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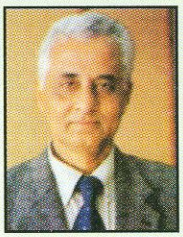
ONION - GARLIC NEWS

A biannual publication by National Research Centre for Onion and Garlic

CONGRATS TO NEW DG

NRC for Onion and Garlic offers a hearty congratulation to Dr. Panjab Singh, Secretary DARE and Director General, Indian Council of Agricultural Research who took over the reins on 5.10.01.

WELCOME TO NEW DDG, HORT



NRC for Onion and Garlic congrats the new head of Horticulture, Dr. G. Kalloo, former Director, Indian Institute of Vegetable Research, Varanasi and eminent researcher and renowned author in the field of vegetable research who took over the charge on 28.9.01.

RESEARCH HIGHLIGHTS

CROP IMPROVEMENT

Pearl onion for pickles

In white onion germplasm collected from Maharashtra, M.P & Gujarat, seedlings produced knots after 45 days of sowing. The percentage of knotting varied from 0 - 89%. Those germplasm producing > 70% knots have been identified and will be further purified for developing lines suitable for producing small onions for pickle purpose.

Performance of white onion germplasm

56 white onion germplasm lines, collected in the form of seeds were evaluated during *kharif* season, where, acc.no.s W-393, W-394, W-396 and W-404 were found to be promising over check variety, Phule Safed.

White onion germplasm with high T.S.S. and storability

Among 300 accessions of white onion germplasm lines collected, the T.S.S. ranged between 5-23^0 Brix. Amongst them, bulbs having TSS below 14% was about 97.28%, whereas, those above 17^{0}B was only 0.43%. In three accessions, there were no losses due to sprouting and rotting in storage even after 7 months, whereas, one hundred and thirty four accessions recorded losses above 50%.

Forced flowering of long day type onion

Efforts on forced flowering of exotic white, yellow and red onion by treating them with different chemicals and also by giving them cold shock is under way

Identification of male sterile line

The male sterile line observed amongst the germplasm could not be maintained even after being crossed with maintainer line MS 48B.

Heterosis breeding

In line x tester programme, the 73 crosses (selected germplasm and varieties crossed with MS 48A and MS 65A) obtained were planted for evaluation purpose in *rabi* along with their respective parents to test for heterosis.

Interspecific hybridization

The six interspecific hybrids obtained from crosses of *Allium cepa* with *A. fistulosum*, were planted in the green house to study their performance and their hybrid status. Results are awaited.

CROP PRODUCTION

In methods and date of planting for *kharif* onion, it was seen that broad based furrows with drip irrigation system was better over ridges and furrows & raised and flat bed system. 15 June planting gave the best result in terms of yield.

CROP PROTECTION

Disease incidence in onion

Major diseases in onion in *kharif* season were SLB (15-72%) anthracnose (0-21%) and bulb rotting (1-36%). Maximum number of spores was trapped at one foot above the ground level in the months of August and September.

Bulb rotting was reported for the first time in this Centre and is as a result of bacterial rot of onion caused by *Pseudomonas aeruginosa*. The symptom of rotting starts from collar region and extends downwards to the basal portion of the bulb. As a result, the inner scales of the bulbs become soft and the bulb becomes unmarketable.

Anthracnose and bulb rotting did not occur in *rabi* season. However, SLB was common. Propioconazole (Tilt) effectively reduced SLB in onion.

Bulb mites on garlic and seed onion - A First Time Report

Bulb mites (Acarid mites) were recorded on onion seed crop and garlic for the first time during *rabi*, at this Centre. These mites are shiny, creamy white and bulbous in appearance having four pairs of short brown legs. They generally occur in clusters inhabiting areas under the root plates of onion bulbs or garlic cloves. These mites damage the bulbs by penetrating through the outer layer and also helps other rotting organisms to gain entry. Root plate gets detached and as a result the plant dries. In severe infestations, mites are seen inside the flower stalk too. Soil drenching with dicofol (2ml/l) is recommended to control this pest.

POST HARVEST TECHNOLOGY

Preliminary studies on behaviour of cold stored onion shows that the losses due to sprouting are high.

