



## Pre-Harvest Factors Affecting Post-Harvest Quality of Northern Baluchistan Fruits

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### Abstract

Parameters associated towards pre harvest encompass significantly manipulation scheduled post-harvest fruit value. It consists of a few indispensable issues and their combinations akin to environmental, genetics and cultural practices. Through stressing these situations, we tackle to local regional producer and grower that how they impinge on the quality and hence temperate fruits quantity. In the midst of the technology help and good practices including all factors can be maintained and proscribed effortlessly. The infected fruits during field and handling practices showed their symptoms appearance. These factors are coupled with the host, microorganism and favorable environment resultant pathogen growth and as well as quality deterioration.

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### Introduction

Pre harvest attributes concern fruits quality. Pre harvest parameters e.g. cultural practices, genetic issues and environmental factors have major persuade on fruit growth, development stages and fruit quality till maturity. Orchard management and field sanitation are cultural practices that pedal the infections, disorders and pest harm. Indulging the efforts and consequence of pre harvest issues going on postharvest quality inspire growers and transporters for successfully fruit products management.

Primary production improvements can minimize the great economic loss due to pathogens attack during handling and storage. Handling and storage economic losses of matured fruits should be prevented

considering pre and post harvested problems and diseases (Majumdar and Pathak, 1991). As a result, there is a gigantic consequence and necessitate to alert and gather awareness regarding sound effects of pre harvest factors, environmental and pathogens involved, conditions and post-harvest stages of temperate fruits. In this review paper we speak to the growers as well as producers about the preventive measures against the economical losses on the fruit quality of northern Baluchistan (local and export quality of fruits) through the harmful effects of pre harvest factors on the post-harvest.

### Influence of Pre-Harvest Factors

#### Radiation

Disparity in the radiation intervention caused modifications/alterations happen in the concerto and competence of nutrition and antioxidants of fruits in numerous ways in the field. Lee and Kader (2000) investigated that elevation of Vit. C and phenolics are created in fruits sides exposed directly to sun as compared to shade sides.

#### Temperature

All fruit crops are exceedingly perceptive to temperature fluctuations; cold temperature disturbs the pollination and finally fruit settings. Apple and grapes contain low acid and high sugar content due to high temperature (Wurr et al., 1996). Apricot, apples and cherries fruits at maturity appeared burning and cracking in high temperatures (Kumar and Kumar, 2007). High temperature affects olive fruit green color turning into tannin and defect the flavor development. It also causes the decay in post-harvest maturation. Storage temperature influenced the infection spreads and resistant to any post-harvest disease and obviously it's the most known factor (China, 2007).

#### Rainfall

Humidity enhances fruit sensitivity during handling and storage. Fruits become highly sensitive to high moistures. It noticed during prolonged

period of rain events on fruits. It leads the skin cracking disorders in cherries (Sekse, 1995) and fruit growth problems for commercial product in apples (Opara et al., 1997). High humidity causes disease development in all fruits under favorable temperature (Parker and Sutton, 1993). In order to minimize the moisture loss and preventing them from tissue turgidity loss and shriveling, harvested fruits require 95% relative humidity in storage places (China, 2007).

#### Harvesting Season and Time

Harvesting time is very influential for ripen fruits (climacteric and Non climacteric). Climacteric fruits produce large quantities of ethylene so it should be picked at maturity stage (e.g apple, peach and pear). Non climacteric fruits produce small quantities of ethylene so they are very responsive to ethylene treatments (e.g cherry, grapes, strawberry and pomegranate). It would be picked at ripe stage.

#### Pre-Harvest Infection

Post-harvest infection of vegetable and fruit may occur through openings of product and mechanical damage and peel penetration at different avenues. Various types of fungi are able to enter and initiate the infection on floral parts surface and fruit which are in development process. The infection remains there and closed in them till harvest, when suitable conditions are provided by us to them in terms of miscarriage when tissue become softer and fruit begins to ripe then pathogen starting to flourish (Barkai, 2005). These infections play a key role factor in the wastage of temperate fruits like apple, apricot and pear in storage. Parasitic bacteria and fungi are easily entering in immature fruits through stomata openings, also from growth cracks and lenticels (which cause fruit rotting during storage near apple lenticels). In some research, fruits and vegetables can delay the growth of these organisms for a particular time period (Barkai, 2001).

#### Plant Growth Regulators

PGRs can provide economic advantage to growers through enhancing growth and development of fruits. Fruit setting in pear and apple improved with Gibberellins application (Gill et al., 2012). They too, increase the fruit firmness and size of peaches and cherries (Lurie, 2010). Cytokinin application cause cell elongation and division rapidly in grapes and apple (Emongor et al., 2001; Yu et al., 2001)

#### Irrigation

Irrigation stress caused high injury in temperate fruits and rise in soil temperature lead them to fruit cracking (Kumar and Kumar, 2007). In peaches we observe shortage of proper irrigation result in higher fruit density and lowers the weight per fruit during harvesting and storage (Crisosto et al., 1995).

#### Organic Materials

Intensive fertilizers without organic manures cause acidic the soil and decrease fruits quality. Mulch and saw increase cation exchange capacity and the number of earthworms. They also play a good role in quality of fruit crops. Sawdust lowers the disorders in apple fruit and boost K and Ca concentrations in tree leaves (Lang et al., 2001).

#### Pre-Harvest Chemical Treatment

The post-harvest diseases can be prevented before harvest in orchards. Chemical spray is not a good that cause health disturbance. Application of broad-spectrum fungicides is the solution to protect the fruits and plant itself by preventing them from spore germination or at any stage of fungus (Singh and Thakur, 2003).

#### Resistance Approach

Development of resistant varieties against native pathogens is the most efficient method. Biotechnologist and plant breeders of regional areas do their expertise for the development of resistant varieties of fruit crops (Narayananamy, 2006).

#### Future Perspective

Our future plans are focused on actual diagnosis in postharvest pathogens and diseases for resistant crop studies with application of specific compounds which are directly injected on sprayed over on foliage and fruit skins making it resistant to postharvest pathogens through biotechnological apparatus and identified more genes that produce resistant fruits with impressive quality attributes.

#### Conclusion

Climate change and cultural practices are pre harvest factors which directly or indirectly affect the fruit quality hence its production as well as use of hi-tech horticulture management through natural and available resources with good policies and strategies forward us towards postharvest quality of temperate fruit crops.

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