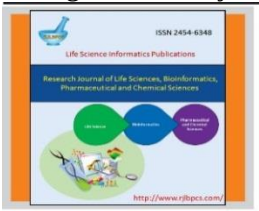

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OCCURENCE OF MYCOFLORA ON ONION (*ALLIUM CEPA* L.) BULBS

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ABSTRACT: For present investigation onion (*Allium cepa* L.) red and white varieties were selected to study occurence of mycoflora in fields and storage conditions, because onion bulbs are highly damaged due to number of fungal pathogens in field as well as in storage condition. For isolation of fungi dilution plate and humid chamber methods were applied. Total twelve fungal species were isolated from onion bulbs. *Botrytis cinerea, Rhizoctonia solani, Cladosporium alli, Botrytis allii, Sclerotium rolfsii, Colletotrichum circinans* and *Urocystis cepulae* showed high frequency occurence on the bulbs from fields where as fungi like *Aspergillus niger, Aspergillus flavus, Curvularia lunata, Fusarium oxysporum* and *Rhizophus stolonifer* were showed high frequency occurance on bulbs from storage condition. *Colletotrichum circinans* and *Sclerotium rolfsii* were not found on red variety of onion.

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1.INTRODUCTION

Onion (*Allium cepa* L.) is very important bulb crop cultivated in irrigated conditions all over India. The crop is affected by various fungal pathogens causes yield loss both in field as well as storage conditions. Due to rough handling , wrong agricultural practices and poor storage bulbs are infected by number of fungal pathogens.The present investigation deals with identification of mycoflora associated with onion bulbs from field as well as storage.

2. MATERIALS AND METHODS

For the isolation of fungi form onion bulbs the frequent visits were made in various regions of Sangli city to collect the onion bulb samples. Onion bulbs showing abnormal characters like rotten smell, discoloration and blakish pustules were collected in presterilized polythene bags and brought to the laboratory. Preliminary study were done by taking transvers sections from

infected region of bulbs and observed under microscope. For isolation of mycoflora dilution plate and and humid chamber method were followed (Waksman ,1922). The collected onion bulbs were soaked in sterilized distilled water, from that 1 ml sample was spread on presterilized petriplate and on that 3-4 ml layer of Potato dextrose agar medium were made. Both the mixtures were shaked and maintained uniform layer before solidifies agar. Plates were amended with pinch of Streptomycin to inhibit the growth of bacteria. Plates were incubated at room temperature for 9 days. The fungal colonies were isolated and subcultured on PDA slants. The isolated colonies were identified by using standard mannuals of mycological literature (Ellis,1960), (Ellis,1963), (Ellis,1976), (Subramanian,1971). As like that the collected onion bulbs were placed in humid chamber in where humidity were already maintained. The chamber was kept at room temperature for 9 days and the mycelial growth on onion bulbs were isolated and observed under microscope.

3. RESULTS AND DISCUSSION

Table1- Occurrence of mycoflora on onion bulbs

Sr. no	Fungi	% frequency of fungi In field		% frequency of fungi In storage	
		Red	White	Red	White
1	*Botrytis cinerea*	75	81	40	55
2	*Rhizoctonia solani*	68	71	55	60
3	*Cladosporium alli*	57	63	40	45
4	*Botrytis allii*	61	64	35	45
5	*Sclerotium rolfsii*	---	30	---	15
6	*Colletotrichum circinans*	---	20	---	10
7	*Urocystis cepulae*	70	80	65	75
8	*Aspergillus niger*	70	75	90	95
9	*Aspergillus flavus*	60	65	70	75
10	*Curvularia lunata*	35	45	50	65
11	*Fusarium oxysporum*	40	50	60	65
12	*Rhizophus stolonifer*	50	55	65	70

Table 1 depicts that there is significant variation among onion bulb mycoflora in storage as well as field conditions from red and white varieties. *Botrytis cinerea, Rhizoctonia solani, Cladosporium alli, Botrytis allii, Sclerotium rolfsii, Colletotrichum circinans* and *Urocystis cepulae* showed high frequency occurence on the bulbs from fields where as fungi like *Aspergillus niger, Aspergillus flavus, Curvularia lunata, Fusarium oxysporum and Rhizophus stolonifer* were showed high frequency occurance on bulbs from storage condition. *Colletotrichum circinans* and *Sclerotium rolfsii* were not found on red variety of onion. It is also observed that fungi like *Aspergillus niger, Aspergillus flavus, Rhizopus stolonifer* showed

their growth more on bulbs of storage condition as compared to field it indicated their saprophytic nature.Incidence of *curvularia lunata* and *Aspergillus niger* also reported by Rai *et.al.*(1976) and Auchet *et.al.*(1980). Fungi like *Botryris alli* and *Fusarium oxysporum* occured in storage condition also reported by Leguizamon *et.al.*(1976) which correlate with the present study.

4. CONCLUSION

Present investigation were carried out to check occurence of mycoflora on red and white varieties of onion bulbs from field and storage condition. 12 different fungal species were isolated from this study. Among that *Aspergillus niger* showed high percentage of incidence in storage condition. According to Auchet *et.al.*(1980) *Aspergillus* niger can be transferred from rhizosphere to storage condition. It is also concluded that percentage of mycoflora is higher always on white onion variety as compared to red variety. *Colletotrichum circinans* and *Sclerotium rolfsii* were not found on red variety of onion so white variety is more susceptible.

REFERENCES

1. Auchet Jenckens F., Castellanos Lin. Ares J.,(1980) A method of experimental evaluation of Alternaria porii on garlic, *Ciencias de la Agricultura*, 7 , 147-151.
2. Ellis, M.B., 1960. *Dematiaceous hypomycetes*, I. Mycol. Pap., 76:1 – 36.
3. Ellis, M.B., 1963, *Dematiaceous hyphomycetes*, V, Mycol. Pap, 93: 1-33.
4. Ellis, M.B., 1976. *Dematiaceous hyphomycetes*, CMI. pp-5.
5. Leuizamon C.J. and Barriga O.R., (1976) Garlic diseases in candinamarca and Boyaca, *Noticias fitopathologicas*, 5(1),4-19
6. Rai B. And Agarwal K.P., (1976) Rhizosphere microflora of garlic in relation to pre treatment of roots. *Acta botanica indica*, 4 (2),97-104.
7. Subramanian, C.V., 1971. *Hypomycetes* ICAR, New Delhi, India.
8. Waksman S., (1922) *J. Bact* 7,339-341.