



NRCL

newsletter

(An ISO 9001:2008 Certified Institute)

From the Director Desk

Dear Readers,

It gives me an immense sense of joy and satisfaction to bring you the news of the bumper harvest in litchi this year. It was, litchi season, that period of the year when our attention is focused most on involving directly with growers and stakeholders. Crop advisories from flowering through fruit development and harvesting to postharvest management, our scientists and staff dedicated monumental time and energy to make sure growers received vital information on different orchard operations. Despite several challenges, putting in tireless efforts and working in unison with growers have been a remarkably enjoyable and rewarding experience. The 14th Institute Research Council (IRC) and 10th Research Advisory Committee (RAC) meetings were conducted during this period. The outcomes and recommendations of which will strengthen research and development programmes at the centre. The scientists of the centre participated and presented research results in several conferences/symposia/seminars, most notably in the V International Symposium on Litchi, Longan, and other Sapindaceae Fruits held at BAU, Sabour Bhagalpur, under the aegis of ISHS, Belgium and ICAR-NRC Litchi, Muzaffarpur. The centre also organized and hosted two significant training programmes in collaboration with APEDA, Kolkata, and BARC, Mumbai, respectively on expert protocol and preserving fresh fruits. Coinciding with the feeling of pride and accomplishment on completion of 15 years of ICAR-NRCL, I accepted with humility on being entrusted by the ICAR to lead the centre through another term and International leadership to organise the subgroup of Litchi and Sapideace fruits for 4 years. I dedicate myself to the cause of this centre *vis-a-vis* Litchi and seek your cooperation and support to take both to new highs. These being said, I am happy to present to you this issue of our newsletter containing reports on important happenings and developments at the centre, the small steps and attempts that we hold, firm in belief, will further the mission of ICAR-NRC on Litchi.



Greetings to all our readers. *NRCL Newsletter* as a project has been long due and its publication can be undeniably termed timely. We shall endeavor to bring all happenings to litchi family through this mouth-piece of the centre. We are also on the web; do check regular updates on our website and facebook page. Hope you enjoy reading this issue.


Highlights

- India hosts V International Symposium on Litchi, Longan, and other Sapindaceae Fruits (Flip over to Page 2 for full coverage)
- Dr. Vishal Nath takes over as Director, ICAR-NRCL
- USDA experts impart training on litchi export
- BARC, Mumbai demonstrated litchi preservation technology

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(Vishal Nath)
Director

India Hosts International Litchi Symposium

Venue: BAU, Sabour, Bhagalpur, Date: 31st May to 3rd June 2016

India hosted the V International Symposium on Litchi, Longan, and other Sapindaceae Fruits from 31st May – 3rd June 2016. The symposium was organized by BAU, Sabour, Bhagalpur under the aegis of the International Society for Horticultural Science (ISHS), Leuven, Belgium and ICAR-NRC on Litchi, Muzaffarpur. This gathering of litchi workers followed the previous symposium held in South Africa on 2nd December 2012. Scientists of the centre, led by Dr. Vishal Nath, participated in the symposium and took part throughout the 4-day symposium that was attended by researchers from different countries. The strength of litchi germplasm in India was effectively showcased during symposium. The following are some of the lead lectures presented by the scientists of the centre at the symposium:

- ❖ Status of litchi in India – Dr. Vishal Nath
- ❖ Challenges and opportunities for improved productivity of litchi – Dr. Vishal Nath
- ❖ Canopy architecture management in litchi - Dr. Vishal Nath
- ❖ Physiological disorders in litchi and their effective management – Dr. S.K. Purbey
- ❖ Options of pest management in litchi – Dr. Kuldeep Srivastava
- ❖ Diseases in litchi crop management – Dr. Vinod Kumar
- ❖ Smart practices to manage postharvest quality and losses in litchi – Dr. S.K. Purbey



Glimpses of the International Symposium at BAU, Sabour, Bhagalpur

In addition, the scientists from the centre also presented their research findings through oral presentations at the symposium. ICAR-NRCL also exhibited the varietal wealth of litchi, technologies, and processed products of litchi during the symposium. The VI International Symposium on Lychee, Longan and other Sapindaceae Fruits has been proposed to be held in Vietnam in 2020.



