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## How can Post Harvest Diseases Impact Crops and National Food Security

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In the agricultural process, losses are seen not only on field but also after the harvest. These losses are majorly due to microbial infections during storage, transportation and marketing. In India, perishable commodities form a major part of agriculture and therefore post-harvest diseases are a serious challenge to national food security. Post harvest diseases are caused by fungi and bacteria that infect crops after they are harvested. These infections often remain latent and develop in the field but become visible during ripening or storage. Fungal pathogens such as *Botrytis*, *Penicillium* and *Rhizopus* are the most common causal agents of rots and molds. Bacteria like *Erwinia* species cause soft, watery decay. These microorganisms survive in warm, humid conditions and rapidly spread if produce is damaged or improperly stored.

### A silent threat to food and economy

Post harvest diseases impact both the farmers and the consumers by leading to economic losses and increased market prices. Some fungi produce toxic compounds known as mycotoxins which leads to health risks. The most concerning thing about these diseases are that they are not visible in early stages and thus the infected produce enters storage and supply chain without being noticed.

### Case Study: Mango Anthracnose

The most important example of post-harvest diseases is Anthracnose in mango which is caused by *Colletotrichum gloeosporioides*. This disease begins in field infecting immature fruits and remains dormant. After harvesting when fruit ripens sunken lesions starts to appear on the surface leading to rotting. In humid and warm conditions, severe impact of disease is seen making fruit unsuitable for sale or export.

In India, mango anthracnose is a major cause of post-harvest losses. It effects the export quality of the produce. Management practices like pre- harvest fungicide sprays, hot water treatment and improved storage conditions have shown effectiveness yet challenges remain due to inconsistent adoption.

Post-harvest diseases represent a silent yet significant loss in agriculture. While much emphasis is placed on increasing crop production, equal attention must be given to preserving what is already grown. By adopting scientific handling, storage, and disease management practices, it is possible to drastically reduce these losses.