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# Grape Reporter



ICAR-National Research Centre For Grapes

<https://nrcgrapes.icar.gov.in/>



## Cover story

### Stem Borers in Grapes

*Celosterna scabrator*, *Stromatium barbatum* and *Dervishiya cadambae* are the major stem borer species infesting grapevine in peninsular India. All three stem borer species cause extensive damage to the sapwood and/or heartwood of grapevine stem and reduce both vitality and productivity of the vines.



*Celosterna scabrator*



*Dervishiya cadambae*



*Stromatium barbatum*



### *Celosterna scabrator*

*C. scabrator* larva can feed only on live plants and make gallery inside. The characteristic symptoms of its damage are that it removes the frass out from hole which can be noticed around the plant and the leaves of infested plant shows interveinal chlorosis at later stages. The time of adult emergence and oviposition for *C. scabrator* is exceedingly long which starts with the initiation of monsoon and lasts for about 120-150 days. The eggs are laid inside the stem by making a cut and covering with a substance which hardens after some time. The larva start feeding inside and make galleries. Therefore, targeting adults and eggs for management is not feasible.

To manage *C. scabrator* is to tag infested plants, tear apart the gallery and remove the larva. When the young larva come out of the egg and start feeding on the sapwood is the best time to kill it. As a result of feeding, the grapevine stem oozes a watery substance which can be noticed as a wet patch on the main trunk or the cordons. However, this patch is visible only during morning hours generally before 8:00 a.m during the months of October to January. When this watery patch is seen, the larva can be easily removed by using the iron wire and killed.

### *Dervishiya cadambae*

The young larvae feed under the bark and in later instars bore inside and make galleries. The young larva feeding under the bark can be seen mainly during July and August months. For its control regular monitoring, removal of loose bark and two stem and cordon washes with entomogenous fungus, *Metarhizium brunneum* when the young larvae are feeding under loose bark is effective. Most of the insecticides are ineffective against the larva, however, if the insecticide application becomes inevitable to save the vineyard, then main stem and cordon wash with lambda cyhalothrin 4.9 CS @ 2.5 ml per litre water (water volume 2 litres per plant) can be given after removal of loose bark. This application may be repeated after 10 days.

### *Stromatium barbatum*

*S. barbatum* species of stem borer is pest of 6-7 years or older vineyards. It is primarily pest of dead wood as it prefers older vineyards. The grubs of this species feeds inside the stem and convert the stem

wood into powder like termites. Adults of stem borer *S. barbatum* may start emerging during the first week of June and by mid-June majority of adult emergence takes place. However, small numbers of stem borer adults may keep on emerging till September.

Installation of light traps outside the vineyards will be helpful in monitoring the initiation of emergence of stem borer adults so that timely management can be carried out. Adults of stem borer will remain hidden under the loose bark of grapevine and majority of the eggs are also laid under it. Therefore, if this loose bark is removed just before the onset of monsoon, the adults will not find places to hide and lay eggs and infestation will reduce. Further, it will also help in exposing adults and eggs for their management by insecticides.

Just after adult emergence, washing of main stem and cordons with fipronil 80 WG @ 0.06 g/litre, lambda cyhalothrin 5 CS @ 0.5 ml/litre or imidacloprid 17.8 SL @ 0.3 ml/litre water alternatively, during night will help in controlling adults. Lambda cyhalothrin 5 CS @ 0.5 ml/litre is also effective in killing eggs of this species. This is to clarify that as per the experiments carried out at NRC for Grapes, Pune, chlorpyrifos 20 EC @ 2 ml/litre water was also found effective against both adults and eggs of this stem borer, but, it does not have label claim for use in grapes, therefore, not recommended.

The adult emergence and egg laying period during first fortnight of June is the only period when this species can be controlled. If this period is missed, then this stem borer cannot be controlled as no insecticide will be effective in controlling the larva and pupal stages. The larval period is of about 9 months. There is no external symptom on the plant visible in the vineyards infected by this species. During December to March months, when larva is feeding on the dead dry wood, the feeding sound can be heard in the old vineyards. More than 100 grubs of stem borer can be found in a single plant in case of high infestation. Two to three years of infestation can reduce the productivity of vineyards by 50%. This stem borer normally goes into pupation during second fortnight of March to mid-May. The pupal period is of about four weeks and the adult will remain inside the stem and wait for monsoonal rains to start. ICAR-NRC for Grapes, Pune has published a YouTube video on life cycle and management of this species of stem borer (<https://www.youtube.com/watch?v=Yvx7dlbPEAU>).

