



S. No.	Name of the participant	Seminar/ Symposia / Training / Meetings
		<ul style="list-style-type: none"> National Consultation on “Seed Spices Biodiversity and Production for Export-Perspective, Potential, Threats and Their Solution” at NRCSS, Ajmer from 7th, July, 2010. National Symposium on Integrated Weed Management in the era of Climate Change at NASC, New Delhi from 21st – 22nd, August, 2010. Training programme under NHM during 17th -19th October,2010 at KVK Jaisalmer, Rajasthan and delivered a lectures on “Integrated Weed Management in Seed Spices”. 4th Indian Horticulture Congress2010 at New Delhi from 18th -21st Nov., 2010. One day Farmers Field Day cum training programme for Ajwain cultivation in dry land area was organized at Kohir village Medak district (A.P.).
8.	Dr.R.S. Mehta	<ul style="list-style-type: none"> National group meeting of research workers (XXI Workshop) of All India Coordinated Research Project on Spices (ICAR) held on 5-6 July 2010 . National Consultation on “National Consultation on “Seed spices Biodiversity and Production for Export – Perspective, Potential, Threats and their solutions” held o 7th July 2010. National symposium on Integrated Weed Management in the Era of Climate Change”, NASC, on 21-22 August 2010. XXI Workshop of AICRP on Spices held on 5-6 July,2010 Interface meeting of Directors/ Project Coordinators of Crop Science and Horticulture Division of ICAR held on 17-18 May 2010 Short course on Cropping System model application in Land resource management held on 18-22 October ,2010 A Seminar on New dimensions for enhancing production & productivity of seed spices in Andhra Pradesh” held on 11-12 November 2010 at CRIDA, Hyderabad ZREAC meeting of Zone III-A of SKRAU, Bikaner (Rajasthan) held on 7-8 Sept.2010 at ARS, Durgapura- Jaipur (Rajasthan).
9.	Dr. R. S. Meena	<ul style="list-style-type: none"> National Seminar on “Production of quality seed & plant materials-health management in horticulture crops” at New Delhi, on 8-3-10 to 13-3-10. National consultation on “Section 41: Rights of communities under PPV & FR Act, 2001” during March 25-26, 2010 held at New Delhi. National consultation on “Agro-biodiversity management” on 27 March, 2010 held at New Delhi.



S. No.	Name of the participant	Seminar/ Symposia / Training / Meetings
		<ul style="list-style-type: none"> National Group Meeting of Research Workers (XXI workshop) of “All India co-ordinate Research Project on Spices” at NRCSS, Ajmer, 5-6 July 2010. National Consultation on “Seed Spices Biodiversity and Production for Export- Perspective, Potential, Threats and their Solutions” 7th july2010.
10.	Sh. M.A. Khan	<ul style="list-style-type: none"> National group meeting of research workers (XXI Workshop) of All India Coordinated Research Project on Spices(ICAR) held on 5-6 July 2010 . National Consultation on “National Consultation on “Seed spices Biodiversity and Production for Export – Perspective, Potential, Threats and their solutions” held o 7th July 2010.
11.	Sh. Mukesh Vishal	<ul style="list-style-type: none"> 88th Foundation Course for ARS organized at NAARM, Hyderabad. 4th Nov 2009 to 3rd March 2010. Workshop of FAO sponsored Project on “Establishment of the Information Sharing Mechanism for Monitoring the Implementation of Global Plan of Action (GPA)”. 17th April, 2010 at NBPGR, New Delhi. Training Programme on “IT based Decision Support System for E-learning content management” under NAIP (L & CB), June-2-8, 2010. Two day Orientation / Installation training under NAIP Project on “Strengthening Statistical Computing for NAARS.” 21 June 2010 to 22 June 2010 at RCA, Udaipur. National group meeting of research workers (XXI Workshop) of All India Coordinated Research Project on Spices (ICAR) held on 5-6 July 2010 at NRCSS, Ajmer. National Consultation on “Seed Spice Biodiversity and Production for Export, Potential, threats and their solution.” Held on 7th July 2010 at National Research Centre on Seed Spices, Ajmer (Rajasthan). Training programme on SAS: “A comprehensive overview of the SAS” under NAIP on “Strengthening Statistical Computing for NARS” funded by ICAR through NAIP. 19 July, 2010 to 23, August, 2010 at RCA, Udaipur.
12.	Dr. S. Choudhary	<ul style="list-style-type: none"> National Consultation on “Seed Spices Biodiversity and Production for Export- Perspective, Potential, Threats and their Solutions” 7th july2010 National Group Meeting of Research Workers (XXI workshop) of “All India co-ordinated Research Project on Spices” at NRCSS, Ajmer, 5-6 July 2010.

