

Summary of Discussions Preharvest and Postharvest Losses

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The lead paper by H. R. Shuyler, R. H. Gonzalez, W. I. Moller, J. Faure and E. Reusse entitled "Pre- and Postharvest Losses of Tropical Roots and Tubers and Their Reduction" was presented by H. A. Al-Jibouri.¹ The prepared abstract was:

"Pre- and postharvest loss of tropical root and tuber crops is reviewed. Causes of loss in the preharvest period include numerous diseases and insect pests. In general, losses are not considered to be as severe as for other tropical crops although investigation of the problem, comparatively, has not been extensive. Losses due to weeds are poorly known. Current loss control approaches emphasize cultural practices and plant breeding in particular.

"In addition to diseases and insects, postharvest losses are related to processing and marketing, where physiological deterioration frequently occurs. Reduction of postharvest loss centres currently around cultural practices. Chemical controls are not widely used in pre- or postharvest loss reduction.

"Conclusions concerning necessary action to further reduce pre- and post-harvest losses in the next 5–10 years include the need for wider use of improved cultural practices. Emphasis first on cassava losses is recommended, then on sweet potatoes, and yams. Priority in reduction loss work should be for the subsistence grower. These suggestions lead to a need for extensive training to strengthen extension activities.

"Cultural practices recommended for the preharvest period include crop rotation and improved mass selection for propagation. Integrated pest management should be possible in some cases with biological control as an important component. Plant breeding research is a continuing need. Further reduction of postharvest losses requires wider use of the best cultural practices in storage; improvements in processing and marketing should also be attainable. Storage and processing losses can be further reduced through applied research."

A synthesis of the discussion follows:

Thurston discussed the importance of plant diseases as limiting factors in food production. The following summary covers the major considerations:

More than 160 bacteria, 250 viruses, and 8000 fungi are known to cause plant disease in addition to mycoplasma-like organisms and viroids which have recently been added to the list. Some include nematodes as disease-producing agents. There are many classic cases of catastrophic plant diseases in history which have wiped out entire crops, often resulting in widespread famine and human disease. Examples are the late blight epidemic of the 1840s in Ireland, coffee rust which last century wiped out coffee in Ceylon, and in 1970 was introduced into Brazil where it has caused great economic loss. As recently as 1942 an epidemic due to brown leaf spot caused the failure of the rice crop in West Bengal and an estimated 2 million people died. Many other examples can be cited, but fortunately the great majority of plant diseases are not catastrophic. Estimates of losses due to plant disease vary widely and much of the information is simply not believed by administrators, the public, and politicians. Most figures found for losses in tropical (developing) countries are double those found for the temperate countries of North America and Europe.

¹The complete text of this paper is available on request from the Cassava Information Centre, CIAT, Cali, Colombia.