Girdling in litchi: A technology for assured fruiting

Irregular bearing of the litchi plant is a constraint particularly in cultivars of China group. This phenomenon happens in litchi due to failure to bloom owing to continuous vegetative growth of the tree. Vegetative growth may be due to varietal characteristics and unusual weather condition during winter results in insufficient degree of dormancy to initiate flower bud formation. China cultivar of litchi showed the tendency of alternate bearing habit while Shahi is considered a regular bearer but shows erratic behavior especially up to 15 years of planting. To overcome this problem, the technique of circular girdling in primary branches of litchi has been developed to obtain regular flowering and fruiting through suppression of vegetative growth prior to flower induction.

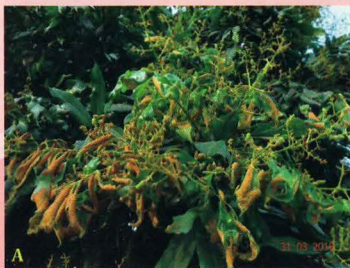
Girdling with 2-4 mm size (width of ring) on 50% primary branches per tree performed during last week of August in Shahi cultivar and 1st week of September or after appearance of second vegetative flushes in China cultivar, produced synchronous flowering and fruiting continuously for 3-4 years. Girdling operation was performed by removing a strip of bark in a circular ring around the selected primary branches using a sharp pruning saw. Subsequent girdling during next year was performed 4-5 cm above the previous girdled section. All girdled plants recorded three- to five-fold higher yield than control (un-girdled tree). This technique is being taken by many litchi growers.



Girdling to improve fruiting in Litchi: A. Girdling on primary branches; B. Heavy fruiting on girdled branches and no fruiting on un-girdled branches

Management of litchi mite using different IPM modules

Litchi mite is a major problem in all litchi-growing areas. Both nymphs and adult mite suck the cell sap and injure the leaves, inflorescence and developing fruits. Consequently, damage on leaf tissues gets aggravated resulting in formation of erineum. The symptoms occur as velvety growth on the lower leaf surface which enlarges and turn to brown-chocolate colour with deep lesion resulting in reduction in photosynthetic area. Very severe infestation is generally recorded in unmanaged litchi orchards and spread to neighboring plants and orchards. Mite affected orchards record very poor flowering and fruiting, and growers suffer huge economic losses. The maximum incidence of mite is noticed during July-October and February-March, especially in un-pruned and poorly managed orchard.



Mite-infested leaves

IPM module: Pruning and removal of infested twigs/shoots just after harvesting of fruit and before emergence of new flush followed by 2 sprays of chlorfenapyr 10 EC (3ml/l) or propargite 57 EC (3ml/l) at 15 days interval in July. Further, newly infested twigs are pruned during October and sprayed with above mentioned chemicals. Thereafter, if the incidence of mite is noticed, need-based spray must be done between panicle initiation and flower opening.



Litchi tree infested with mite



Success Story

Bagging spells increase in income for litchi grower

Like all other crops, litchi cultivation is also beset with several maladies. A few that directly affects the fruit has direct bearing on production, productivity, and quality of fruit. Fruit and shoot borer is, by far, the most damaging insect in litchi. Larva of the insect bores into the fruit around the shoulder and feeds on the seed near the pedicel attachment. The infestation of an otherwise healthy-looking fruit is only discovered on peeling off the skin, as manifested by the presence of larval excrement. As such this insect directly reduces fruit quality and marketability. Since litchi bears fruit on the outer canopy, fruits are highly prone to sunburn injury during the hot and dry summer. The resultant necrotic tissue becomes brittle and cracks easily under pressure from developing aril. Such cracked fruits then become port of entry and infection of fruits by decay and rot pathogens.

Sh. Bholanath Jha, a prominent litchi grower in Muzaffarpur also faced similar problems in his orchard, and incurred heavy losses every season due to fruit borer, sunburn, and fruit cracking, as he admits. Normally, growers resort to treatment and spray of growth regulators, chemicals, and pesticides to manage these maladies. In addition, the cost of production further rises as growers have to ensure timely irrigation to maintain favourable soil moisture content.

Bagging of litchi fruit bunches is a low cost, eco-friendly, sustainable, and economically viable technology that ICAR-NRCL litchi has developed and validated. Of several bagging materials tested "Non-woven polypropylene bags" have been found superior in terms of conferring physical protection from insect pests and climatic aberrations such as rain and wind, and reduces borer infestation by creating a physical barrier to entry, reduces sunburn, cracked, and spotted fruits by 30-36% and increases fruit weight by 6-16%, and also increases anthocyanins content. Overall, there is about 30% increase in Class-I fruit. Using this technology, Sh. Bholanath Jha bagged about 2000 fruit bunches with bags made available at ICAR-NRCL. Bagging operations in his orchard was done 25-30 days before commercial harvest (20th April 2016).