7. LINKAGES AND COLLABORATION

The National Research Centre on Seed Spices is maintaining linkages with the following institutes/agencies

- Indian Institute of Spices Research (IISR), Calicut
- National Bureau of Plant Genetic Resources (NBPGR), New Delhi
- All India Coordinated Research Project on Spices, (AICRPS) Calicut
- Central Arid Zone Research Institute (CAZRI), Jodhpur
- National Research Centre for Medicinal & Aromatic Plants (NRCMAP), Anand
- Indian Institute of Horticulture Research, Bangalore
- Central Institute of Arid Horticulture (CIAH), Bikaner
- National Bureau of Agriculturally important Insects, Bangalore
- Indian Agricultural Research Institute, New Delhi
- Central Soil Salinity Research Institute, Karnal
- ICAR Research Complex, Regional Station, Ranchi
- Central Research Institute for Dry Land Agriculture, Hyderabad
- Indian Agricultural Statistics Research Institute, New Delhi
- IARI Regional Station, Wellington (TN)
- Central Institute of Temperate Horticulture, Srinagar
- International Crop Research Institute for Semi-arid Tropics, Hyderabad
- Directorate of Sorghum Research, Hyderabad
- CPCRI, Regional Station, Kahikuchi, Assam
- SAU's such as RAU, Bikaner, MPUAT, Udaipur, SDAU, Dantiwara, CCS,HAU, Hisar, SKUAT, Sri Nagar, APHU, Hyderabad and NDUAT, Faizabad.
- Spices Board, Cochin
- Directorate of Arecanut and Spices Development (DASD), Calicut
- Farmers, NGOs and KVKs

8. AICRP/COORDINATION UNIT/NATIONAL CENTRE

The activities of AICRP(spices) are being looked after by the project coordinator at IISR, Calicut. To have focused attention and effective implementation, the formation of separate coordinated project exclusively for seed spices crops is worthwhile. Presently NRCSS is jointly working with IISR, Calicut and cooperating centres to provide support to AICRP (spices) through conduction of basic and strategic research on priority areas of seed spices.

9. MEETINGS

X Institute Research Council (IRC) Meeting

The 10th Institute Research Council (IRC) meeting was held on 30th and 31st of August 2010 to review the research progress of institute. The meeting was chaired by Prof. M.M. Anwer, Director NRCSS, Ajmer and projects status was presented by Dr O.P. Aishwath, member secretary IRC. Meeting was begun with welcome address by the Chairman followed by introduction among the participants. This meeting was attended by 35 scientific personnels including national level experts and collaborators of Inter-Institutional projects. Besides NRCSS scientists, 20 participants were from other ICAR institutes, SAUs and State Department of Agriculture. There were six sessions hold on Soil and Agronomy, Horticulture, Plant Protection, Crop Improvement, Basic Sciences and Social Sciences and these sessions were chaired by Dr. D.L.N. Rao (IISS, Bhopal), Dr. Chi. R. Chelvan (IIHR, Bangalore), Dr Janardan Jee (ICAR Res. Comp. for E. Reg., Patna), Dr. B.B. Vashistha (Member QRT and Ex-Director NRCSS), Dr. Leela Sahajram (IIHR, Bagalore) and Dr. V. Venkatasubramanian (ADG Ext., ICAR, New Delhi), respectively. During these sessions, ongoing 8 projects on Soil and Agronomy, 4 projects on Horticulture, 8 projects on Plant Protection, 11 projects on Crop Improvement, 4 projects on Basic Sciences and 3 projects on Social sciences were presented and thoroughly discussed to make them robust for national and international standard. There were two new project proposals on Composite Farming and Seed Spices Consumption Pattern were presented and discussed for the final approval from the house. The meeting was ended with vote of thanks to the chair, members, experts, collaborators and fellow workers.