# Technologies released

## Growing grapes under plastic cover– Risk mitigation under changing climatic scenario

In India, widespread extreme weather events like hail, unseasonal rainfall, frost and temperature stress during the productive period from 2011 onwards is playing havoc with the grapevine productivity. Widespread hail storm events of 2014 in Maharashtra and Karnataka led to individual vineyards damage varying from 20 to 100 per cent and have now become regular feature either in one part or the other. The unseasonal rains during early growth stage in fruit pruning season leads to severe downy mildew infestation and crop loss whereas during ripening stage, results in severe berry cracking and possibility of loss of entire produce. The events of rainfall during September and October months in the year 2017, 2019 and 2020 is testimony to the extent of losses vineyards pruned during these period have suffered. Early onset of monsoon affects the fruitfulness especially in the May pruned vines.

Studies at ICAR-National Research Centre for Grapes for three years (2016-19) has shown that the use of plastic cover in vineyards has favourable impact on vine growth and productivity. The pooled data showed a significant increase in yield from 8.34t/ha under open conditions to 18.59t/ha under plastic cover. The use of plastic cover technology has also been validated in 2017, when rainfall event occurred during early growth stage in Fruit pruning season. The vines in the open and under hail-net experienced severe downy mildew infestation leading to very low productivity. However, the vines under plastic cover were not affected. The vines under plastic cover recorded significantly highest yield of 18 t/ha as compared to 7.1 t/ha and 3.6 t/ha respectively in vines under hail-net and open conditions. At ₹ 40/kg farm gate price, the yield realization was ₹ 6 lakhs/ha more than the

farm income earned from vines raised in the open. Further, another ₹ 69100/- was saved on account of reduction in six sprays for downy mildew disease.

The plastic cover has the following advantages:

- The problem of inflorescence necrosis/flower drop/bunch rot in addition to heavy incidence of downy mildew is addressed through plastic cover.
- Plastic covers protects the vines from damage to the vine parts (cordons, trunk& canes) and bunches from hails.
- It also reduces the berry cracking incidence due to unseasonal rains (accompanied with hails).
- Plastic cover on vineyards reduces the impact of temperature on vine growth and productivity.
- Due to low transpiration loss from the leaves, the irrigation water requirement is also reduced by 20% under plastic cover especially during fruit pruning season.

Specification and Cost of installation: The plastic cover used should be woven laminated film, UV stabilised to 580 kLy (Indian conditions) with anti-thermic properties (25% thermicity). It should have 85 to 90% light transmission with 65 ±5% light diffusion with cloth weight of 140±5% gsm/m<sup>2</sup>. It should also have anti-sulphur, anti-drip and anti-dust properties. The cost of plastic per acre ranges between ₹ 2.75 – 4.5 Lakhs depending upon whether it's imported or indigenous. The life of the plastic cover could range from 3 to 5 years depending upon quality of plastic. The cost of structure ranges from ₹ 2.5 – 3.5 Lakhs/acre for erecting on existing structure, whereas, for erecting independent support structure irrespective of Y trellis, the cost may range between ₹ 4.11 to 5 Lakhs/acre.



Overview of vineyard covered under plastic



Early and uniform bud sprouting under plastic

## Digital Maps on Climatic Suitability for Grape Cultivation

Climate plays an important role in commercial success of grapevine cultivation, so using geographic information system and long term climate datasets on temperature and precipitation digital maps indicating climatic suitability for grape growing in different regions of the country have been developed. Among the twelve different periods of five months duration namely January to May, February to June, March to July, April to August, May to September, June to October, July to November, August to December, September to January, October to February, November to March, December to April, one or more period may have favourable climatic conditions for grape fruit production. A summary map (Fig. 1) indicating climatic support in a region for at least one (one or more) fruit production period of five months duration for grape cultivation with respect to average monthly minimum temperature, average monthly maximum temperature and average monthly precipitation has been developed.

The climatic suitability has been indicated in terms of suitability classes namely high, moderate, moderately less, less and not suitable. In the same class dark colour is indicating relatively more climatic support as compared to light colour. All dark green regions are indicating high climatic support. In light green areas climatic support is comparatively less as compared to dark green areas. All green areas are indicating high climatic potential for grape cultivation.

