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1	Screening Of Mycoflora On Allium Cepa L. From Different Localities Of Parner Tehsil Maharashtra	Dnyaneshwar K. Sherkar	Botany	Wesleyan Journal of research	2021	09751386



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**SCREENING OF MYCOFLORA ON *ALLIUM CEPA* L. FROM DIFFERENT LOCALITIES OF  
PARNER TEHSIL MAHARASHTRA.**

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**ABSTRACT**

Onion (*Allium cepa* L.) is belongs to the family Liliaceae. It is a crop grown throughout Maharashtra and it is cultivated in all season. It is common cash crop in Maharashtra. The bulb and leaves of onion are edible part, usually it is consumed after cooking although it can be eaten fresh. Onion crop is affected by different fungal pathogen. Present study was deals with survey of fungal diseases of onion during a field visit to different localities. A purple blotch on onion leaves and black mould on bulb of onion is predominately observed. The other fungal diseases like damping off and basal rot also observed in general. Isolation of fungal pathogen is done by using PDA media. Morphological characters were studied and identified. The fungal pathogen included *Alternaria porri*, *Fusarium spp*, *Apergillus niger*, *Rhizoctonia spp*.

Key words: Onion, fungal diseases, PDA medium.

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**INTRODUCTION**

Mostly onion cultivated all over Maharashtra as a cash crop. Currently total area under onion cultivation is 1.74 million hectares of the world while total onion yield is 86.34 million tones (5). Now a days next to China India is the second largest producer country of onion (9). Maharashtra stood first in production of onion in 2019-20 by producing 10683 metric tons, total productivity was 17.29 tons/ha (3). Maharashtra is the largest producer of onion producing about 33 per cent of the total production in the country (7). Due to its pungency when chopped

contains sulfenic acid which irritates the eyes with tears. Onion contain and flavonoids and phenolics which has potential anti-inflammatory, anti-cholesterol and antioxidant properties. Most onion cultivars contains about 89% water, 4% sugar, 1% protein, 2% fibre and 0.1% fat, vitamin C, vitamin B6, folic acid and numerous other nutrients in small quantity. Onion is commonly used in spices and condiments also. They are low in fats and sodium. They can contribute their flavour to savoury dishes without increasing caloric content (8). Among the different onion growing states, Maharashtra tops in area and production, followed by Karnataka, Madhya Pradesh and Andhra Pradesh. Maharashtra has highest share both in area (24.73%) and production 27.72% (3). Onion yield is loses due to attack of different pathogen like mycoplasma, virus, bacteria, nematodes and fungi but out of all pathogen, fungi is most destructive pathogen due to that pre harvest as well as post harvest loss of onion is done on large scale. So keeping this view, present investigation are carried out for isolation and identification of fungal pathogen from different localities of Parner Tehsil.

## **MATERIALS AND METHODS**

### **Collection of samples**

Infected plant material of onion were collected from the different five fields namely Nighoj, Supa, Vasunde, Jamgoan and Panoli areas belongs to Parner Tehsil. Infected plant sample were collected in the polythene bags, that bag was brought in to the laboratory of Department of Botany, New Arts, Commerce and Science College for further studies. Isolation and identification was done as per standard protocol (2) and Demataceous hyphomycetes (4).

### **ISOLATION AND IDENTIFICATION OF FUNGAL PATHOGEN**

The collected infected plant samples were washed first with tap water followed by distilled water and then with 1% sodium hypochlorite (NaOCl) for one minute and then again washed it with distilled water. After washing allow it for drying. After drying then on the basis of symptoms plant material cut into a small part of infected area and inoculate it on PDA medium and incubated for 26°C. After 4-5 days mycelial growth was observed in petriplates. The developed fungal colonies were purified by hyphal tip and single spore isolation was done. Identification and the fungal isolation were carried out by using the morphological characteristic of mycelia and spore. Fungi were identified on the basis of colony character, mycelium structure and spore morphology as per (2) and Demataceous hyphomycetes (4).

## **RESULTS AND DISCUSSION**

The various types of plant pathogenic fungi have ability to infect a onion and cause a diseases. During the present investigation we are able to isolate a fungi specimens like *Alternaria porri*, *Rhizoctonia spp*, *Fusarium spp* and *Aspergillus niger* which causes a tremendous loss of onion crop. The diseases like purple blotch, damping off, basal rot and black mould all are initially identified on the basis of characteristic symptoms of diseases. The fungus were isolated from infected onion leaves and bulbs. For isolation of fungi we are visited a different location of Parner tehsil like Nighoj, Supa, Vasunde, Jamgoan, Panoli etc. During frequently visit we found that purple blotch and black mould of onion are predominately appear in all locations where as damping off and basal rot are less as compared to purple blotch and black mould.

The fungus *Aspergillus niger* and *Alternaria porri* occurred higher in all the location like Supa, Jamgoan, Panoli, Vasunde, Nighoj etc whereas, *Rhizoctonia* spp. and *Fusarium* spp are dominantly found in Nighoj and Panoli areas while less in Supa, Jamgoan and Vasunde. *Alternaria porri*, *Rhizoctonia* are isolated from leaves whereas *Aspergillus niger* and *Fusarium* spp isolated from onion bulbs (Table-1). Similarly, from infected onion bulb *F. oxysporum*, *Sclerotium rolfsii* and *Botrytis allii* were also isolated and reported by (9). It is also reported phytopathogenic fungi namely *Alternaria porri*, *Fusarium oxysporium* and *Stemphylium vesicarium* were isolated from the soil as well as from the infected onion leaves(6). (12) reported that *Apergillus niger* and *Penicillium* sp. were isolated from the bulbs alone. Many other researchers also reported a fungus like *Fusarium* sp., *Rhizopus* sp. and *Aspergillus* sp were isolated from market onion samples (11), purple blotch caused by *Alternaria porri* (1 and 10).

**Table : 1. Isolation of fungal pathogen of onion from different localities of Parner tehsil.**

Sr. No	Name of disease	Causal Organism	Localities				
			Supa	Jamgoan	Vasunde	Panoli	Nighoj
1	Purple Blotch	<i>Alternaria porri</i>	+++	+++	+++	+++	+++
2	Basal Rot	<i>Fusarium spp</i>	++	+++	-	+++	+++
3	Damping off	<i>Rhizoctonia spp</i>	+	++	+++	+++	+++
4	Black mould	<i>Aspergillus niger</i>	+++	+++	+++	+++	+++

(+++)= High, (++) = Moderate, (+) = (Less), (-) = Absent

## CONCLUSION

Present study shows that, plant diseases of onion like purple blotch and black mould of onion are common and were found throughout all locations while damping off and basal rot were restricted to specific locations. It is necessary to reduce a inoculum of pathogen by applying various bio control agents so that farmer could save their economy.

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Purple Blotch



Pure culture



*Alternaria porri*



Black Mould



Pure culture



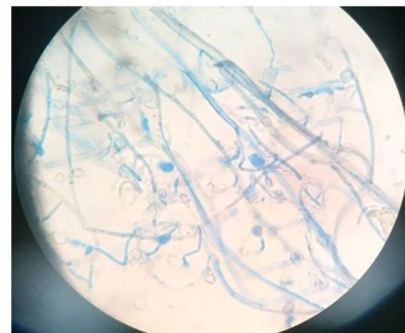
*Aspergillus niger*



Damping Off



Pure Culture



*Rhizoctonia*



Basal Rot



Pure Culture



*Fusarium Spp*

Isolation and identification of onion diseases