Bunch bagging improves farm income: Bagging in litchi bunches; B. RAC team during their visit to Sh. Bholanath Jha's orchard

As a result of bagging, Sh. Bholanath could avoid a spray of insecticide. After harvesting of bagged fruits, he beamed with delight, "Through bagging I have not only saved on cost of pesticide but also prevented cracking, sunburn, and my fruits are free from borer infestation". His fruits were uniform in size and appearance, and the bagged fruits fetched higher price in the local market. He could forgo sorting and grading operations which saved time and labour cost. The bagged fruits were harvested and directly packed in 2 kg CFB boxes for sale in the local market. "Un-bagged fruit go for Rs- 100-150/box, while I have been able to fetch Rs. 150-250/box from bagged fruits. Sh. Bholanath Jha received a letter of appreciation from the Dr. S.D. Shikhamany, Chairman of RAC, ICAR-NRCL during the committee's visit to his orchard for adopting ICAR technology and his enterprise. Sh. Bholanath Jha has also encouraged litchi growers in surrounding areas to adopt the same technology to increase farm income.

Events and Meeting

Capacity building programme on cold treated litchi export to USA

With the aim to attempt trial shipment of litchi to the USA, a capacity building programme on cold treated litchi export was organized at ICAR-NRCL from 19-21st May 2016. It was organized in collaboration with India's apex body for export of agricultural and processed food products, The APEDA. Dr. Scott Wood and Dr. Adly Ibrahim, technical experts from the United States Department of Agriculture (USDA), APHIS, were the resource persons for this programme that had representatives from academia, researchers, NPPO, PPO-RPQS, litchi growers and exporters as trainees. The training programme covered wide ranging topics and essential requirements for export of cold treated litchi to USA. This included sourcing of fruit from certified orchards through cold treatment and container shipment to meeting export protocols.



Dr. Scott Wood, USDA-APHIS, briefing the trainees on cold treatment of litchi



Participants of Cold Treatment Training programme

Awareness Programme on Fresh Litchi Preservation

ICAR-NRC on Litchi in collaboration with Bhabha Atomic Research Centre, Mumbai organized an "Awareness programme on fresh Litchi preservation" from 25-26th May 2016. Several farmers from different districts of Bihar participated in the training programme. Dr. R.C. Srivastava, Hon'ble Vice Chancellor of RAU, Pusa was the chief guest on the occasion. He appreciated the efforts of NRC Litchi and BARC, Mumbai for collaborating and joining hands together towards improving the lives of litchi growers. Scientists from BARC demonstrated the method of postharvest treatment technology through which litchi can be preserved up to 60 days. Padma Shri Dr. S.P. Kale, Associate Director, BARC graced the occasion with his presence and also encouraged the gathering with his inspiring life and words. Improved postharvest management techniques were imparted to the growers to help them reduce losses and preserve fruit quality during storage.



Preservation technique of litchi being demonstrated to the farmers



Padma Shri. Dr. S.P Kale, Associate Director, BARC, Mumbai speaking on the occasion

16th Foundation Day Celebrated



Dr. Vishal Nath, Director, ICAR-NRCL, addressing the gathering on the occasion of 16th Foundation Day

ICAR-NRCL, having completed its 15th year of existence, celebrated the 16th Foundation day on 24th May 2016. It was on this day in 2001, there was an approval to establish the National Research Centre on Litchi at Muzaffarpur. To commemorate the occasion a formal function was held in the training hall of the centre with Dr. S.D. Shikhamany, Chairman RAC, as the chief guest. Dr. Vishal Nath, Director, recounted the path to progress that the centre has traversed over the past years. Dr. Shikhamany congratulated the Director and staff of the centre on the occasion and exhorted the gathering to work hard and strive to make NRCL one of the best ICAR institutes in the country. The first issue of the centre's newsletter, *NRCL Newsletter*, and *Trichoderma*-based biopesticide were released to mark the occasion.



