

# Survey of Post-Harvest Fungal Diseases of Some Fruits from Marathwada Regions of Maharashtra, India

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<b>Keywords</b> Grapes Mango Anola Post-harvest Fungal diseases	<b>Abstract</b> Present paper deals with the survey of post-harvest fungal diseases of tropical fruits like mango, grapes and anola in the year 2009-2010. <i>Penicillium</i> rot; <i>Aspergillus niger</i> rot, <i>Rhizopus</i> rot, <i>Phomopsis</i> rot were common diseases of mango, anola and grapes.
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## 1. Introduction

Post-harvest fungal diseases of fruits represent one of the most severe causes of loss of production. Fruits are vital part of human diet. During the past three decades, researchers on fruit fungal diseases management had made considerable progress (Gadgile *et al.* 2010). However, in every year tremendous loss in yield is caused due to fungal diseases in the field as well as due to storage fungal diseases. Post-harvest diseases of fruits are most severe causes of loss of production (Harvey, 1978; Coursey, 1983). A post-harvest fungal disease are responsible for biodeterioration of tropical fruits pulp (Tandon, 1977; Lal *et al.* 1985; Gadgile and Chavan 2009 a, Gadgile and Chavan 2009 b, Gadgile and Chavan 2009 c, Gadgile and Chavan 2009 d, Gadgile and Chavan 2009 e, Gadgile *et al.* 2009). Hence, tacking into consideration of severity of post-harvest diseases of fruits, present investigation was undertaken to survey type study of the fungal diseases of some tropical fruits like mango, musambi, grapes and custard apple.

## 2. Material and Methods

In the year of 2009-2010 infected fruits of mango, grapes and anola were collected from different fruits market of Marathwada regions Maharashtra state. Small pieces, measuring 2 mm<sup>2</sup>

each of infected tissue, were peeled off from these fruits with the help of sterile sharp knife. The pieces were separately inoculated to sterilize petri-dishes containing potato dextrose agar (PDA) medium and incubated at 25°C for 10 days. The isolated fungi were purified using single spore technique and then kept in a refrigerator on PDA medium (Gams *et al.* 1998). Pure colonies of fungal isolates were identified according to Ellis (1971). Symptoms were confirmed by Koch's postulates.

## 3. Results and Discussion

Mango fruits were commonly infected by fungal diseases like Anthracnose, *Alternaria* rot, *Aspergillus niger* rot, Blue mould rot, *Botryodiplodia* rot, *Rhizopus* rot and *Phomopsis* rot (Table1). It is clear from table 2 that *Penicillium* rot; *Aspergillus niger* rot, *Rhizopus* rot, *Phomopsis* rot and *Cladosporium* rot were common fungal diseases of anola. Anthracnose, *Aspergillus niger* rot, *Penicillium* rot, *Botryodiplodia* rot, *Rhizopus* rot and *Phomopsis* rot were severe post harvest diseases of grapes (Table 3). *Penicillium* rot; *Aspergillus niger* rot, *Rhizopus* rot, *Phomopsis* rot were common diseases of mango, anola and grapes. Arya, 1993, Sharma and Alam, 1998 reported more or less results about post-harvest diseases of mango, anola and grapes.

Table 1 Post- harvest fungal diseases of mango

Fungal diseases	Causal organisms	Symptoms
Anthracnose	<i>Colletotrichum gloeosporioides</i>	Light brown, water soaked lesions on the fruits. Circular dark-brown specks enlarge and coalesce to form larger spots and the lesions extend to the pulp. Salmon or dark coloured dot-like Acervuli may appear at later stages.
<i>Alternaria</i> rot	<i>Alternaria alternata</i>	Brown to dark brown circular lesions on the fruits. Lesions extend to pulp at later stages.
<i>Aspergillus niger</i> rot	<i>Aspergillus niger</i>	Water soaked light-brown circular spots, later enlarges into darker lesion with sunken centre
Blue mould rot	<i>Penicillium sp.</i>	Watery spots, later spots changes into bluish green due to production of large number of spores
<i>Botryodiplodia</i> rot	<i>Botryodiplodia theobromae</i>	Black irregular lesions later become dark brown color, water-soaked spot enlarges rapidly and the lesion extends to pulp.
<i>Rhizopus</i> rot	<i>Rhizopus stolonifer</i> , <i>Rhizopus nigricans</i>	Water soaked lesions, soft decay and water in nature.
<i>Phomopsis</i> rot	<i>Phomopsis sp.</i>	Brown to black spots

Table 2 Post- harvest fungal diseases of anola

Fungal diseases	Causal organisms	Symptoms
<i>Aspergillus niger</i> rot	<i>Aspergillus niger</i>	Light brown spot
<i>Penicillium</i> rot	<i>Penicillium sp.</i>	Brown colored depressed spot which develops blue colored growth of fungus.
<i>Rhizopus</i> rot	<i>Rhizopus stolonifer</i> , <i>Rhizopus nigricans</i>	Water soaked lesions, soft decay and water in nature.
<i>Phomopsis</i> rot	<i>Phomopsis sp.</i>	Brown to black spots
<i>Cladosporium</i> rot	<i>Cladosporium</i> Spp.	Dark brown necrotic lesions

Table 3 Post -harvest fungal diseases of grapes

Fungal diseases	Causal organisms	Symptoms
Anthraxnose	<i>Colletotrichum gloeosporioides</i>	Light brown, water soaked lesions on the fruits.
<i>Aspergillus niger</i> rot	<i>Aspergillus niger</i>	Water soaked light spots which ultimately cover the whole fruit.
<i>Penicillium</i> rot	<i>Penicillium</i> sp.	Watery spots, later spots changes into bluish green due to production of large number of spores
<i>Botryodiplodia</i> rot	<i>Botryodiplodia theobromae</i>	Black irregular lesions later become dark brown color
<i>Rhizopus</i> rot	<i>Rhizopus stolonifer</i> , <i>Rhizopus nigricans</i>	Water soaked lesions, soft decay and water in nature.
<i>Phomopsis</i> rot	<i>Phomopsis</i> sp.	Brown to black spots that may expand to oval shaped lesions

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