

## Fungicide Spraying Is Critical for Increasing Potato Production in Africa

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Potato has become an important staple and cash crop in the highlands of sub-Saharan Africa. Because of its relatively short growing season (3-4 months), two potato crops are possible in a year compared to one crop of maize at these altitudes [1]. About 75% of the crop is directly consumed on the farm with the rest being sold at markets or for processing [2]. An increase in potato production has occurred due to an expansion of the number of acres planted. Potato yields have not increased significantly. Further potato production increase through area expansion would mean encroachment on the limited remaining highland forests. The most feasible manner in which the growing demand for potatoes can be met is through increased productivity [3].



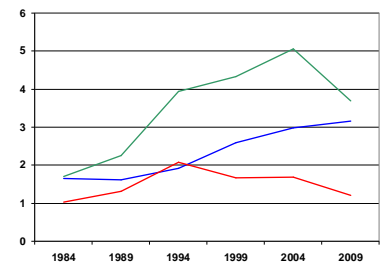
Kenyan Highlands

Potato yields are low predominately because of late blight disease [5]. Yield losses due to the disease are attributed to both premature death of foliage and diseased tubers. Late blight was first reported in East Africa in 1941 and rapidly progressed over the potato-growing areas of Kenya and Uganda. Initially, control by spraying fungicides was not considered feasible for small growers and the importation of blight-resistant hybrids began [4]. However, the planting of resistant varieties has been ineffective as a control procedure because of the rapid appearance of new pathogen strains [6]. Farmers still grow potato varieties that are very susceptible to late blight because these varieties have a good taste and are preferred by consumers [1]. With good management practices, but without fungicide sprays, yield losses due to late blight in Africa have been estimated at 40-70% [6].



Potato late blight experiment in Cameroon: fungicide treated at left, untreated at right

To more effectively manage late blight, farmers have increasingly adopted fungicide application. Surveys show that 93-100% of the farmers in regions of Kenya spray fungicides for late blight [1]. However, most farmers achieve poor control of late blight with fungicides due to poor application techniques [1]. The most commonly-used fungicide, mancozeb, is effective when applied before the onset of the disease. However, most farmers apply fungicides after seeing symptoms [1]. Most farmers use lower than recommended application rates. A recent study in Uganda determined that the current farmer practice (6 sprays beginning 30 days after crop emergence) increased potato yields by 12% over the unsprayed check while a weekly scheduled spray program (6 sprays) produced a yield increase of 224% [7]. Potato yields are low in sub-Saharan Africa (6-10t/ha) in comparison to research plots (20-30 t/ha). Enhancing farmers' knowledge about late blight and the importance of following fungicide recommendations could improve disease control and thus increase yields [1].



Kenyan Potato Indices, 5 Yr Avg, 1980 = 1.0: Production (Green); Area Harvested (Blue); Yield (Red)

### References

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