B-19: The occurrence of a potyvirus in sweet potato (Ipomoea *batatas* L.)

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Plants of sweet potato (*Ipomoea batatas* L.) grown in a field at Gannoruwa showed virus-like symptoms such as chlorotic spots and ringspots with purplish brown pigmented borders on older leaves.

Sweet potato is affected by a number of virus diseases worldwide. The majority of the diseases reported are caused by the viruses belonging to the potyvirus group. Virus diseases are commonly spread through germplasm introduced for crop improvement programmes and with cuttings distributed for propagation. Early detection of a virus in suspect plants can help in preventing its dissemination. An attempt was made to study possible viral causes for the conditions observed.

Plants of sweet potato of the cultivars 426/23, P 2/16, W 39 and W 42 from a field at Gannoruwa, showing virus-like symptoms to varying degrees, provided the sources from which virus transmissions were attempted.

Virus transmission. For sap transmission, inoculum was prepared by grinding leaves with symptoms in 0.07M phosphate buffer, pH 7.2; this was rubbed onto leaves of a range of test species including *Chenopodium quinoa, Chenopodium amaranticolor* and *Nicotiana benthamiana,* shaded for 24 h prior to inoculation. For graft transmission, chip grafts and side grafts were done to the indicator *Ipomoea setosa* and also to the original host. The *in vitro* properties were determined using sap from infected *Nicotiana benthamiana*. All experimental plants were held under observation in an insect-proofed greenhouse. *Field surveys*. These were done primarily to detect symptoms suggestive of virus infection.

In inoculation tests with a narrow range of indicators, *Chenopodium quinoa and Chenopodium amaranticolor* reacted with local lesions.and *Nicotiana benthamiana* developed a systemic mottle.

In grafting experiments *Ipomoea setosa* developed a systemic veinal chlorosis and chlorotic spots. *Ipomoea batatas* developed chlorotic spots and ringspots.

Sap from systemically infected *Nicotiana benthamiana* was still infective after dilution to 10^{-3} but not 10^{-4}, after heating for 10 min at 60°C but not at 65°C. Infectivity was retained for 12h only.

The results of the subsequent serological tests including immunosorbent electron microscopy at Horticulture Research International, UK, revealed that the isolate belongs to potyvirus group and it has been tentatively identified as sweet potato feathery mottle virus (SPFMV).

Virus infection in plots of sweet potato at Gannoruwa has been established and the virus tentatively identified as sweet potato feathery mottle virus.

The risk of this virus spreading with propagation material should be recognised. The need for the provision of virus-free planting stock is evident. This could be achieved though suitably formulated programmes with inspection of source plants regularly and their testing to ensure freedom from virus infection and propagating only from healthy sources.