Likewise maps for climatic suitability in different fruit production period (period wise climatic suitability maps) has been developed for fruit production period of five months duration. Fig 2, 3 and 4 shows climatic suitability for fruit production period during September to January, October to February and November to March. A thematic map (Fig. 5) indicating regions having climatic constraint to grape cultivation based on average annual precipitation in the region has been developed.

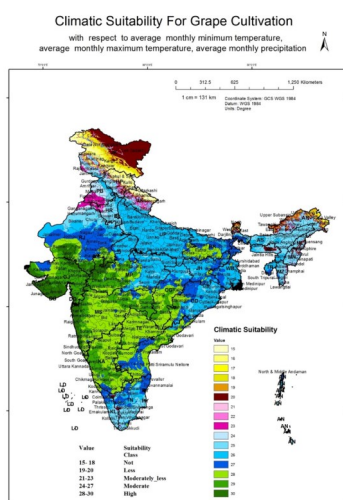


Fig.1 Climatic suitability for grape cultivation

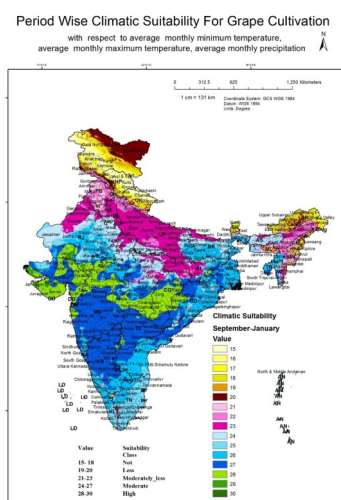


Fig.2 Period-wise climatic suitability for grape cultivation (September-January)

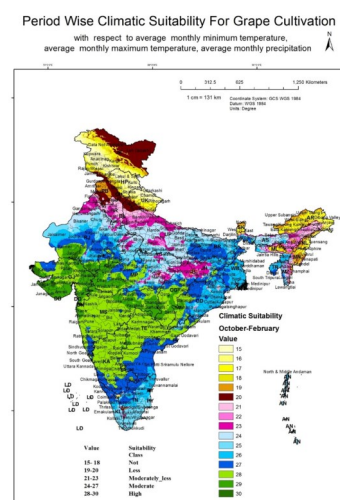


Fig. 3 Period-wise climatic suitability for grape cultivation (October-February)

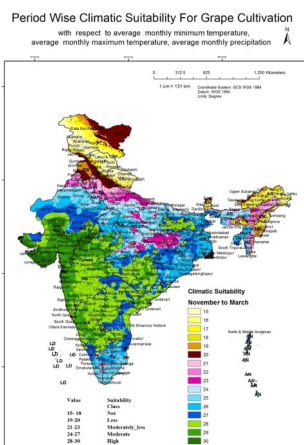


Fig. 4 Period-wise climatic suitability for grape cultivation (November-March)

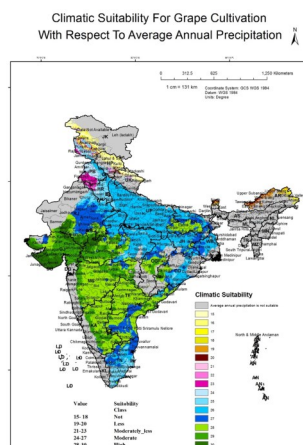


Fig. 5 Climatic suitability for grape cultivation with respect to average annual rainfall



## Grape varieties identified for State and Central release

The Centre has released four grape varieties viz., Manjari Naveen, Manjari Medika, Manjari Shyama and Manjari Kishmish at the Centre level. The release proposals of Manjari Medika (juice purpose) and Manjari Shyama (table purpose) are under consideration at state as well as central level.

State Varietal Release Committee: The proposals of Manjari Medika and Manjari Shyama were submitted to Mahatma Phule Krishi Vidyapeeth, Rahuri for varietal identification for state release. The proposals were approved in 48th Joint Agricultural Research Sub Committee (AGRESCO) meeting organized by Dr. Punjabrao Deshmukh Agriculture College, Akola during 27-31 October, 2020 through

virtual mode. Presently proposals are under consideration for state variety release committee.

