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TO STUDY THE POST-HARVEST MANAGEMENT OF ONION CROP IN CHANDWAD AND YEOLA TAHSIL OF NASHIK DISTRICT

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Abstract

India is the second largest producer of onion in the world, but far behind of many countries in terms of productivity onion is among the most important horticultural crops grown worldwide for its culinary preparations and spicing food dishes. Besides being used as condiments, the medicinal properties of onion add value to its importance. Maharashtra is a pioneer state in onion production contributing 25% of country's onion. To ascertain reasons for low productivity of onion, it was thought imperative to find out the constraints faced by farmers in respect of onion production. The data has been collected from total 100 farmers, 10 each from 10 villages from Chandwad andYeola tahsils. It was found from the study that crop damage due to erratic rainfall at the time of harvesting of kharif onion and nursery preparation of Rabi onion was the major constraint faced by 73% farmers. In the year 2014, monsoon was delayed by one month and afterwards there was continuous rainfall till November and 200-300 mm rainfall was recorded in onion growing states in the month of Oct-Nov which was unusual. In November, there were unseasonal heavy rains in many onion growing pockets of Maharashtra, which caused damage to onion crop in different stages. The erratic and untimely rains damaged the kharif, late kharif crop as well as rabi onion nursery. The kharif onion ready for harvest was affected by 30-40%, late kharif which was planted in Sept-Oct got affected by 15-20% and rabi nursery damaged by 20-25%. It has been observed that the kharif crop planted in flat beds, which is a regular practice by farmers, gets affected by Anthracnose disease due to water stagnation. Bulb development was affected due to soil borne diseases like bulb rot, besides foliage damage by Colletotrichum. There is need for mass demonstrations of DOGR developed techniques of planting seedlings on raised bed (BBF) and irrigation through drip or sprinkler.

Key words: Constraints; Climatic change; Onion production; Crop damage;

Introduction

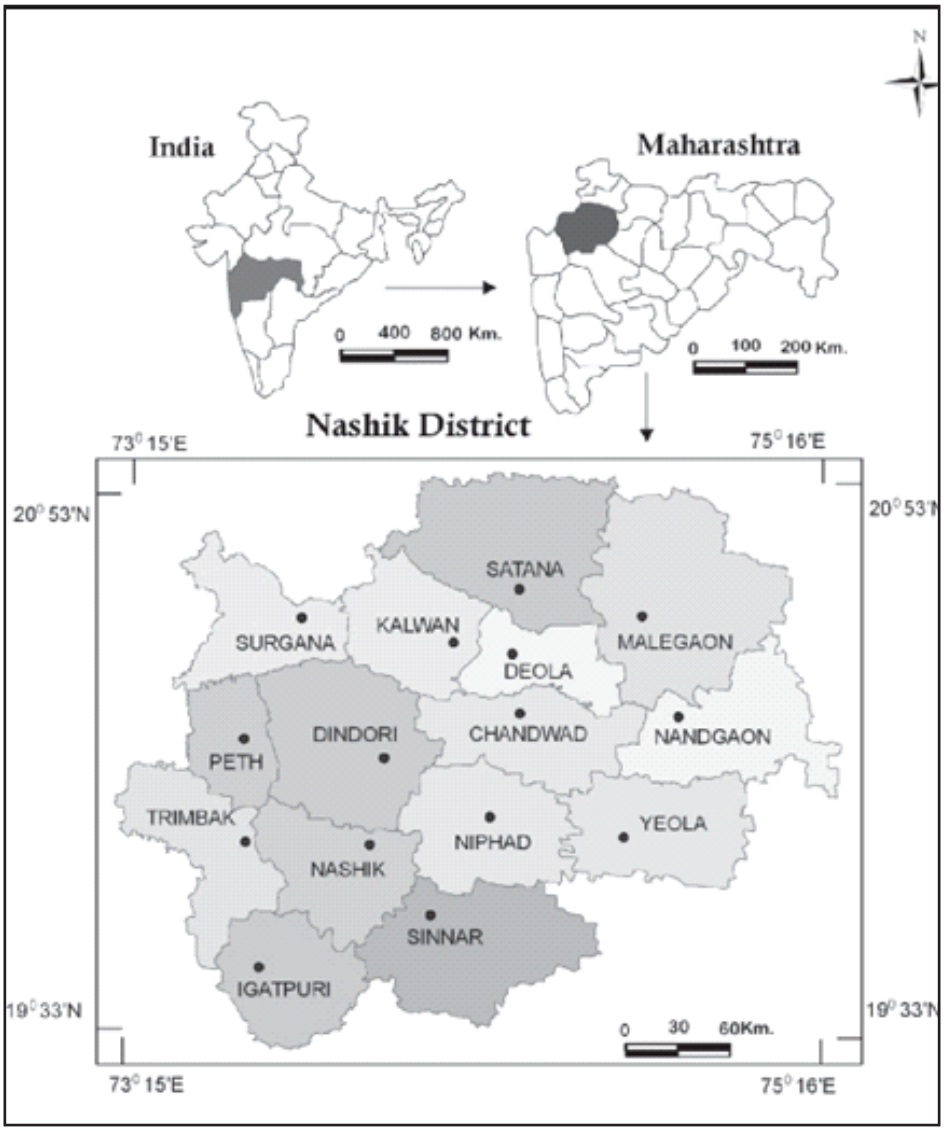
India is the second largest onion producer after China in the world, but far behind of many countries in terms of productivity. The productivity of onion (16 t/ ha) is low as compared to USA (49 t/ha), Netherlands (35 t/ha) and China (22 t/ha). Maharashtra is leading state in area, production, productivity and export of onion. It is a pioneer state in onion production contributing 25% of country's onion. 90% of export augmented from Maharashtra alone amounting to Rs. 800-900 crores. The districts like Nashik, Pune, Ahmednagar, Satara, Solapur, Dhule, Nandurbar, Usmanabad, Aurangabad and Buldhana are leading in onion production. The rural people in these districts of Maharashtra are mainly engaged in onion farming which is the major source of their income. The rapidly changing global marketeconomy, urbanization and growing need for value added products gradually changing subsistent agriculture to commercial agriculture. Extensive variability in quantity and distribution of rainfall causes severe crop damages and economic losses to farmers.

