

A B S T R A C T

The growth, development and yield of yam plants (Dioscorea spp.) were studied following the extension of tuber dormancy with gibberellic acid. Four experiments were conducted during 1983-84.

Setts from GA₃ treated tubers of the cultivars White Murapoi and Off-White Murapoi emerged over a long period of time and gave poor emergence. The cultivar Oriental emerged significantly earlier than White Lisbon, White Murapoi and Off-White Murapoi. The extent of the extension of dormancy following GA₃ treatment of tubers varied for the different cultivars. Pre-harvest foliar application of GA₃, at high concentration and early application times reduced the percentage germination of Chinese yam (D. esculenta). Apical dominance was maintained irrespective of GA₃ treatment.

GA₃ treatment (post-harvest and pre-harvest application) reduced leaf number and leaf area development in both species. The reduction in leaf number and leaf area development was greater for high concentration and early application times and resulted in significantly lower final tuber yields. For White Lisbon yams, GA₃ treatment of tuber reduced stem number and tuber number. The duration of tuber bulking was reduced and the various growth phases appeared to be compressed. GA₃ treatment, generally did not affect the dormancy of second generation tubers.