IX Research Advisory Committee (RAC) Meeting

Due to some unavoidable situations the IX Research Advisory Committee meeting of the institute could not be conducted within 31st march, 2011. The same was conducted on 25th April, 2011 and the information will be given in the next report.

VII Institute Management Committee (IMC) Meeting

VII Institute Management Committee Meeting was held at NRCSS, Ajmer on February 21, 2011. The meeting was attended by Dr. M. M. Anwer, Director, NRCSS, Ajmer, Dr. P. S. Naik, Project Coordinator, AICRP on Potato, CPRI, Shimla, Dr. S. N. Sinha, Principal Scientist and Head, IARI Regional Station, Karnal, Dr. Gopal Lal, Principal Scientist, NRCSS, Mr. P. K. Tiwari, AFAO, CAZRI, Jodhpur and Sh. L. K. Sharma, AAO, NRCSS, Ajmer and special invitee from QRT team Dr. B. B. Vashishtha, Ex Director, NRCSS, Ajmer. The IMC meeting agenda started with the discussion on action taken on recommendation of VI IMC meeting followed by



Members of IMC, NRCSS visiting experimental farm

presentation on research activities and achievements of the centre by Dr. G. Lal. The IMC was highly satisfied on the research highlights and achievement, extension and transfer of technology carried out on the centre. The committee is also highly satisfied with the publication and records, progress of the construction of Scientist training hostel but expresses their concern on slow progress of construction of conference hall work. IMC recommends the substitution of equipments as per current research programme. The committee feels that the flow of expenditure during 2009-10 was very good and there is need to expedite plan expenditure during 2010-11.

IIQRT

The preliminary meeting of the 2nd QRT of NRCSS, Ajmer was held in the chamber of DDG (Hort) on 16th August, 2010 at 10:00AM.

The team reached NRCSS, Ajmer by evening of 16th August, 2010. They started the review with a visit to research farm, farm yard/threshing yard/ farm implements, processing plant/mobile processing plant. They also had discussion with the scientists of the institute.

The second meeting was conducted during 19th September -23rd September, 2010.



The QRT team reached Ajmer on the morning of 19th September, 2010. Discussions were held with the scientists of social science and plant protection group. The team visited seed spice growing area of Jodhpur, Barmer, Jaisalmer and Gujarat regions.

Third meeting of 2nd QRT was held at Spice Board, Cochin, IISR Calicut and DASD Calicut during 22nd October, - 23rd October, 2010.

The fourth meeting of QRT was held during 16-18th January, 2011 to have a final interaction with the director and scientists of the institute to have a clear picture of what recommendations QRT should suggest.

The drafting work is on and the report will be submitted to ICAR by beginning of July, 2011

10. INFRASTRUCTURE DEVELOPMENT

Works under Plan:

Scientist's Training Hostel:

The construction work of the training hostel has been divided into two phases due to paucity of funds. The phase one work estimated to cost Rs. 145.96 lakhs is in fast progress and likely to be completed in first half of the year 2011-12. The proposal for the construction of the phase-II is under consideration at the ICAR head. The construction of the phase-II is necessary to have the appropriate infrastructure for the scientists' and other likely professional trainings.

Conference Hall:

The construction work of a Conference Hall is in fast progress and the work is being taken up at an estimated cost of Rs. 95.00 lakhs through CPWD. The capacity of the hall has been revised with due permission from the council so as to accommodate up to 150 plus delegates at a time.

Works under Non Plan

Main Building

The additional requirement of space for newly joined scientists' sitting and working was

addressed through some alterations under petty works. Two large laboratory rooms on the first floor of the main building have been provided with the partitions so as to develop a scientist chamber and through doors to adjoining altered laboratory. This petty work helped in accommodating three scientists and their technical teams.

Campus Improvement

Construction of five new petty work items have been approval, sanctions accorded and works are to be taken up through CPWD. The details are as follows:

1. C/o Road in D Block at NRCSS Ajmer at an estimated cost of Rs. 4,98.600/-
2. Extension of Road in B Block at NRCSS Ajmer at an estimated cost of Rs. 4,89.400/-
3. Provision of Toe wall & berm on farm road at NRCSS Ajmer at an estimated cost of Rs. 4,77.900/-
4. C/o Kerb stone and Footpath at NRCSS Ajmer at an estimated cost of Rs. 4,92.400/-
5. Laying of Service Connection cable for the Residential Quarters at NRCSS Ajmer at an estimated cost of Rs. 5,07.465/-



Conference hall work progress



Scientist training hostel work progress

11. LIBRARY ACTIVITIES

The library of the centre was set up to provide support to research activities of the centre. The efforts are being made to equip the library to function as National Information Storage, retrieval and dissemination system for seed spices and related areas. At present library has a collection of 1278 books. The library is subscribing 30 research journals presently. NRCSS is also a party of CeRA.

