

A REVIEW

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Post-harvest fungal diseases of guava: A brief review

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SUMMARY :

This review deals in detail about the post -harvest fungal diseases of guava fruits. Guava fruit is highly perishable so it suffers from a number of fungal diseases. Fungal diseases spoils guava fruits. Post-harvest fungi deteriorate the biochemical composition of fruit. Environmental factors viz., temperature and relative humidity affects the growth of post-harvest fungi. Several biological treatments has been tried for control the post-harvest fungi.

KEY WORDS : Guava, Post-harvest fungi, Fruit canker, Anthracnose, Fruit rot

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Guava (*Psidium guajava* L.) is the most important and amongst choicest of the tropical fruits (Ghosh, 1998). Guava fruit is affected by fungi, bacteria and other microbes causing different types of post-harvest disease. Over 30 to 35 per cent loss of fruits are caused by post-harvest fungi in transit and storage. *Rhizopus stolonifer*, *Pestalotia psidii*, *Alternaria* sp., *Penicillium expansum*, *Colletotrichum gloesporioides*, *Aspergillus niger* are post-harvest fungi associated with guava (Shrivastava and Lal, 2009). Post-harvest fungal diseases of fruits are mainly responsible for loss of fruit production. Post-harvest fungal diseases of guava are mainly caused due to field, transport and storage injuries. The most important pathogen responsible for post -harvest diseases of guava are fungi which attack fruits and spoil fruit during transit, storage and final transportation to the market (Shrivastava and Lal, 2009). Post-harvest fungal diseases of fruits are mainly responsible for economic loss by reducing quality and marketability of damaged fruit. Fruits

contain high levels of biochemicals and their low pH values make them particularly favorable to fungal rotten (Singh and Sharma, 2007).

Information on post-harvest fungal diseases of guava fruits is not available in combined form which could be helpful to the researches as a prepared references. A review on the post-harvest fungal diseases of guava is discussed in this communication.

Post-harvest fungal diseases of guava fruits :

Fruit canker :

Fruit canker is very common post-harvest diseases of guava (Mathew, 2010 and Rao *et al.*, 2012). Initially symptoms appear as rust coloured necrotic spots on fruits. In advance stage of infection, lesion increases and extends to the pulp (Arya, 1993 and Aulakh, 1998). *Pestalotia psidii* is major post-harvest fungi next to *Rhizopus stolonifer* (Shrivastava and Lal, 2009). Arya (1993) reported there is no diseases development at 10°C.

Maximum disease development occurred at 25°C-35°C and high humidity (Arya, 1993). Treatment of carbendazim and benomyl inhibited radial growth of *Pestalotia psidii* (Rao *et al.*, 2012).

Anthracnose :

Causal organism of the disease is *Colletotrichum psidii*. Anthracnose is important pre-harvest and post-harvest disease in guava (Lakshmi *et al.*, 2011). Chowdhury *et al.* (2014) reported that the disease development of anthracnose of guava were the maximal in the month of August followed by July and June. However, Dasgupta and Mandal (1989) observed that the disease causes maximum damage February-March and September- October. Disease significantly deteriorated biochemical composition of guava fruits (Amusa *et al.*, 2005).

Black mould rot :

This disease is caused by *Aspergillus niger*. The disease is characterized by the development of brown spots on fruit surface. *A. niger* is most pathogenic fungi of guava. Next to *Pestalotia psidii*, *A. niger* is important post-harvest fungi associated with guava (Rao *et al.*, 2012). The rot has been reported by several workers (Shrivastava and Lal, 2009, Mathew, 2010, Amadi *et al.*, 2014 and Salau *et al.*, 2015).

Rhizopus fruit rot:

Rhizopus fruit rot is caused by *Rhizopus stolonifer*. Symptoms appear as water soaked lesions on fruits (Ooka, 1980). It is common post-harvest fungal disease of guava in fruit markets of Allahabad (Shrivastava and Lal, 2009). *Rhizopus* rot caused due to problems during storage and transits (Adisa, 1985). Post-harvest treatment of calcium chloride and lemon grass fumigation retarded development of *Rhizopus* rot (Omayma, 2010).

Alternaria rot :

The disease is caused by *Alternaria alternata*. *A. alternata* associated with guava, secreted *in vitro* significant amounts of mycotoxins like alternariol, tenuazonic acid, altenuene and alternariol monomethyl ether (Ammar and El-Naggar, 2014). The rot has been reported by several workers (Shrivastava and Lal, 2009; Naureen *et al.*, 2009; Ammar and El-Naggar, 2014; Salau *et al.*, 2015 and Zahra, 2016).

Conclusion:

Post-harvest fungi are responsible for major loss of guava fruits. Fungi contamination may be due to injuries occurring during fruits handling, harvesting, washing, sorting, transporting and storing. Therefore, efforts should be made during fruit handling, harvesting transporting and storing to minimize injuries. New post-harvest management methods should be applied to increase the shelflife of guava.

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