

Proceedings of State Level Seminar and Recommendation

A State Level Seminar on “**Improved technologies for production of vegetable and post harvest management with special reference to onion**” was held on 22 - 23 November 2014 at NHRDF Auditorium, Nashik. The seminar was arranged under MIDH by National Horticultural Research and Development Foundation, Nashik, Maharashtra.

Sh. D.K. Jain, IAS, Additional Secretary (Horticulture, Marketing and Trade), Ministry of Agriculture, Govt. of India was the Chief Guest of the inaugural session of the seminar on 22nd November 2014. Shri Umakant Dangat, IAS, Commissioner of Agriculture, Pune, Shri Eknath Dawale, IAS, Divisional Commissioner, Nashik and Dr. S.S.Adsul, Director Horticulture, Pune; Government of Maharashtra were the Guests of Honour.

In the Welcome address, Dr R.P. Gupta, Director, NHRDF, briefed about the activities and achievements of NHRDF. About 500 nos of farmers from different districts of Maharashtra attended the seminar.

In the inaugural address, Shri D.K. Jain appreciated the efforts made by NHRDF in development of vegetables, particularly onion and garlic, justifying their role in MIDH as a National Level Agency for development of vegetables. He made emphasis on use of irradiation technology to increase the shelf life of onion. The irradiation plant is available at Lasalgaon be utilized for the same. A large-scale demonstration at farmer’s field should be arranged at different places, so that losses in irradiated onions and without irradiated onions are compared. Government of India is ready to provide subsidy if required for arranging large-scale demonstrations during coming late kharif (Rangda) and rabi season. Additional Secretary also desired that suitability of cold storages for onion be studied and if required Government of India is ready to provide subsidies for construction of the storage. He also desired that the future market in onion should also be studied and risk associated if any be defined and farmers benefit in future trading be explored. The use of processed onion in different forms by the common consumer be highlighted through different media so that in case of excess production or in the scarcity of onion it may help to onion producers and consumers.

Shri Umakant Dangat, Commissioner of Agriculture, Government of Maharashtra addressed the farmers and asked to adopt the latest technology available for production of vegetables including onion. Government support through different schemes will continue to the farmers. He also desired that NHRDF may provide potato seed to potato growers of Maharashtra. Shri Eknath Dawale and Dr. S.S.Adsul also addressed the farmers.

The 1st technical Session on “Improved Production Technology of Onion” was chaired by Shri. Umakant Dangat, Commissioner of Agriculture, Pune (Maharashtra) and Co-chaired by Shri. Kailash Mote, Joint Director Agriculture, Nashik. Dr. P. K. Gupta and Dr. R.K. Singh of NHRDF were the Rapporteur during the session. This session covers two lectures i e. “Modern cultivation technology for maximization of onion production in Maharashtra and their recommended varieties” by Dr. Vijay Mahajan, Principle Scientist, DOGR, Rajgurunagar, Pune.

He explained in details the different methods for increasing production and productivity of onion. Sh. Subhash Nagare, Director, ATMA made presentation on “Production of Kharif onion by bulblets and direct seedling”. He presented the different methods of kharif onion cultivation and compared the different technologies recommended by NHRDF for kharif onion production in Maharashtra.

The 2nd technical session on “Quality standards for export of vegetables” was chaired by Dr. S.S.Adsul, Director Horticulture, Pune, Government of Maharashtra and Co-chaired by Shri Kailash Mote, Joint Director, Nashik Division, Govt. of Maharashtra. Dr. Vijay Mahajan, Principal Scientist, DOGR, Pune and Dr. R.C.Gupta, Asstt. Director (Pl.Path.), NHRDF, Nashik were the Rapporteurs. Chairman welcomed the speakers and stressed upon the importance of the quality standards of export

oriented vegetables, processed food and horticultural crops including onion. He discussed issues related to parameter of export standards and pesticide residue in different vegetables and fruits like okra, bitter guard, chilli, capsicum onion etc. Three speakers Dr. P. K. Gupta, Sh. Govind Hande and Sh. Umesh Ingawale delivered the lecture on “Quality standards of exportable horticultural produce- An initiative by APEDA”, “Maintain the traceability system of exportable vegetables to European countries” and “Water management in vegetable crops through micro irrigation and fertigation” respectively during the session.

The 3rd technical session on “Good Agricultural Practices” was chaired by Sh. A.K. Dabral, Sr. Advisor, NHRDF and Co-chaired by Dr. P.K. Gupta, Joint Director, NHRDF. Dr. D.K. Singh & Dr. R.K. Singh of NHRDF were the Rapporteur during the session. A total of 3 presentations were made in the session. The first presentation was made by Mr. Sanjay Patil from Dhanuka Agritech Ltd on “Weed management in vegetable crops” followed by Dr. Anil Ahire of Aries Agro Ltd on “Importance and imperatives in balance plant nutrition” and the last by Dr. R. C. Gupta from NHRDF on “Major diseases of onion and their management”.