TRANSFER OF TECHNOLOGY

LECTURES / TALKS

K.E.Lawande, Director, delivered lecture on 'Kanda Utpadan Va Vyavasthapan' at Maldad organized by Shramshakti Krishi Vidyalaya (Associated with MPKV Rahuri), Maldad, Sangamner, Ahmednagar on 13 September, 2001.

K.E.Lawande, Director, delivered lecture on 'Kanda Pikache Niyojan' at Wadu Budruk, Shirur, Pune organized by Dept. of Agriculture, Govt. of Maharashtra, TAO, Shirur and BASF Ltd., Mumbai on 14 September, 2001.

K.E.Lawande, Director, delivered addressing speech for Science Association on 'Modernisation in the Field of Agriculture' at Rajgurunagar organized by Hutatma Rajguru Mahavidyalaya, Rajgurunagar on 15 September, 2001.

K.E.Lawande, Director, delivered lecture on 'Onion' at Chandkhed organized by Sant Ramjibaba Shetkari Mandal, Chandkhed, Maval, Pune on 25 October, 2001.

Md. A.A.Qureshi, Scientist (Soil Science) and **V. Mahajan**, Sr. Scientist (Hort.) attended an NSS Camp at Wadu Budruk and gave a talk on 'Importance of Soil Testing in Agriculture' and 'Onion Production Technology', respectively organized by Mahatma Phule College, Pimpri on 26 December, 2001.

K.E.Lawande, Director delivered a radio talk at All India Radio, Pune on 'Onion-Garlic Production' on 30 October, 2001.

PARTICIPATION IN EXHIBITIONS

Dr. V. Mahajan, A.P. Trivedi and S.S. Dhumal participated in Jai Kisan Agri-Exhibition at A.P. I. Company Ground, Aurangabad on 2-5 Nov. 2001.

Dr. V. Mahajan and M.K. Chandra Prakash participated in Agricultural Exhibition 2001 organised by NHRDF, Nasik at Bikramganj, Patna on 2-3 Dec. 2001.

Dr. V. Mahajan, Dr. Aziz Qureshi, V. Sankar and A. P. Trivedi participated in Krishi 2001 organised by Global Exhibitions at Govt. Engg. College Ground, Pune from 27-30 Dec. 2001.

PAPERS PRESENTED / PUBLISHED

Sankar,V., K. E. Lawande, A. Qureshi and P. C. Tripathi. (2001). Drip and sprinkler irrigation in garlic. *Spice India.* 14 (11): 22.

Sankar,V., P. C. Tripathi, Md. A. A. Qureshi and K. E. Lawande. (2001). Effect of organic seaweed extract on growth and yield of onion var. N-2-4-1. *South Indian Horticulture. 50th year Special* Vol. 49: 247 - 248.

Sankar,V., Md. A. A. Qureshi, P. C. Tripathi and K. E. Lawande. (2001). Micro irrigation studies in garlic. *South Indian Horticulture. 50th year Special* Vol. 49: 379 - 381.

Kirtane, S., K.E.Lawande and K.N.Dhumal. (2001). Mutagenic effects in onion i) Effect of sodium azide on

physiological and biochemical changes in onion *(Allium cepa L.)*. **In:** UGC sponsored National Conference Plant Biotechnology for Indian Agriculture, Abstracts and Souvenir, organized by Botany Research Centre, Vasantrao Naik Mahavidyalaya, Aurangabad from October 7-8, 2001: 26.

Srinivas, P.S and K.E.Lawande. (2001). Critical growth stages in onion for thrips management. **In :** Proceedings of the Second National Symposium on Integrated Pest Management (IPM) in Horticultural Crops: New Molecules, Biopesticides and Environment, IPM in Horticultural Crops: Emerging Trends in New Millennium, Published by AAPMHE, IIHR, Bangalore from October 17 - 19, 2001: 96.

Srinivas, P.S and K.E.Lawande. (2001). Seedling root dip for management of thrips in *rabi* onion. Ibid, pp:73

Dhumal, K.N., S. Kirtane, S. Datir and K.E.Lawande. (2001). Studies on gamma radiation induced cytological and biochemical changes in onion *(Allium cepa L.)*. **In :** National Seminar on 'Role of Plant Physiology for Sustaining Quantity and Quality of Food Production in Relation to Environment' from December 5 - 7, 2001: 90.

