

**SUMMARY
AND
CONCLUSION**

Satara is situated at the foothills of Sahyadri ranges of western ghats . It is rich in plant diversity. It has a particular topography and climate. It lies between North latitude 17°31' and East latitude 74°3'. In the Satara city, horticultural fruits like Apple, Sour lime, Mandarin Orange, Sweet Orange, Banana and Vegetable fruits like Pea Pod, Cluster bean, Lablab, French bean, Chilli, Tomato, Brinjal, Okra, Coconut are easily available in the markets. Therefore, these fruits were selected for present investigation.

The fruit samples with abnormalities like discoloration and having bad smell were collected from storage and markets of Satara To study the mycoflora associated with horticultural and vegetable fruit, humid chamber and agar plate methods were employed.

On the apple fruit, five genera with 13 species were observed. From these, 3 genera with 7 species and 4 genera with 6 species were isolated by humid chamber and agar plate method respectively. *Alternaria brassicicola*, *Drechslera australiensis*, *P. brefeldianum*, *P. chrysogenum*, *P. expansum*, *P. janthinellum*, these are six number of pathogens were specific to apple fruit.

Six genera with 22 species were recorded on sour lime fruit. Five genera with 12 species and 2 genera with 8 species were isolated by humid chamber, agar plate method respectively. Two species of *Aspergillus* were common on both methods. Ten number of pathogens were *Aspergillus alliaceus*, *A. chevalieri*, *A. fumigatus*, *A. parasiticus*, *A. ustus*, *Trichothecium roseum*, *Fusarium oxysporum*, *Penicillium camemberti*, *P. lilacinum*, *Septonema bombayense* specific to sour lime fruit.

Three genera with 10 species were detected on mandarin orange fruit. From these, three genera with 6 species and only 4 species of *Aspergillus* were isolated by humid chamber, agar plate method respectively. Pathgens like *Penicillium corylophilum*, *P. crustosumi* were occur only on mandarian orange.

On the sweet orange fruit, ten genera with 38 species were observed. Seven genera with 16 species and 5 genera with 16 species were isolated by humid chamber, agar plate method. Three genera with 6 species were found on both methods. Twenty two pathogens specific to sweet orange fruit were, *Actinomucor spp.*, *Alternaria pluriseptata*, *A. nidulans*, *A. phoenicis*, *A. quercinus*, *A. sydowi*, *Cladosporium elatum*, *C. gallicola*, *C. nigrellum*, *C. uredinicola*, *Fusarium avenaccum*, *F. rosae*, *Mucor albo-*

alter, *M. javanicus*, *M. luteus*, *Penicillim javanicum*, *P. minio-luteum*, *P. rubrum*, *Rhizopus arrhizas*, *R. artocarp*, *R. nigricans*, *Torula herbarum*.

Comparative account of mycoflora associated with citrus fruits shows twelve fungal genera with 55 species were isolated. Pathogens like *A. amstelodami*, *A. awamori*, *A. niger* were the common species of citrus fruits.

Seven genera with 14 species were recorded on banana fruit. From these, six genera with 10 species and two different genera with were recorded by humid chamber, agar plate method respectively. Pathogens which *Alternaria palandui*, *A. repens*, *Fusarium dimerum*, *F. monoliforme*, *F. roseum*, *Mastigosporium album* were specific to banana fruit.

Comparative account of mycoflora associated with horticultural fruits by humid chamber method shows thirteen genera with 50 species. *Aspergillus niger* is the common species of all horticultural fruits. Maximum number (18) of pathogen were detected on sweet orange. However, minimum number (4) of pathogen were found on apple and mandarin orange respectively.

Comparative account of mycoflora associated with horticultural fruits by agar plate method shows seven genera with 33 species. *Aspergillus fonsecaeus* is the common species except sweet orange fruit. Maximum number of pathogens viz, five genera with 15 species were found on sweet orange fruit and only one pathogen occurs on banana fruit.

Fourteen genera with 67 species were detected in the comparative study of mycoflora associated with horticultural fruits. *Aspergillus niger* was the common species of horticultural fruits.

Four genera with 10 species were found on the pea pod. Three genera with 7 species and 2 genera with 3 species were occur on humid chamber, agar plate method respectively. *Alternaria ricini*, *Fusarium oxysporum* Schl. ex Fries f. *pis*, *Fusarium semitectum* were recorded only on pea.

Three genera with 10 species were found on cluster bean pods. Only two different fungi occur on humid chamber and three genera with 8 species were recorded on agar plate method. There was not record of common pathogen on both methods. Pathogens

like *Alternaria chlamydospora*, *A. japonicus* *Fusarium moniliforme* were specific to cluster bean pods.

