ABSTRACT

In both species shoot growth occurred in flushes; in avocado mostly from terminal buds whereas in mango via both the apical and subapical buds. In bearing avocado plants as many as six and in bearing mango plants five shoot growth flushes occurred during a year whereas in young plants shoot growth was less intermittent.

Cambial growth in both species was continuous throughout the year. In avocado the rate of cambial growth was greater in the wet than in the dry season but in mango it was the reverse.

In both species root growth occurred in flushes. Avocado developed a much-branched root system and roots grew more in spread than in depth. Mango roots did not branch as much and they grew more in depth than in spread. Mango roots had root hairs but avocado roots did not.

In both species the main shoot and root growth period was the wet season. In avocado a strong association was observed between shoot growth, root growth and rainfall but in mango the association was not very strong.

Avocado plants grew better in River Estate loam and Sangre Grande silty clay than in Piarco and Arena fine sands. Mango did well in all three soils — Piarco fine sand, Arena fine sand and River Estate loam.

The water table was a limiting factor for root growth in both avocado and mango. The presence of a stony layer in the soil decreased shoot and root growth in avocado but not in mango.

Mulching in both species increased shoot and root growth. It also limited weed growth, improved soil physical properties, conserved soil moisture and reduced daily variation of soil temperatures. Irrigation during the dry season increased shoot and root growth in avocado but the effect of irrigation in mango was not as pronounced.