Kirtane,S., K.E.Lawande and K.N.Dhumal. (2001). Effect of EMS on physiological and biochemical changes in onion *(Allium cepa L.)*. Ibid, pp: 95.

PARTICIPATION IN SEMINARS / SYMPOSIA/ WORKSHOPS

Tripathi P.C., Sr. Scientist (Hort) attended NATP Technical Workshop from 3 - 4 , July, 2001 at CIPHET, Ludhiana.

Sankar, V, Scientist (Hort.) participated in National Seminar on Changing Scenario in the Production Systems of Horticultural Crops from August 28 - 30 at TNAU, Coimbatore.

Lawande, K.E, Director participated in workshop for NATP on 'Development of hybrids in vegetable crops' at IIVR, Varanasi from September 25 - 26, 2001.

Mahajan, V, Sr. Scientist (Hort.) and **M. K. Chandraprakash**, Scientist (CA) participated in National Seminar on Production and Post Harvest Management of Vegetable Spices on December 2 - 3, 2001 at Bikramganj, Bihar organized by NAFED and NHRDF, Nasik.

HUMAN RESOURCE DEVELOPMENT

TRAININGS

Name	Title	Duration	Institute
M.K.Chandraprakash Scientist (CA)	73 FOCARS	June, 1 - Sept. 28, 2001	NAARM, Hyderabad
Asha Devi Scientist (Genet.)	NATP - TOE project on Human Resource Development in Plant Genetic Engineering and Molecular Breeding	June, 1 - Aug. 31, 2001	NRCPB, New Delhi
K.E.Lawande Director	Indo-Egypt work plan for studying onion and garlic production	July 6 - 12, 2001	ARC, Egypt
N.Gopal AAO	Refresher training course on O & M Reforms in Administrative and Financial Management	July 23 - 31, 2001	NAARM, Hyderabad
V.Mahajan, Sr. Sci (Hort.) & Asha Devi, Scientist (Genet.)	Training Programme on IPR and WTO Awareness	Sept. 18 - 20, 2001	CIFE, Mumbai
P.C.Tripathi, Sr. Sci (Hort.) & V.Mahajan, Sr. Sci. (Hort.)	Agricultural Research Prioritization and Impact Assessment	Oct. 8 - 12, 2001	NRCAP at TNAU, Coimbatore.
M.K.Chandraprakash Scientist (CA)	Java Programming	Oct. 29 - Nov. 10, 2001	IASRI, New Delhi

AWARDS

Sankar, V, Scientist (Hort.) received the Best Paper Presentation award from Prof. S. Kannaiyan, VC, TNAU in the National Seminar on Changing Scenario in the Production Systems of Horticultural Crops from August 28 - 30 at TNAU, Coimbatore, organized by South Indian Horticultural Society.

INSTITUTIONAL ACTIVITIES

MEETINGS

IV IMC meeting took place on 19.10.2001. Six new members were nominated viz., Dr. R.B.Deshmukh, Director of Research, MPKV, Rahuri; Dr. J.P. Mahalle, Director of Horticulture, Govt. of Maharashtra; Dr. N.M. Shah, Director of Horticulture, Govt. of Gujarat; Sh. Dhanajay Kumar, Patna; Prof. Rajendra Prasad Singh, Nalanda and F & A.O, CIFE, Mumbai.

IV RAC meeting was conducted during this period on 20.10.01 under the Chairmanship of Dr. M.L.Pandita where an appraisal of the research programmes undertaken by the scientists was discussed

BRAIN STORMING SESSIONS

A one-day Group Discussion on 'Post Harvest Management of Onion' was held at Rajgurunagar on September 21, 2001.

A Brain Storming Session on 'Management of Onion Thrips' took place on 6 October 2001.

SPORTS

A contingent of ten members from the Centre participated in the ICAR Inter Institutional Zonal Sports Meet at CIAE, Bhopal from 3 to 6, Nov.