A



B

(A) First issue of NRCL Newsletter (B) *Trichoderma*-based biopesticide being released on the occasion of 16th Foundation day

Mera Gaon Mera Gaurav

Under *Mera Gaon Mera Gaurav* programme scientists of the centre have adopted different villages in Muzaffarpur, Vaishali, and East Champaran districts of Bihar. Regular interaction and visits are being made to these villages where the scientists interact with the farmers and villagers to understand the problems in rural life. During this visits and interaction, the farmers are also sensitized about good agricultural practices in litchi and how improved technologies can be adopted to ensure livelihood security through improved farm output and increased incomes.



Mera Gaon Mera Gaurav programme at Katarmala village, Vaishali on 6th Feb. 2016



Fig. 14th IRC Meeting in progress

14th IRC Meeting

The 14th Institute Research Council (IRC) meeting of the centre was held from 22-23rd April 2016 under the chairmanship of Dr. Vishal Nath, Director. The meeting was attended by all the scientists of the centre where research results of the ongoing projects were presented and discussed. The technical programme of work for the next period were also discussed and approved in the meeting.



10th RAC Meeting

The 10th Research Advisory Committee (RAC) meeting of the centre was held on 24th May 2016 under the chairmanship of Dr. S.D. Shikhamany. The meeting was attended by members of the committee, Dr. S.K. Mitra, Dr. D.S. Khurdiya, Dr. Jitendra Kumar, Dr. V.V. Ramamurthy, Shri Ranjan Sahu, Shri Mukesh Sharma, Dr. Vishal Nath, and scientists of the centre. The RAC members were apprised of the ongoing research activities at the centre. The scientists of the centre gained much encouragement and new directions for research from the valuable experience and expertise of the RAC members. The committee visited the farmer's field and experimental farms and laboratories of the centre and expressed their appreciation.



Discussion during 10th RAC meeting



RAC team inspecting the varietal pool of litchi

Outreach and Extension

Rayagada, Odisha

Northern part of Odisha possesses climatic conditions that can potentially produce good quality litchi. During a recently held Farmer-Scientists Interaction on litchi on 30th May 2016, Deogarh and Rayagada have been identified as potential areas. Litchi mite and fruit cracking have been identified as major problems. ICAR-NRCL will continue to work among the litchi growers in these areas to help them improve production, productivity, and marketing of litchi.

Kushinagar, U.P.

The foothills of the Himalayas are some of the most potential areas for litchi cultivation in the country. Muzaffarnagar, Saharanpur, Baharaich, Gorakhpur, and Kushinagar has sizable area and production of litchi. NRCL has been striving to exploit the potential in this vast stretch of land, and has in the recent past supplied quality planting material to several districts. The centre's outreach programmes in Kushinagar on canopy management, intercropping, and pest management against borer and mite have shown impact through increase production.



Dr. Vishal Nath with litchi growers in Rayagada, Odisha

Field Day at Katarmala, Vaishali

A field day was organized at Katarmala village in Vaishali district, Bihar, on 30th April 2016. Drs. S.D. Pandey, Amrendra Kumar, Kuldeep Srivastava, R.K. Patel, and Gopal Kumar interacted with the litchi growers in the village. Girdling technology developed by NRCL was introduced to 35 litchi growers with the objective of achieving regular bearing in litchi cv. China. The scientists also provided training to the farmers on fruit borer management, GAPs and bagging technology in litchi.



North Eastern Hill Region

Under the strategic research in NEH region, the centre has recently identified Aliba village in Mokokchung district of Nagaland where organized litchi orcharding can be promoted. An interaction programme cum rapport making was held in June 2016 and baseline information of the village has been developed. High incidence of litchi fruit borer has been found to be the major problem for the growers. Under the project, the centre aims to improve livelihood and increase farm income, especially of tribal farm women. To this effect, the centre has also identified potential partners in the region to work together towards this goal.



Interaction with officials of State Agricultural Research Station, Mokokchung, Deptt. of Agriculture, Nagaland

Examination of mass mortality of litchi trees

A team of scientists from ICAR-NRCL comprising Dr. Vinod Kumar (Senior Scientist-Plant Pathology), Dr. Gopal Kumar (Senior Scientist-Soil Science) and other staff member along with state officials namely, Shri Radheyshyam, District Horticulture Officer, Muzaffarpur and Shri Karunesh Kumar, Agriculture Coordinator, Bochahan visited different orchards in Patiyasa, Hamidpur and Bhagwanpur Daria village under Bochahan Block of Muzaffarpur district on 27th April 2016 to assess the situation and ascertain the reason for drying of adult litchi trees. Soil profile samples up to the depth of one meter in each 15 cm increment, surface soil samples, root samples and leaf samples were collected. From analysis of soil profile it was evident that low soil depth and poor retention of moisture was the primary cause of drying of trees.