Study Area

Nashik District is situated partly in the Tapi basin and partly upper Godavari basin. It liesbetween 19° 33` to 20° 53` north latitude and 73° 15' to 75° 16' east Longitude (Nashik Gazetteer,1983). Nashik is one of the agriculturally dominant districts in the Maharashtra. Nashik District has an area of 15,530 Sq.k.m. Nashik district had population 6,109,052 as per the 2011 census. Location of the study area is showed in Map No.1. The district is divided into 15 tahsils.Only Chandwad and Yeola tahsils are selected for the case study.Rice, Sugarcane, Onions, Grapes, Pomegranate and Vegetables are the dominant crops of this region. Onion is the dominant crop in the study region. The climate of the district is generally dry except during the monsoon season.The rainfall in general decreases from west to east. The summer season is moderately hot and the temperature

varies from 36° c to 43° c. The air is humid during the monsoon season and is generally dry during the rest of the year.

Nashik District: Location Map



Map No.1

Objectives –

To study the post-harvest management of onion crop in study region

Methodology

The Chandwad andYeolatehsil of Nashik districts were selected for the study. Five villages were randomly selected from each tahsils. Ten farmers from each village were selected for the study on the basis of randomized sampling method. Questionnaireschedule has been developed by taking experts' views into consideration. The data has been collected with the help of pre-tested

interview schedule from total 100 farmers, 10 each from 10 villages viz, Nimbale,Usavad, Daregaon, Vaki (B) and Dugaon from Chandwad and Nilkhede,Patoda, Andarsul,katarani and Deshmane from Yeolatahsil. Respondents were interviewed personally in their respective villages. The collected data was tabulated, statistical tools were applied, and interpretations were made in the light of objectives.

Results And Discussion

Table No.1 Constraints the post- harvest management of onion farming in Chandwad and Yeolatehsil.

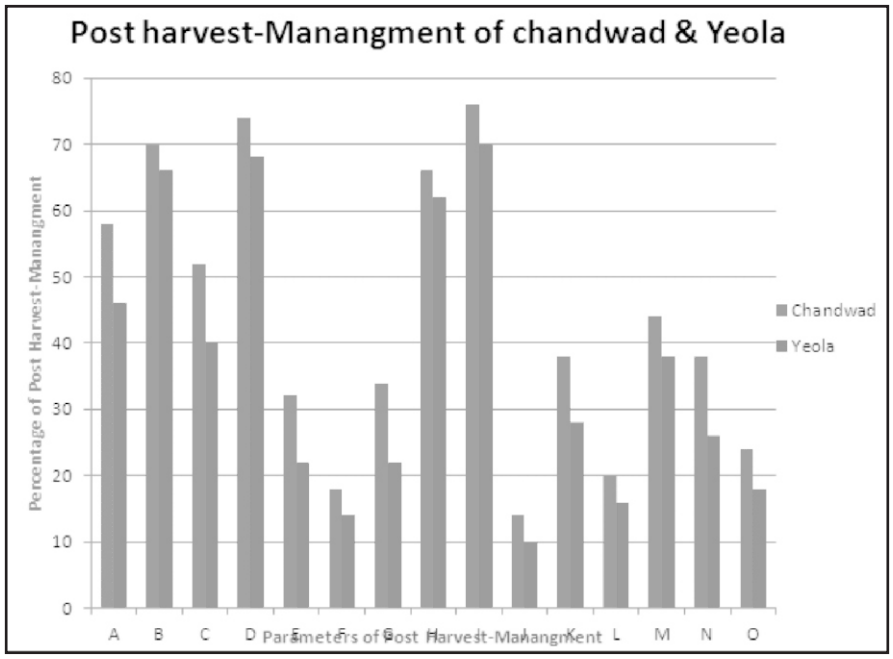
Parameters of post harvestManagement	% of Chandwad	% of Yeola
A	58	46
B	70	66
C	52	40
D	74	68
E	32	22
F	18	14
G	34	22
H	66	62
I	76	70
J	14	10
K	38	28
L	20	16
M	44	38
N	38	26
O	24	18