12. PUBLICATIONS

Papers published in research journals (National/ International)

- Aishwath. O.P., Mehta, R.S., Lal, G., Anwer, M.M., Dagar, J.C., Yadav, R.K. and Singh, R. (2010) Growing seed spices a boon for problematic areas. *Indian Horticulture* 55(4):19-21.
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Abstract presentation in conferences/ Seminars/symposium

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- Kakani, R.K. and Anwer, M.M. (2010) Plant genetic Resources of Seed Spices. Seminar on "New Dimensions of Enhancing Production and Productivity of Seed Spices Cultivation in Dry Land Areas of Andhra Pradesh, during Nov. 11-12, 2010 at CRIDA Hyderabad.
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13. RAC MEMBERS

The Indian Council of Agricultural Research (ICAR) New Delhi constituted a Research Advisory Committee vide order No. 7-1/2008-IA-V dated 22-10-2008 for the period of three year w.e.f. 07-10-2008. The composition of the RAC is as under :-

1.	Dr. B. S. Chundawat (Former Vice Chancellor, GAU), C-45, Pratap Nagar, Udaipur	Chairman
2.	Dr. J. P. Srivastava, Former Professor & Head, Dept. of Vegetable Crops, CSAU&T, Kanpur (UP)	Member
3.	Dr. K. V. Ramana, (Former ADG (Hort. II)), Jawahar Lal Nehru Marg Rajahmundry (AP)	Member
4.	Dr. Akhilesh Singh, Professor & Head (Plant Pathology), Spices Scheme, CSK HPKV, Regional Research Station, Dhaura Kuan, Sirmour (H.P.),	Member
5.	Dr. R. T. Patil, Director, CIPHET, Ludhiana	Member
6.	ADG (Hort. II), ICAR, New Delhi	Member
7.	Dr. M. M. Anwer, Director, NRCSS, Ajmer	Member
8.	Dr. Gopal Lal, Principal Scientist, NRCSS, Ajmer	Member Secretary



14. IMC MEMBERS

The Indian Council of Agricultural Research (ICAR) New Delhi constituted Institute Management Committee vide order No. 27-4/2002-IA.V dated 15-12-08 for the period of three year w.e.f. 2-12-08. The composition, function and procedure of the IMC will be as under:-

1	Dr. M. M. Anwer, Director, NRCSS, Ajmer	Chairman
2	Dr. P. S. Naik, Project Coordinator (Potato) CPRI, Shimla	Member
3	Dr. Suresh Pal, Principal Scientist (Ag. Econ.) NCAP, Pusa, New Delhi	Member
4	Dr. S. N. Sinha, Principal Scientist & Head, IARI Regional Station, Karnal- 132 001	Member
5	Dr. D.L.N. Rao, Network Coordinator (Biofertilizer), IISS, Bhopal	Member
6	Dr. Umesh Srivastava ADG (H-II) ICAR, New Delhi	Council's representative
7	Director Horticulture Govt. of Rajasthan Pant Krishi Bhawan, Jaipur	Member
8	Director of Horticulture, Govt. of Gujarat Krishi Bhawan, Gandhinagar, Gujarat	Member
9	Director of Research, RAU, Bikaner	Member
10	Ms. Fouzia Tahseen Khan M.L.C., Maharastra Parbhani	Non Official Member
11	Sh. Mohan Datta Deshmukh, Shanka Bagh, Ahmednagar (Mah.)	Non Official Member
12	Finance and Accounts Officer, CAZRI, Jodhpur	Member
13	Sh. L. K. Sharma Asstt. Administrative Officer, NR.CSS, Ajmer	Member Sec.