Central Varietal Release Committee: The proposals for identification of Manjari Medika and Manjari Shyama for release at central level were presented in the 8th Group Discussion of ICAR-All India Coordinated Research Projects on Fruits held during 3-6th March, 2021. Based on the data presented and discussion in the session, both varieties were recommended for cultivation in Maharashtra, Karnataka, Telangana and Tamil Nadu. The proposals will be submitted to central variety release committee as per the recommendations of ICAR-AICRP on Fruits.

४८ वी संयुक्त कृषि संशोधन आणि विकास समिती बैठक : २०२०

### २. द्राक्ष-मांजरी मेडीका : मफुकृवि., राहुरी (राष्ट्रीय द्राक्ष संशोधन केंद्र, मांजरी, पुणे)

रसाचे अधिक प्रमाण, एक सारखा रंग, उत्कृष्ट प्रत, अधिक उत्पादन, अधिक अँटीऑक्सीडंट घटक असलेला व साधारण रोगप्रतिकारक क्षमता असा वैशिष्ट्यपूर्ण गुणधर्म असलेला द्राक्षाचा मांजरी मेडीका हा संकरीत वाण महाराष्ट्र राज्यात लागवडीसाठी प्रसारीत करण्याची शिफारस करण्यात येत आहे.



### ३. द्राक्ष-मांजरी श्यामा : मफुकृवि, राहुरी (राष्ट्रीय द्राक्ष संशोधन केंद्र, मांजरी, पुणे)

द्राक्ष मण्यांचा एकसारखा काळा रंग, चांगली प्रत व जाडी, फळकाढणीचा कमी कालावधी, जास्त अँटीऑक्सीडंट्स व अधिक उत्पादन देणारा मांजरी श्यामा हा वाण महाराष्ट्रात प्रसारीत करण्याची शिफारस करण्यात येत आहे.



## Start-up Spotlight: How robotics start-up 'Vinergy' is making the grape harvest more efficient

A new opportunity for robotics startups was created due to H-2A visa program faced uncertainty of labour availability for vineyards in California. As the labour supply becomes increasingly unpredictable, every second during the already stressful harvest season is even more valuable. Vinergy introduces an innovative solution to increase productivity and provide a more efficient harvest model. Vinergy carts are pre-loaded with empty boxes by a (human) cart operator. Pickers fill the boxes as the operator easily and safely moves the cart down each row with the touch of a button. Each cart is powered by a fully programmable, 36-volt electric motor with a continuous run time of eight to 10 hours. Forward and reverse functions with an electric brake allow for easy manoeuvrability. The start-up claims these devices significantly improve the most time-consuming, labour-intensive, and riskiest part of the harvest: transporting fruit from the vine to the end of the row (<https://agfundernews.com/startup-spotlight-how-robotics-startup-vinergy-is-making-the-grape-harvest-more-efficient.html>).

## OIV Ampelography Course

Considering the importance of identifying varieties in the international viti-vinicultural sector and the need to disseminate more widely technical and scientific work in the field of ampelography, the OIV has rescheduled this initiative with a cycle of international courses in ampelography. The main objective is both to train professionals and experts in the field of "Ampelography and Genetic Resources", and to create a pole and experts network which can exchange continuously around this important topic for the viti-vinicultural sector. To achieve this, the courses are designed in collaboration with international centres (<https://www.oiv.int/en/oiv-life/the-oiv-works-to-disseminate-ampelography>).

## Wine could help fight COVID

China Medical University in Taiwan showed that pure tannic acid can inhibit two enzymes critical to SARS that are also critical to Covid-19. It worked on two pathways. First, tannic acid was shown to have

the ability to inhibit the main protease of SARS, which is also the main protease of Covid-19. Proteases are enzymes that perform necessary biological functions in many organisms; protease inhibitors are how AIDS drugs work.

Second, tannic acid also inhibits an important enzyme in human cells, TMP RSS2. This enzyme is on the surface of human cells. When a human is infected by a coronavirus, the virus recognizes TMP RSS2 on the cell surface and clips it with its spike protein. Several research projects are looking into inhibiting TMP RSS2 and one inhibitor of it has already been approved for clinical use in treating Covid-19 (<https://www.wine-searcher.com/m/2021/02/wine-could-help-you-fight-covid>).