Source: Tabulated by Researcher

Description of Parameters of post-harvest Management

A-Inability to maintain isolationdistance during seed production. B-Spurious seed supply from seed companies. C-Weed problem. D- Labour shortage at the time of transplanting. E- Fertilizer shortage. F- Unavailability of insecticides, pesticides and herbicides in time. G-Unable to control pest and diseases. H-Lack of scientific knowledge about field operations. I-Crop damage due to erratic rainfall. J- Non-scientific way of grading and packaging. K-Non-scientific storage structure .L- More cost involved in transportation. M-Market price fluctuation. N-Less marketable share due to bolters, twin bulbs, etc. O-Competition in the market.

Post harvest-Manangment of chandwad & Yeola



Results

It was revealed from findings (Table 1) that crop damage due to erratic rainfall was the top most problem faced by 76% farmers in Chandwad and 70% in Yeolatahsil. Other important constraints faced by onion growing farmers were labour shortage at the time of transplanting (74%) and (68%), spurious seed supply from various companies (70%) and (66%), lack of scientific knowledge of farmers (66%) and (62%), and inability of farmers in maintaining isolation distance during seed production (58%) and 46%) respectively in Chandwad and Yeolatahsil.

June to December is the production period for kharif onion, planting of seedlings of late kharif crop and raising nursery for rabi season. In the year 2014, monsoon was delayed by one month and afterwards there was continuous rainfall till November and 200- 300 mm rainfall was recorded in onion growing states in the month of Oct-Nov which was unusual. In November, there were unseasonal heavy rains in many onion growing pockets of Maharashtra, which caused damage to onion crop in different stages. The erratic and untimely rains damaged the kharif, late kharif crop as well as rabi onion nursery. The kharif onion ready for harvest was affected by 30-40%, late kharif which was planted in Sept-Oct got affected by 15-20% and rabi nursery damaged by 20-25% (NHRDF, 2014). Sowing of rabi nursery also got delayed in Maharashtra. It has been observed that the kharif crop planted in flat beds, which is a regular practice by farmers, gets affected by Anthracnose disease due to waterstagnation. Bulb development was affected due to soil borne diseases like bulb rot, besides foliage damage by Colletotrichum. Knowing this critical production gap, DOGR developed techniques of planting seedlings on raised bed (BBF) and irrigation through drip or sprinkler. Many farmers are adopting this practice and enhancing their onion productivity. Gadge, et.al. (2014) found cases of 10-12 tons/ha yield in flat bed, while 20-25 tons/ha was observed in the field of farmers who planted seedlings on raised beds and used micro-irrigation as per DOGR recommendation under same rainfall pattern.

Conclusion

It was inferred from the study that crop damage due to erratic rainfall at the time of harvesting of kharif onion and nursery preparation of rabi onion was the major constraint faced by 73% farmers. Agricultural/ horticultural output gets directly or indirectly affected due to change in rainfall pattern. Aberrant weather conditions have always been unpredictable and often impairing realizable crop yields. Extensive rainfall, cloudy weather in kharif and late kharif season reduce crop yield up to 60-70%. The soil-borne and fungal disease build-up is very high during kharif season. Excessrainfall associated with poor drainage enhances soil- borne diseases. Developing varieties resistant/tolerant to aberrant weather conditions would be crucial in future. Innovative agronomic practices, viz., raised bed planting; micro-irrigation, fertigation, mulching, etc arepossible adaptation measures to climate change in onion. There is need for mass demonstrations of these technologies by development departments to increase yield level of onion crop even in adverse climatic conditions.

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