Wilting of adult litchi tree during April 2016



Team of scientists from NRCL taking stock of crop husbandary practices followed by farmers at Patiyasa, Bochahan block of Muzaffarpur

As there were sand layer below the depth of 50 cm in soil profile. Exhaustion of soil moisture in root zone and break in capillary due to extreme dry and hot spell occurred during April and less rain during 2015 could be probable reason for drying of litchi. The same was partially corroborated by the recovery of some litchi tree after a good spell of rain. No pathogen was found associated with wilted tree roots.



We are on the Web. Visit our website for latest updates
Website: www.nrclitchi.org
(Scan the code with your smartphone for URL)



ICAR-NRCL organized and participated in several Farmers` Fair, Kisan Melas, Kisan Gosthi etc during this period.

Title of Programme	Venue	Date
Kisan-Vyapari-Vigyanik Varta	ICAR-NRCL, Muzaffarpur	5 th January 2016
Kisan Gosthi on GAP and Canopy Management in Litchi	Lakhminia, Chhoti Balia, Begusarai	7 th January 2016
Kisan Mela	BAU, Sabour, Bhagalpur	4-6 th March 2016
Kisan Sambodhan	ICAR-IISR, Motipur, Bihar	5 th March 2016
Kisan Mela	RAU, Pusa, Samastipur	5-7 th March 2016
Unnati Krishi Mela (NAF-2016)	ICAR-IARI, New Delhi	19-21 st March 2016
Agri-Fair	ICAR RCER, Patna	28-30 th May 2016
Kisan Vikas Parva evam Sangosthi	Deoria, Uttar Pradesh	12 th June 2016

Human Resource Development

- ❖ Dr. Gopal Kumar attended DST sponsored one week training on "Role of Scientist in Natural Resource and Environment Management" at IIFM, Bhopal from 8-12th February, 2016.
- ❖ Dr. Sanjay Kumar Singh, Scientist attended 10 days short course training programme on "Exploitation of under utilized Horticultural Crops for Sustainable Production" at CHES, Godhra, Gujarat during 11-20th February 2016.
- ❖ Drs. Vishal Nath, Amrendra Kumar, Kuldeep Srivastava, and E.S. Marboh participated in 3rd Group Discussion Meeting of AICRP-Fruits at PAU, Ludhiana from 3-6th March 2016.
- ❖ Drs. Vishal Nath and Gopal Kumar attended brainstorming session on "Digitally linked smart fruit farms for higher productivity and profits" at ICAR-IARI, New Delhi on 7th March 2016.
- ❖ Sh. Abhishek Yadav, Administrative Officer, attended training programme on "Reservation and Roster Preparation" at ICAR-NAARM, Hyderabad from 27-29th April, 2016.
- ❖ Dr. Sanjay Kr. Singh, attended National Seminar on "Fruit Breeding in sub-tropical and tropical fruits: An Indian perspective" at ICAR-IIHR, Bangalore from 27-29th April 2016.
- ❖ Dr. Vishal Nath, attended National Steering Committee Meeting for Agriculture in Eastern States on 18th June, 2016 at Krishi Bhawan, New Delhi.
- ❖ Dr. S. K. Purbey attended the "Academia-Industry meet for need of Mechanization in Agriculture" organized by ICAR-CIAE, Bhopal and ICAR RCER, Patna on 28th June 2016.
- ❖ Dr. Vishal Nath attended the "Steering committee meeting in 2nd Green Revolution in Eastern region" at ICAR RCER, Patna on 27th June 2016.
- ❖ Dr. S.D. Pandey and Dr. S.K. Purbey attended "Agriculture and Farmer's Welfare on Statistics day" at NSSO (FOD), Muzaffarpur on 29th June 2016



Fig. Hon`ble Union Minister of Agriculture and Farmers` Welfare, Sh. Radha Mohan Singh, visiting the NRCL stall at the Kisan Vikas Parva evam Sangosthi, Deoria, U.P.