15. 2nd QUINQUENNIAL REVIEW TEAM

The Director General, Indian Council of Agricultural Research New Delhi constituted the QRT vide letter no F.No. 1(2)/2010-1A-V dated 25th May, 2010 to review the work of National Research Centre on seed Spices, Tabiji, Ajmer and nominated Dr. S.A. Patil, Former Director, IARI, New Delhi and Ex-VC UAS Dharwad as the Chairman of QRT

The Composition of QRT is as follows :

Dr. S. A. Patil Former, Director, IARI, New Delhi	Chairman
Dr. B. B. Vashishtha Former Director NRC for Seed Spices Ajmer	Member
Dr. Mathura Rai Former Director IIVR, Varanasi	Member
Dr. G.S.R. Murthy Former Principal Scientist & Acting Director IIHR, Bangalore	Member
Dr. K.V.Ramana Former Additional Director General (Horticulture) ICAR, New Delhi	Member
Dr. Gopal Lal Principal Scientist (Hort) NRC for Seed Spices, Ajmer	Member Secretary



16. NEW STAFF

- Dr. R.D. Meena Scientist (Plant Pathology) Joined on 15.09.2010
- Dr. Ravindra Singh Sr. Scientist (Agronomy) Joined on 17.11.2010
- Dr. J. K. Ranjan Sr. Scientist (Horticulture) Joined on 29.12.2010
- Dr. S. S. Rathore Sr. Scientist (Biochemistry-PI.Sci.) Joined on 31.12.2010
- Dr. B.K. Mishra Sr. Scientist (Microbiology) Joined on 10.02.2011
- Sh. M. K. Nair AO Joined on 04.02.2011

17. DISTINGUISHED VISITORS

- Dr. R.S. Paroda, Ex-DG, ICAR, New Delhi
- Dr. H.P. Singh, DDG (Horticulture), ICAR, New Delhi
- Dr. M. Anandraj, Project Coordinator, IISR, Calicut
- Dr. S.P. Tiwari, Vice Chancellor, RAU, Bikaner
- Dr. J.S. Chouhan, Director, DRMR, Bharatpur
- Dr. Sreekala, G.S., CRSP, Kerala
- Dr. Jayshree, Secretary (SS) IISR, Calicut
- Dr. Umesh Srivastava, ADG (Horticulture), ICAR, New Delhi
- Dr. S.A. Patil, Chairman, QRT
- Dr. B.B. Vashishtha, Member, QRT
- Dr. Mathura Rai, Member, QRT
- Dr. G.S.R. Murti, Member, QRT
- Dr. K.V. Ramanna, Member, QRT
- Dr. S. Rajan, ADG (Horticulture)
- Sh. Harjiram Burdak, Hon. Minister for Agriculture, GOR
- Dr. S.S. Chahal, Vice Chancellor, MPUAT, Udaipur



18. PERSONNEL

SCIENTIFIC

Dr. M.M. Anwer	Director
Dr. Gopal Lal	Principal Scientist (Horticulture)
Dr. Ravindra Singh	Senior Scientist (Agronomy)
Dr. O.P. Aishwath	Senior Scientist (Soil Science)
Dr. S.N. Saxena	Senior Scientist (Plant Physiology)
Dr. Y.K. Sharma	Senior Scientist (Plant Pathology)
Dr. R.K. Kakani	Senior Scientist (Plant Breeding)
Dr. Krishan Kant	Senior Scientist (Entomology)
Dr. S.S. Meena	Senior Scientist (Horticulture)
Sh. R.S. Mehta	Senior Scientist (Agronomy)
Dr. J. K. Ranjan	Senior Scientist (Horticulture)
Dr. S. S. Rathore	Senior Scientist (Plant Biochemistry)
Dr. B.K. Mishra	Senior Scientist (Microbiology)
Dr. R.S. Meena	Scientist (Plant Breeding)
Sh. R.K. Singh	Scientist (Seed Technology)
Dr. R.K. Solanki	Scientist (Plant Breeding)
Dr. Sharda Choudhary	Scientist (Biotechnology)
Sh. Mukesh Vishal	Scientist (Ag. Statistics)
Dr. R.D. Meena	Scientist (Plant Pathology)

TECHNICAL

Sh. S.P. Maheria,	T-6
Sh. M.A. Khan	T-6
Sh. S.R. Meena	T-5
Sh. G.K. Tripathi	T-3
Sh. Pramod Agarwal	T-1
Sh. Sri Ram Balai	T-1
Sh. Ajit Singh	T-1

