

A Review on Studies of Post-harvest Fungicides Diseases of Some Fruits

Rinki Singh¹ and Pramila Tripathi²

¹*Research Scholar, Dept. of Botany, Mewar University, Chittorgarh, Rajasthan.*

²*Dept. of Botany D.A.V. PG College Kanpur.*

Abstract

We are familiar with a number of tests and methods for the fungal disease and their treatment for to control it. We can divide them into two categories on broad scale. One is Physical Treatment and other is Chemical Treatment. The methods which fall in first category are based on the heat and temperature methodology which includes therapy and low temperature management along with radiation too. For the second categories we believe on some chemical methods this type of treatment includes some chemical agent like antibiotics, some vapor agents and oils. But now the interest has been shifted towards Biopesticides which has been considered as a modern way with an applied name Biological control. The reason behind of it is its ecology benefits and belonging to various and different groups of plant and microbes along with successful control of plant pathogens.

Keywords: Eco-friendly management, fruits, fungal diseases, post-harvest.

1. Introduction

Heat treatment is one of the famous and adopted conventional methods in with the fruits. Hot water method like heat, vapor, hot dry air or mixture of these methods has been extensively used to prevent the damages to the fruits and vegetables from post harvest fungal damages. A special reason for the heat treatment is that there was no requirement of chemicals. *Jacobi et al. (2007)* observation suggests that Kensington Mangoes were more resistant to disease after the treatment of Hot air and quality were also higher. If we conclude the study of *Jacobi and Wong (1992)* and *Jacobi and*

Giles(1997) then we find that 53° hot water for 5 min, vapor at 47° for 15-20 min were a successful treatment. Tsai(1969) has find that Hot water treatment at 49 ° C for 20 minutes [3] and washing of fruits with water immediately after harvesting minimize the losses in papaya.

Low pressure treatment is suitable for the tropical and subtropical fruits and vegetables. This method requires some preparation. The work of *Chau and Alvarej* (1983) suggested that If we kept papaya fruits vaccinated with *Colletotrichum, gloeosporioides* and keep them at a low pressure (15 mm of Hg, 100C, 21 d) then papaya can be kept for 5 days more compared to the normal pressure. Control of disease caused by *Stemphyllum lycopersiciis* can be achieved by hot water treatment, heat or chemical fungicides. However, in case of papaya heat treatment leads to enhanced senescence, while chemical treatments can damage the quality of papaya.

By lowering the temperature we can also preserve the fruits longer compared to normal temperature. This is the most common method to prevent disease from fruits. *Tandon and Mishra* (1969) findings suggest that storage of papaya fruits at 10 ° C is suitable for controlling disease caused by *Rhizopus stolonifer*.

One of the most recent method is use of vegetable oils in plant disease control is a comparatively recent development in the sector of plant pathology. These vegetables oils can be used in three way— as a spreaders strikers, as carriers for conventional fungicidal chemicals, and as direct agents for preventing diseases. To control the pathogenic bacteria and fungi Garlic extract which contains *allicin* (antibiotic in nature) can be used.

Sumbali and Mehrotra (1980b) have reported the benefits of different garlic concentrations for controlling *Aspergillus niger*, *Gliocladium roseum* and *Sclerotium rolfsii* rots of Apple, peach and pear fruits.

So if we make a reference tables for the ideal climate which was founds during the studies then we realize the importance of these methods.

Table 1: Conclusion of Review.

Plants/Fruits	Ideal climate/method
Storage fruits	Low temperature and oil
Tropical's fruits	Heat water methods
Vegetables	Low temperature/oil/heat method

2. Conclusion

Table-1 suggests that different study on Biological control (conventional methods) is alternative method to the chemical method for control of post-harvest diseases of fruits.

References

- [1] Tsai, W.H. 1969. Studies on ecology and physiology of papaya anthracnose and its control. *J. Taiwan Agric. Res.* 18: 51- 57.
- [2] Coursey, D. S. and Booth, R.H. 1972. The post-harvest Phytopathology of perishable tropical produce. *Review of Plant Pathology.*24: 383-409.
- [3] Pathak, V. N., Sharma, H. C. and Bhatnagar, L. G. 1972. Third International Symposium. Subtropic and Tropic. Horticulture, Bangalore. 118-119.
- [4] Couey, H.M. and Hayes, C.F. 1986. Quarantine procedure for Hawaiian papaya using fruit selection and stage hot water immersion. *J. Econ. Entomol.* 79: 1307-1314.
- [5] Armstrong, J.W., Hansen, J. D., Hu, B. K. S. and Brown, S. A.1989. High temperature, forced-air quarantine treatment for papayas infested with Tephritid fruit flies. *J. Econ. Entomol.* 82:1667-1674.
- [6] Couey, H.M. 1989. Heat treatment for control of post-harvest diseases and insect pests of fruits. *Hort. Science* 24: 198-202.
- [7] Zee, F.T., Nishima, M.S., Chan, H.T., Jr. and Nishijima, K.A.1989. Blossom end defects and fruit fly infestation in papayas following hot water quarantine treatment. *Hort. Science.* 24:323-325.
- [8] Alvarez, A. M. and Nishijima, W.T. 1987. Post-harvest diseases of papaya. *Plant Dis.* 71: 681-686.
- [9] Paull, R. E., Nishijima, W. Reyes, M. And Cavallito, C. 1997. Post-harvest handling and losses during marketing of papaya (*Carica papaya* L.). *Post-harvest Biol. Technol.* 11: 165-179.
- [10] Chau, K.F. and Alvarez, A.M. 1979. A historical study of anthracnose on *Carica papaya*. *hytopathology.* 75: 1113-1116.
- [11] Couey, H.M. and Farias, C.F. 1979. Control of post-harvest decay of papaya. *Hort. Science* 14: 719-721.
- [12] Couey, Alvarez, A. M. and Nelson, M. G. 1984. Comparison of hot water spray and immersion treatments for control of postharvest decay of papaya. *Plant Dis.* 68: 436-437.