## Wine Production Estimates-2020

Based on information collected from 30 countries, which represent 84% of the world production in 2019, the world wine production (excluding juices and musts) in 2020 is estimated between 253.9 and 262.2 millions of hectolitres (mhl) with a mid-range estimate at 258 mhl. The 2020 production seems in line with the previous year i.e. +1% compared to 2019.

### World wine production scenario in year 2020

Country	2019 (mhl)	2020 (mhl)	% Variation (2020/2019)
Italy	47.5	49.1	3
France	42.2	46.6	11
Spain	33.7	40.7	21
USA	25.6	22.8	-11
Argentina	13.0	10.8	-17
Australia	12.0	10.6	-11
South Africa	9.7	10.4	7
Chile	11.9	10.3	-13
Germany	8.2	8.4	2
China	7.8	6.6	-16
Portugal	6.5	6.4	-2
Russia	4.6	4.4	-4
Romania	3.8	3.6	-7
Other countries	31.5	29.3	-1
<b>World Total</b>	<b>258</b>	<b>260</b>	<b>1</b>



# Meetings and Interactive Sessions

- Online meeting of stakeholders with APEDA, MRDBS and GEAI was organised on 13th October 2020 wherein problems related to grape industry in the country were discussed.
- A meeting with office bearers of MRDBS was organized on 10th November 2020 at ICAR-NRCG, Pune. The strategies to enhance the current EU-MRL of CCC to facilitate export of grapes were discussed in this meeting.
- The 22nd meeting of Research Advisory Committee (RAC) was held online on 18th March 2021 under the chairmanship of Dr. H.P. Singh, Former DDG (Hort.), ICAR and Founder and Chairman,

Confederation of Horticulture Associations of India. Dr. R. G. Somkuwar, Director (Acting) presented the Action Taken Report (ATR) on the recommendation of 21st RAC. All the scientists of the Centre attended the meeting and presented the progress report of their respective projects. Dr. H.P. Singh emphasized on the need of the country to produce more food and horticultural commodities to keep pace with the increasing population. He also appreciated the residue monitoring programme being run by the Centre and acknowledged the contribution of technologies developed by the Centre for the vineyard management.

# Institute events

- Commemoration of two year-long celebration of 150th Birth Anniversary of Mahatma Gandhi was organized on 2nd October 2020 at the Centre. Various activities like debate competition, essay competition, musical skit on life of Mahatma Gandhi, felicitation of women worker for doing excellent work, plantation, distribution of plants to poor families etc. were held during 25th September to 2nd October 2020. The 'Swachchhata' pledge was taken by Director and staff members.



- The Centre celebrated 70th Anniversary of adoption of Constitution in India by organising various programmes throughout the year from 26th November 2019 to 26th November 2020. On the concluding day (26th November 2020), the preamble of the Constitution was read by all staff members. Mr. B. L. Kokkula, Administrative Officer briefed about the different activities taken up during the year-long celebration. Dr. Ranjana P Patil, Principal, PDEA's LAW College ad-

ressed the gathering on fundamental duties, fundamental rights and important amendments of the constitution. The programme was conducted online and staff of the Centre actively participated in the event.



- The centre celebrated World Water Day on 22nd March, 2021. Mrs. Yukti Verma conducted a workshop on "Importance of water in our life" and presented thought-provoking documentaries on water crisis, water quality index, ground water depletion, contaminated water resources and the ways to conserve water. Dr. Kaushik Banerjee chaired the session and Shri. Prakash Bafna, a Progressive Grape Grower was the chief guest. Dr. Banerjee explained the main reasons behind deteriorating water quality like discharge of chemicals and pharmaceutical products in water and ways to enhance the quality of water.

- Vigilance Awareness Week was observed at the Centre during 27th October to 2nd November, 2020. The staff members took pledge on 27th October 2020 for promoting integrity, transparency and accountability in public life. Debate competition was organized on 29th October 2020 on "Will new education system play a role in curbing corruption". Assistant Commissioner of Police Mr. Kalyanrao Vidhate was Chief Guest of the programme. He highlighted the work of police officers in different sectors as well as their role in curbing corruption and during Covid-19 pandemic.