हिन्दी सप्ताह

हिन्दी सप्ताह दिनांक ०७/०९/२००१ से १४/०९/२००१ तक मनाया गया, एवं मुख्य समारोह १४/०९/२००१ को आयोजित किया गया जिसमे श्री श्रीकांत टी. जॉनराव, शाखा प्रबन्ध, भारतीय जीवन बीमा निगम, मुख्य अतिथि के रुप में उपस्थित थे।

इस अवसर पर केन्द्र के निदेशक डा. किसन ए. लवांडे तथा मुख्य अतिथि ने हिन्दी के प्रयोग तथा महत्व पर प्रकाश डाला। कार्यक्रम के अन्त में विजेताओं को पुरस्कार वितरित किये गये।

PERSONNEL

TRANSFERS

Sh.G.S.S.R.Krishnan, T-5 (Library) was transferred to NIANP, Bangalore on 18.8.01.

DISTINGUISHED GUESTS

Name	Designation	Date
Purushottam Bapkar	Registrar, MPKV,Rahuri	27.08.01
Phil Hancock	South Pacific Seeds, Griffith, Australia	
V.C.Sarangi	Div. Commissioner, Pune	02.10.01
Dr.S.A.H.Abidi	Member, ASRB, New Delhi	05.10.01
Dr.N.S.Talekar,	Scientist, AVRDC, Taiwan	06.10.01
Dr.M.L.Pandita	Advisor, F&V Unit, MDFVL, NDDB, N.Delhi	20.10.01
Dr.G.Kalloo	DDG(Hort.), ICAR	27.10.01

FROM THE DIRECTOR'S DESK

Onion and garlic are the crops of masses, grown worldwide. China and India are the leaders in area and production of these crops. However productivity wise, countries like Netherlands, USA, Turkey, and Egypt are far ahead of us. Egypt is considered to be the secondary centre of origin for onion. The production of onion and garlic in Egypt is as old as the pyramids and there are reports that the workers engaged in the construction of pyramids used to consume a sizable quantity of onion and garlic.

During the period under report, I happened to visit Egypt under Indo-Egypt Work Plan for studying onion and garlic production in that country. Here, onions are grown all over the country i.e. Northern part of Egypt (Delta), Middle Egypt and Upper Egypt (southern part), whereas, garlic is grown only in Delta area. In Delta area, early summer crop is grown with dark red type onion like Behary Red and this is exported to Arabian countries and also used for local consumption. The onions are bigger in size (> 65 mm diameter) and very compact with good storage life. In middle and upper Egypt, winter-crop is grown which is inter-planted with cotton. The variety grown in this area is mostly Giza-6 which is light red in colour having very good keeping quality. The crop is mostly used for export to European countries and for dehydration purpose. Prior to construction of Aswan Dam in Upper Egypt, farmers in middle Egypt and Delta used to grow onions after recession of floodwaters from river Nile. The seedlings were transplanted in residual moisture and farmers used to get good crop with an average productivity of 350-450 q/ha. The floods of Nile used to deposit fresh soil every year and farmers were required to go for very less quantity of fertilizer applications. After construction of the dam, the floods of Nile have been controlled and there is regulated supply of irrigation water through canals. As there are no fresh deposits of soil, the soils have become sick due to Sclerotium rot (white rot), as otherwise, the fungal culture used to be washed out by floodwater. As a result productivity has come down. The scientists have planned programmes for developing Sclerotium resistance varieties and for modifying cultural practices so that the infestation can be avoided. The greatest problem faced by Egyptian farmers is the fluctuating prices and variations in the released varieties. There is no control over seed production and also the market system. These problems of the Egyptian farmers are very much similar to that of their Indian counterparts. Diversifications of agriculture towards more profitable crops than onion compel the farmers to pay less attention to onion, which is becoming a more volatile commodity. Since, this country is situated centrally, it has great advantage of nearness to European countries and this situation can be very well exploited by developing yellow onion varieties for export to these countries.

The productivity of garlic in Egypt is 25 t/ha, which is six times higher than that of India. The garlic crop in Egypt is planted in September and harvested in April and enjoys fairly good climate during bulb development. As a result, the productivity is on the higher side. Further, the clones developed from Chinese garlic through clonal selection are very well adapted to Egyptian conditions, which further contribute to higher productivity.

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