Conferences attended

- ❖ Sh. Alok K. Gupta attended "International Extension Education Conference" at BHU, Varanasi from 27-30th January, 2016.
- ❖ Dr. Kuldeep Srivastava and Dr. R.K. Patel attended "International Seminar on Indigenous Technologies for Sustainable Agriculture and Better Tomorrow" at Lucknow from 9-10th January, 2016
- ❖ Dr. Vinod Kumar, Sr. Scientist, participated in the ISMPP 37th Annual Conference and National Symposium on "Food Security Through Plant Health Protection" at RAU, Pusa, Samastipur from 4-6th April, 2016, and 3rd International Conference on Agriculture, Horticulture & Plant Sciences" held at New Delhi, India during 25-26th June, 2016
- ❖ Drs. Vishal Nath, Amrendra Kumar, Kuldeep Srivastava, and R.K. Patel participated in the 8th Swadesh Prem Jagriti Sangosthi held at Jain Hills, JISL, Jalgaon, Maharashtra from 28-31st May, 2016.
- ❖ Drs. Vishal Nath, S.K. Purbey, Amrendra Kumar, Kuldeep Srivastava, R.K. Patel, Vinod Kumar, Alemwati Pongener, A.K. Gupta, and E.S. Marboh participated in the Vth International Symposium on Lychee, Longan, and other Sapindaceae Fruits during 31st May - 3rd June, 2016 at BAU, Sabour, Bhagalpur, Bihar.



Signing of MOU with Clarison Caseui Ltd. Gujrat

Awards and Honour



Dr. Vinod Kumar receiving the Outstanding Scientist Award at the International Conference

Dr. Vinod Kumar, Senior Scientist of the Centre was conferred "Outstanding Scientist Award-2016" for his significant contribution in the field of plant pathology on the occasion of "3rd International Conference on Agriculture, Horticulture & Plant Sciences" held at New Delhi, India during 25-26th June 2016 organized by International Journal of Tropical Agriculture (IJTA) and Academic Research Journals, New Delhi. In the same conference, he also bagged the 'Best Paper Award' in 'oral category for his research paper entitled "Effect of some fructoplane antagonists and postharvest dip treatments on litchi fruit rots and shelf life" jointly co-authored with S.K. Purbey, Alemwati Pongener, Ajit K.D. Anal and Vishal Nath, in view of the practical application of the findings.

MoU signed

ICAR-NRCL signed a Memorandum of Understanding (MoU) with Clarion Casein Ltd, Kadi, Gujarat, on 22nd June 2016, for "Technology Transfer and Commercialization of Products from Litchi Fruits (dehydrated and beverage products)".



You may contact us for any litchi-related query and we shall be happy to help.
(Scan the code with your smartphone for URL link to Scientists and Staff at ICAR-NRCL)

Publications

Research articles

- ❖ Kumar, V., Purbey, S.K., and Anal, A.K.D. (2016). Losses in litchi at various stages of supply chain and changes in fruit quality parameters after harvest. *Crop Protection*. 79: 97-104.
- ❖ Kumar, A., Pandey, S.D., Purbey, S.K., Patel, R.K., and Nath, V. (2016). Effect of growth regulators on shoot maturity, flower induction and yield of litchi cv. Shahi. *Hort Flora Research Spectrum*. 5(1): 12-16.
- ❖ Kumar V., Kumar R. and Anal A.K.D. (2016). Arbuscular mycorrhizal association, species diversity and factors influencing association with litchi trees in India. *Journal of Environmental Biology* 37(1): 91-100.
- ❖ Kumar R. and Kumar V. (2016). Physiological disorders in perennial woody tropical and subtropical fruit crops- A review. *Indian Journal of Agricultural Sciences* 86(6):703-717.
- ❖ Kumar V., Purbey S.K., Pongener A., Anal A.K.D. and Nath V. (2016). Effect of some fructoplane antagonists and postharvest dip treatments on litchi fruit rots and shelf life. *International Journal of Tropical Agriculture* 64(2): 333-343.
- ❖ Nath, V., Sharma, S., and Barman, K. (2016). Acute encephalitis syndrome and its alleged litchi connection: A review and status. *Indian Journal of Agricultural Sciences*. 86(3): 283-290.