The 4th technical session on “Protected Cultivation of Vegetables” was chaired by Shri. U. B. Pandey Ex-Director, NHRDF and Co-chaired by Dr. P. K. Gupta, Joint Director, NHRDF. Dr. R. K. Singh and Dr. R. C. Gupta of NHRDF were the Rapporteur during the session. This session covers two lectures *i e.* “Role of hybrids seeds for increasing vegetable production in the country” by Dr. Azar pathan, and “Protected cultivation of high values vegetable crops” by Sh. Sharad Pawar. The recommendation emerged out from the presentations are as under:-

The 5th technical session was chaired by Sh. C.M.Bari, DGM, MSAMB and Rapporteurs were Sh. H.P.Sharma, Dy. Director (Stat) and Dr. R.K.Singh, Asstt. Director (Hort.), NHRDF, Nashik. During the session two papers were presented one on “Marketing & export of onion” by Sh. D.M. Sable, AGM, MSAMB, Pune and other on “Sorting, grading & packaging of onion & other vegetables for export by Sh. C.M. Bari, DGM, MSAMB, Nashik. The farmers and other concerned discussed several issues related to marketing and export as the prevailing onion prices are less against the expectation of farmers.

The Plenary session was chaired by Dr. R.P.Gupta, Director, NHRDF and Co-chaired by Sh. C.M.Bari, DGM, MSAMB and Rapporteurs were Sh. H.P.Sharma, Dy. Director (Stat) and Dr. R.K.Singh, Asstt. Director (Hort.), NHRDF, Nashik. In this session proceeding of Technical session-I, II, III, IV and V were presented by respective Chairman / Rapporteur The following suggestions / recommendations were given in the Plenary Session:-

Following recommendations were made in the Seminar

- **Selection of varieties for proper season for good yield and storage**
Kharif – Agrifound Dark Red, Bheema Super and Bheema Dark Red
Rabi – Agrifound Dark Red, Bheema Raj, Bheema Kiran, NHRDF Red-2, and NHRDF Red-3
Hybrid onion for export to European and other such type of countries – Collina, Cougar, Excalibur and Kristal
- Mulching the onion nursery with paddy straw or sugarcane leaves for better germination and spray the Stomp @ 2 ml/l in nursery for control the weed
- Use of balance fertilizer (150:50:50:30) NPKS for good quality onion bulb production
- To check the luxury growth of plant and development of proper bulb, use of livocsine 6 ml/ l after 60–75 days after planting is very much effective.
- Onion production through bulblets in rainy season is good technology and produce quality onion bulb within 60–70 days from planting of bulblets.
- 12-15 g seed per square meter area required for desirable bulblets production.
- Direct seedling is suitable for refined, tractor drawn machine
- Pesticide residue in exportable horticultural produce/vegetables can be minimized by following the integrated management of insect pest and diseases.

- Irrigation with drip / sprinkler for one hour daily or 2-3 hours alternate days gave higher yield of onion and recommended to onion growers of Maharashtra
- A large-scale demonstration for irradiation of onion at farmer's field should be arranged at different places, so that losses in irradiated onions and without irradiated onions are compared. Demonstration be arranged during rabi season.
- Suitability of cold storages for onion be studied in comparison to conventional storage structures.
- Future market in onion should also be studied and risk associated if any be defined and farmers benefit in future trading be explored.
- Use of processed onion in different forms by the common consumer be highlighted through different media so that in case of excess production or in the scarcity of onion it may help to onion producers and consumers
- The time of weed emergence and time of weed removal play a key role in determining the yield loss and thus, the weed management should be done at crop-weed competitions stage.
- For weed management in tomato, the application of Quizolopof ethyl @ 30 ml + Metribuzin @ 15 g per sprayer is recommended, however, in bhindi, brinjal and cole crops the use of Quizolopof ethyl @ 2ml/l of water controls the weed effectively.
- The effective nutrient management minimizes the nutrient loss to the environment while maximizing the crop nutrient uptake.
- Balanced (adequate) use of plant nutrient improves shelf life, reduce pathogen activity, compensate disease damage, increase plant resistance and modify the soil environment.
- The identification of disease and causal organism, selection of appropriate fungicide, spraying of fungicide at appropriate concentration and time can effectively control the onion disease viz. damping off, stemphylinm blight, purple blotch, colletotihum blight, basal rot, downy mildew, onion yellow dwanf, IYSV, black mould and bacterial brown rot etc.
- Spray of fungicide and insecticides enhance the yield in onion and take due care of diseases and pests.
- Use of hybrid variety of onion and other vegetables for earliness, colour, uniformity, shape and size, good quality and higher yield
- Off season vegetables crops production in green house, net house and poly house viz.-colored capsicum and green cucumber most suitable to fetches excellent price in the local market as well as distance market.
- Most exportable varieties from India are Agrifound Dark Red and Agrifound Light Red to different countries.
- Radiation in onion through 30-90 Gy (Gama rays) to check the sprouting and enhance the storage of the varieties
- There should be concrete onion export policy, banning of onion export from time to time, imposing MEP on onion export & changing it time to time affects the pricing of onion & remuneration to farmers at the hands of traders. There shall be no channelizing agency for onion export. Onion export shall be freely permitted.
- There should be MSP on onion so that farmers could not suffer loss, when prices are below the economical level.
- Easy availability of ventilated railway wagons for long distance transportation of onion and removal of Quota system.
- A rack of 40 bogies consisting of 16000 Quintal onions shall be unloaded at 2-3 stations with 300 km distance between two stations or railway shall provide minimum 20 bogies in rack (at present 40 bogies is compulsory) which will help traders to transport at various places.
- Facility of rail transport for vegetables & fruits from Nashik to Mumbai.
- Processing units for processing perishable vegetables be developed through APMCs by providing special incentives and subsidies.
- Special commodity markets be developed.