ADMINISTRATIVE

Sh. M. K. Nair	AO
Sh L.K Sharma	AAO
Sh. Bhim Singh	Assistant
Sh. R. K. Kanwaria	Sr. Clerk

SUPPORTING

Smt. Sarla Devi	SSG-I
Sh Pukhraj Paroda	SSG-I



19. TECHNICAL PROGRAMME

CROP IMPROVEMENT UNIT

CI-1.	Management of plant genetic resources in seed spices
CI-2.	Breeding for high yield, quality and resistance to biotic and abiotic stress in fenugreek
CI-3.	Breeding for high yield and quality in coriander
CI-4.	Breeding for high yield, quality and resistance to biotic and abiotic stresses in fennel
CI-5.	Breeding for high yield , quality and resistance to biotic stresses in cumin.
CI-6.	Breeding for high yield, quality and resistance to biotic and abiotic stresses in caraway
CI-7.	Breeding for high yield, quality and resistance to biotic and abiotic stresses in celery
CI-8.	Breeding for high yield and quality in dill.
CI-9.	Breeding for high yield and improved quality in ajwain for <i>rabi</i> and <i>kharif</i> season
CI-10.	Breeding for high yield and improved quality in nigella
CI-11.	Genetic characterization and documentation of released varieties of cumin, coriander, fenugreek and fennel.

CROP PRODUCTION UNIT

CPd-2.	Nutrient Influx Efficiency in <i>Coriandrum sativum</i> , <i>Foeniculum vulgare</i> and <i>Trigonella foenugraecum</i> cultivars
CPd-3.	Optimization of water requirement in major seed spices
CPd-4.	Performance of seed spices in problematic soils and water resources
CPd-5.	Standardization of protected cultivation techniques for seed spices crops
CPd-6.	Standardization of seed spice based cropping system with fruit crops
CPd-7.	Standardization of agrotechniques for minor seed spices (nigella, anise and dill)
CPd-8.	Seed spices crops residue recycling through vermicomposting for nutritional and carbon budgeting
CPd-9.	Development of integrated system for processing and value addition with modified atmosphere packaging of seed spices (Cumin and fennel)
CPd-10.	Evaluation of irrigation methods in fennel under various configuration of crop geometry
CPd-11.	Standardization of package of practices for organic seed spices production (coriander and cumin)
CPd-12.	Evaluation and identification of efficient cropping sequences for semi-arid region of seed spices growing area
CPd-13.	Standardization of non-monetary agrotechniques for seed spices under different agro-climatic conditions



CROP PROTECTION UNIT

- CPT-1. Survey and surveillance diseases of seed spices
- CPT-2. Management of seed spice midge (*Systole albipennis* Walker) in coriander and fennel
- CPT-3. Survey and surveillance for study on occurrence of insect-pests of seed spices
- CPT-4. Studies on bio-ecology of storage pests in seed spices
- CPT-5. Eco-friendly approaches for the management of soil borne pathogens of cumin
- CPT-6. Biorational management of aphids in cumin and fennel crops
- CPT-7. Development of plant protection schedule for cumin cultivation

BASIC SCIENCES

- BS-1. Effect of some chemicals on low temperature tolerance in cumin and coriander
- BS-2. Physiological parameters and their relation to seed yield in seed spices crops
- BS-3. Effect of water stress on water relation, photosynthetic parameters and membrane integrity of coriander genotypes
- BS-4. Developping varieties resistant to fungal pathogen in cumin through gene transformation

SOCIAL SCIENCE

- SS-1. Awareness and adoption of seed spices production technologies
- SS-2. Development of expert system and intelligent framework for seed spices
- SS-3. Development of traders / exporters / industrialist information on seed spices



Hon'ble Governor of Rajasthan, Sh. Shivraj Patil visiting NRCSS stall at MPUAT, Udaipur



Hon'ble Minister of Agriculture, Rajasthan, Sh. Harjiram Burdak visiting experimental farm of NRCSS



**Hon'ble Minister of Technical and Higher Education, Rajasthan, Sh. Murari Lal Meena
visiting experimental farm of NRCSS**



Seminar on Enhancing spices production in dry land areas of Andhra Pradesh



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