- The Centre celebrated 'Swachchhata Pakhwada' during 16th December, 2020 to 31st December, 2020. A cleanliness drive within campus was undertaken to improve the work efficiency and create healthy environment. A campaign on cleaning of sewerage and waterlines, awareness on recycling of waste water, application of water harvesting in agriculture, recycling of house hold waste and its utilization in kitchen garden was conducted in residential colonies and institute guest house area. Towards the end of Swachchhata Pakhwada, the Centre organized Swachchhta programme on 30th December, 2020 wherein Dr. Suraj Dengale (MBBS, MD)



from Loni Kalbhor was the Chief Guest. In an Interactive session on "Social Health under Covid-19 pandemic" he created awareness among the staff by answering their queries regarding Covid-19 pandemic scenario. On concluding day the Director shared his views about the need for Swachchhta programme to be continued throughout the year.

- केंद्र ने 14 से 21 सितंबर 2020 तक हिंदी सप्ताह मनाया। निदेशक डॉ. रा. गु. सोमकुवर की अध्यक्षता में 14 सितंबर को 'हिंदी दिवस' मनाया गया, जिसमें केंद्र के सभी अधिकारियों और कर्मचारियों ने अपने आधिकारिक कार्य को अधिक से अधिक हिंदी में करने की शपथ ली। इस अवसर पर निदेशक ने कार्यालयीन कार्यों में हिंदी को बढ़ावा देने तथा हिंदी सप्ताह को रोचक बनाने के लिए केंद्र में आयोजित विभिन्न प्रतियोगिताओं से अवगत कराया। 15 सितंबर 2020 को "हिंदी निबंध" प्रतियोगिता का भी आयोजन किया गया जिसमें केंद्र के कर्मचारियों ने उत्साहपूर्वक भाग लिया।



- The Centre celebrated International Women's Day on 8th March, 2021. A virtual programme on "Women Leadership in Agriculture: Entrepreneurship, Equity and Empowerment" was organised in morning session followed by different fun activities. Later, Mrs. Yukti Verma presented some thought-provoking documentaries on gender roles and advised women to scale new heights in all the aspects of life. The Director emphasized that women should be aware of their rights and try to assert them. Ms. Shraddha Vishwas More, a Professional Wine Maker from Nashik shared her success story of becoming a successful Entrepreneur. On this occasion, Mrs. Sujata Mukherjee Saha, a Professional Resume Writer from Pune guided the project staff of NRCG in a workshop on "How to Write an Effective Resume".



- The Centre staff with their family members celebrated 72nd Republic day on 26th January 2021 with utmost joy and enthusiasm. Dr. R. G. Somkuwar, Director hoisted the flag and addressed the gathering. He spoke about the sacrifices made by the freedom fighters to get the freedom that everyone enjoying today. In his speech, Director highlighted the salient achievements made by the Centre during past year and also inspired institute staff to continue this progress.



- The Centre celebrated its 25th Foundation Day virtually on 18th January, 2021. The celebration was chaired by Dr. A. K. Singh, Dy. Director General (HS), ICAR, New Delhi and the occasion was graced by various dignitaries. Dr. R. G. Somkuwar highlighted the achievements of the Centre during last one year. Various stakeholders like grape growers, grape exporters, agrochemical company representatives etc. participated the event and appreciated the support and technical guidance provided by the Centre. During the occasion, the Centre awards were conferred to staffs of different categories. A technical bulletin entitled "Foundation Pruning in Grapes" was released by the Chief Guest. Dr. A. K. Singh (DDG)



in his address emphasized the impact of climate change on grape industry and suggested that the Centre should Re-Search the available technological options, develop new initiatives to reduce production cost and double grower's income and also act as one step solution to solve different farming needs. A technical session on "Scientist-Industry Synergy for Sustainable Viticulture" was also organized in which researchers; growers and industry personnel deliberated on different aspects of grape cultivation and its commercialisation.

- The Centre celebrated National Science Day on 1st March 2021 with a theme "Future of Science Technology Innovation: Impacts on Education, Skills and Work". Dr. Y. S. Nerkar, a former Vice Chancellor, MPKV, Rahuri was the guest of honour for this programme. Dr. Nerkar shared his vision on the future of science, technology and innovation. He appreciated the services that ICAR-NRCG is rendering to the grape community regularly through need-based advisories. The Director highlighted Government initiatives on populariz-



ing science and the guidelines of ICAR that had been received in this regard. Dr. Kaushik Banerjee explained the concept of Raman Effect and highlighted its applications in the identification of food adulteration. Through posters and models, the research fellows and students of the Centre presented various technological innovations made by the Centre and their significant impact on enhancing the country's export and farmers' income. All the innovative products developed by the Centre like grape-pomace based cookies, cake and anthocyanin capsules were displayed. The various programme like debate competition, quiz contest on science, a demonstration to identify food adulteration etc. were also organised.