Eight genera with 29 species were obtained from lablab pods. On the humid chamber, six genera with 8 species and three genera with 19 species on agar plate method were recorded. Two different fungi occur commonly on both methods. Pathogens which *Alternaria brassicicola*, *A. humicola*, *Aspergillus insecticola*, *A. lutescens*, *A. sclerotiorum*, *Curvularia trifoli*, *Trichothecium roseum*, *Pyricularia ebbelsii* were found only on lablab fruit.

Five genera with 09 species were isolated on french bean pods. Three genera with 4 species and three genera with 5 species were recorded on humid chamber, agar plate method respectively. There were no common pathogen recorded on both methods. *Fusarium incarnatum*, *F. udum* were specific to french bean pods.

On the chilli fruit, seven genera with 14 species were recorded. Out of these, four genera with 5 species and six genera with 9 species were isolated by humid chamber, agar plate method respectively. There was not record of common pathogen on both methods. Pathogens like *Alternaria tenuis*, *Aspergillus carbonarius* *A. pulverulentus*, *Fusarium chlamydosporum* observed only on chilli fruit.

Thirteen genera with 30 species were found on tomato fruit. Eleven genera with 20 species and only two genera with 8 species were isolated by humid chamber, agar plate method respectively. On both methods, two different fungi were occur. *Actinomucor spp.*, *Alternaria solani*, *Aspergillus parasiticus*, *A. violaceo-fuscus*, *Corynespora casiicola*, *Cladosporium variabile*, *Fusarium equiseti*, *F. merismoides*, *F. roseum*, *M. spp.* *Penicillium minio-luteum*, *Rhizopus arrhizus*, *Scolecobasidiella avellanea*, these were the pathogens which specific to tomato fruit.

On the brinjal fruit, six genera with 18 species were recorded. Four genera with 7 species and three and 11 species were found on humid chamber, agar plate method respectively. There was not record of common pathogen on both methods. *Aspergillus candidus*, *Cladosporium fulvum*, *Rhizopus stolonifer* recorded only on brinjal fruit.

Ten genera with 14 species were found on okra fruit. Out of these, seven genera with 7 species and four genera with 6 species were found on humid chamber, agar plate method respectively. There was only one pathogen which recorded on both methods.

Pathogens which specific to okra fruits were, *Botrytis cinerea*, *Fusarium scirpi*, *Mucor mucedo*, *M. racemosus*, *Penicillium corylophilum*, *Staphylotrichum cocosporum* .

On the coconut fruit, eight fungal genera with 13 species were isolated. Out of these, 8 genera with 11 species were isolated by humid chamber method. Two species of *Aspergillus* were common on both the methods. There was no records of pathogens which observed only on agar plate method. *Aspergillus phoenicis* *Dendrophlopsis spp.*, *Fusarium spp.*, *Mucor hiemalis*, *M. rouxianus*, *Penicillium variabile*, *Septinema bombayense*, these were the pathogens found only on coconut fruit.

Twenty genera with 60 species were isolated on comparative account of mycoflora associated with vegetable fruits by humid chamber method. Maximum number (13) of pathogens were found on tomato fruit and only one pathogen was detected on cluster bean fruit.

Comparative account of mycoflora associated with vegetable fruits by agar plate method shows seven genera with 43 species were recorded. *Aspergillus awamori* and *A. fonsecaeus* were the common species of many vegetable fruits.

Twenty genera with 89 species were detected in the comparative study of mycoflora associated with vegetable fruits. *A. fonsecaeus*, *A. chevalieri* were the pathogens which observed on most of the fruits. Maximum number of pathogens were observed on tomato fruit, while minimum pathogen were found on french bean fruit.

Twenty three genera with 115 species were recorded in the comparative study of mycoflora associated with horticultural and vegetable fruits. *Aspergillus awamori*, *A. fonsecaeus*, *A. niger* were the pathogens which present on many fruits. Majority of the pathogens (13) were specific to sweet orange fruit and very less number (1) of pathogen found only on cluster bean pods.

The market value of the fruits and vegetables depends upon the health of fruits and vegetables. This good health is spoiled by lots of pathogens which causes diseases on market fruits and vegetables. Because of the association of such pathogens, market value of fruits and vegetables is decreased.

Satara climate is warm and cool. This type of climate is favorable for the growth of the pathogen. Because of these reason, fruit and vegetables of Satara market susceptible to diseases than the other regions. In the present study, various pathogens

which causing diseases to market fruits were investigated. The present information will helpful in control of such diseases by various methods like maintenance of temperature in storage places, proper sanitation, sterile conditions, use of sterile containers during transit and storage.