientist (Genetics & Cytogenetics)	NRCS, Calicut	15-5-1990
Sri S. Sreekumaran, Jr. Stenographer	NRCS, Calicut	28-2-1990

### Promotions:

Sl. No.	Name and designation	Present position	Promoted as	Station
1.	Smt H.B. Lakshmi	Gr.I (Mazdoor)	Grade II	Appangala
2.	Sri K.M. Madashetty	Gr.I (Mazdoor)	Grade II	Appangala
3.	Smt P.K. Manikka	Gr.I (Mazdoor)	Grade II	Appangala
4.	Sri B.T. Velayudhan	Gr.I (Watchman)	Grade II	P'Muzhi
5.	Sri Gowdigeri Shetty	Gr.I (Mazdoor)	Grade II	Appangala
6.	Smt Marjanamma	Gr.I (Mazdoor)	Grade II	Appangala
7.	Smt K.M. Chikasakamma	Gr.I (Mazdoor)	Grade II	Appangala
8.	Sri C. Bhaskaran	Gr.I (Mazdoor)	Grade II	P'Muzhi
9.	Smt T.K. Girija	Gr.I (Mazdoor)	Grade II	Appangala
10.	Sri B.M. Sheshappa	Gr.I (Mazdoor)	Grade II	Appangala
11.	Smt B.R. Janaki	Gr.I (Mazdoor)	Grade II	Appangala
12.	Sri B.M. Cheniappa	Gr.I (Mazdoor)	Grade II	Appangala
13.	Sri P.K. Bliappa	Gr.I (Watchman)	Grade II	Appangala
14.	Sri E. Kunhayyappan	Gr.II (Watchman)	Grade III	P'Muzhi
15.	Sri E.K. Nenu	Gr.II (Watchman)	Grade III	P'Muzhi
16.	Sri K.M. Thimmaiah	Gr.II (Watchman)	Grade III	Appangala
17.	Sri N. Ayyappan	Gr.I (Mazdoor)	Grade III	P'Muzhi
18.	Smt B.L. Seethu	Gr.I (Mazdoor)	Grade III	Appangala
19.	Smt H.B. Gaugi	Gr.I (Mazdoor)	Grade III	Appangala
20.	Smt C. Sunanda	Jr. Clerk	Sr. Clerk	NRCS, Calicut
21.	Smt P.V. Sali	Jr. Steno	Steno- grapher	NRCS, Calicut

Published by Dr. A. Ramadasan, Director, NRCS, Calicut

Editor: Dr. B. Sasikumar; Members: Dr. Johny A Kallapurackal, Mr. P. A. Sherif, NRCS, Calicut 673 012, Kerala

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