Popular articles

- ❖ Kumar R. and Kumar V. (2016). Exploring potential of longan. *Indian Horticulture*, 61(2): 11-13.
- ❖ कुमार, विनोद और अनल, अजीत कुमार द्विवेदी (2016). ट्राइकोडर्मा-जैविक खेती में उपयोगी कवक। खेती, 9(3): 31-34
- ❖ Patel, R.K., Nath, V., Kumar, A., Pandey, S.D. (2016). Litchi me podhshala prabhandhan. *In: Uttar Purvi Maidani Kshetro me Samekit Fasal Prabhandhan evam Beejotpadan Taknik*. 75-79pp
- ❖ Pandey, S.D., Patel, R.K., Kumar, A., and Nath, V. (2016). Litchi ki unnat kheti. *In: Uttar Purvi Maidani Kshetro me Samekit Fasal Prabhandhan evam Beejotpadan Taknik*. 80-83pp
- ❖ Purbey, S.K., Kumar, A., Pongener, A., and Nath, V. (2016). Bagging litchi fruit bunches for harvesting quality fruits. *ICAR News*. 22(1): 3-14.

Visitors and Future Events

Distinguished visitors

- ❖ Sh. S.K. Singh IAS, Additional Secretary cum Financial Advisor, DARE visited ICAR-NRCL on 27th February 2016.
- ❖ Dr. H.P. Singh, President, CHAI, and Former DDG (Hort), ICAR, visited ICAR-NRCL on 19th March 2016
- ❖ Dr. S. Gautam, Head, Food Technology, BARC, visited ICAR-NRCL on 1st April 2016.
- ❖ Prof. Nazeer Ahmed, Hon`ble VC, SKUAST, Srinagar, visited the centre on 16th April 2016.
- ❖ Sh. S. Bilgrami, Comptroller, ICAR-IARI, visited the centre on 13th May 2016 and also delivered a lecture to the staff on "Good Practices in Procurement".
- ❖ Padmashri Dr. Sharad P. Kale, outstanding Scientist, BARC, Mumbai visited ICAR-NRCL on 26th May 2016.
- ❖ Dr. V.R. Sagar, Head and Dr. R.R. Sharma, Principal Scientist, Div. of Food Science & Postharvest Technology, ICAR-IARI, New Delhi visited the centre from 25-28th May 2016.
- ❖ Dr. Regina Cronje, ARC-ITSC, Nelspruit, South Africa, visited the centre on 5th June 2016.
- ❖ Edward Grantham and Nick Grantham from Iwiwe Farm, Felixton, South Africa visited the centre on 5th June 2016.



Dr. Regina Cronje and E Granthams from South Africa during their visit to NRCL

Upcoming events

- ❖ Summer school on "Canopy architecture management in fruit trees for conservation and utilization of natural resources in changing climatic conditions" from 11-31st July 2016.
- ❖ Short course on "Bioassay, production protocol and quality control for Trichoderma based biopesticides" from 5-14th September 2016.
- ❖ Institute Management Committee meeting in September 2016.
- ❖ 15th IRC meeting in first week of November, 2016.





Staff Corner

Dr. Vishal Nath selected as Director, NRCL

Dr. Vishal Nath, Director has been entrusted by the ICAR to lead the centre through another full term. He rejoined the position of Director, ICAR-NRCL on 8th February, 2016. Prof. Nath has had a distinguished career in horticultural science with more than 21 years of experience of working in different agro-climatic regions and crops. He has to his credit almost a decade under Research Management and coordination. Under his able and dynamic leadership, ICAR-NRCL shall endeavor to reach set milestones and greater heights.



Promotion, Transfer, and Appointments

	Dr. Amrendra Kumar got promoted from Senior Scientist to Principal Scientist (Horticulture) w.e.f. 3 rd October 2014		Ms. Ekta was recruited for the post of Jr. Clerk (LDC) and joined the centre as Jr. Clerk (LDC) on 18 th May, 2016.
	Mr. Prabhat Kumar joined the centre as Scientist (Soil Science) on 13 th May 2016 on transfer from ICAR-IISWC, RS Datia, Madhya Pradesh.		Mr. Ritesh Kumar was recruited for the post of Jr. Clerk (LDC) and joined the centre on 25 th May, 2016.

Obituary

With sadness and grief, we announce the untimely passing of Dr. Rajesh Kumar, Principal Scientist on 13th March 2016. As a founder-member, Dr. Rajesh served the cause of the centre for almost 14 years. A much loved and respected person, we have lost an eminent scientist, mentor, colleague, and a friend in his passing.



Published by

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