# Human Resource Development

## Training acquired

The institute continuously strives to develop the skill set of its personnel for improving their work efficiency and knowledge upgradation. Following personnel attended various training programmes:

1. Dr. R. G. Somkuwar attended online training programme on 'Market Research and Value Chain Management of Agricultural Commodities' organized by ICAR-NAARM, Hyderabad during 17-21st November 2020.
2. Dr. A. K. Upadhyay participated in the 'Management Development Programme on PME in Agricultural Research Projects (Online mode)' organized by ICAR-NAARM, Hyderabad during 12-17th October 2020.
3. Dr. K. Banerjee and Dr. A.K. Sharma participated in the 'Management Development Programme on Leadership Development (a pre-RMP programme)' organized by ICAR-NAARM, Hyderabad during 8-19th December 2020.
4. Mrs. Kavita Y. Mundankar attended Training Programme on 'Analysis of Experimental Data Using SAS (On-line)' organized by ICAR-NAARM, Hyderabad during 9-17th November 2020.
5. Dr. D. S. Yadav completed 6 months (May-October 2020) self-paced online non-credit course on 'Machine Learning' authorized by Stanford University and offered through Coursera.
6. Dr. Roshni R. Samarth attended 'Webinar and training on DUS data management/Automation/Image Analysis' organized by Protection of Plant Varieties and Farmers' Rights Authority under Indo-German bilateral cooperation on seed sector development during 6-7th October 2020.
7. Mr. N. S. Pathan participated in the 'Online Training Programme for Administrative and Finance Officers of ICAR' organized by ICAR-NAARM, Hyderabad during 23-27th Nov 2020.

## Training organized/given

The institute also continuously strives to develop the skill set of its resource persons and farmers through knowledge upgradation. Following training programmes were conducted:

1. Dr. K. Banerjee and Dr. Ahammed Shabeer T.P. has organised 'Proficiency testing programme for pesticide residue analysis in grape homogenate' during 11/09/2020 to 05/11/2020 wherein total 45 laboratories participated in this programme.
2. Dr. K. Banerjee and Dr. Ahammed Shabeer T.P. has organised 'Pre and post-harvest sampling of fruits, vegetables and peanut products for pesticide residue analysis for aflatoxin' during 05/11/2020 to 06/11/2020. Total 106 participants attended this programme.
3. Dr Ajay Kumar Sharma, Pr. Scientist (Hort.) and Dr Ahammed Shabeer TP, Sr. Scientist (Agril. Chem.) organized one day training programme entitled 'Entrepreneurship Development in Manjari Medika grapes' on 16th February, 2021. The training programme was organised under the aegis of Agri-Business Incubation Centre of ICAR-National Research Centre for Grapes, Pune wherein 25 trainees including student-cum-farmers, farmers, students, representatives from NGO and KVK have participated in the program.



Crimson Seedless



Manjari Naveen



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## Director's Desk



Grape is being grown on an area of 1.40 lakh hectare with annual production of about 3.12 million MT being Maharashtra and Karnataka the major contributors. During the last season, the region received rainfall of 892.3 mm. The grape season was satisfactory with

export of grapes in EU markets and no constraints were noticed for grape production as well as residue through export. However, due to corona pandemic, the grape growers could not realize sufficient profit through export and were forced to sell their produce in the local market.

ICAR-NRC for Grapes is supporting the grape growers for improving the yield and quality. Due to corona pandemic, the scientist could not reach to the grape growers physically but could support

through various digital platform like Facebook live program, YouTube, Zoom meetings, etc.

The Centre released “Manjari Medika” (juice variety) and “Manjari Shyama” (black seedless table grape variety) at state level and also the proposal for release of “Manjari Kishmish” (raisin purpose) at state level is submitted. The android based Mobile App “Grape Area Suitability” was updated and made ready for uploading on ‘Google play store’. This could be made possible mainly due to the team work of dedicated scientist and staff of this Centre. The interaction with the grape growers association and also with the individual growers most of the time is helping us to achieve the target and fulfil the mandate of the Centre.

(R. G. Somkuwar)