

## Effects of Deficit Watering and Potassium Fertigation on Growth and Yield Response of Cassava

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**Abstract :** Cassava (*Manihot esculenta* Crantz) is a major food crop for millions of people in the tropics. Growth and yield of cassava in the arid-tropics are seriously constrained by intermittent water deficit and low soil K content. Therefore, experiments were conducted to investigate the effects of interaction between water deficit and K fertigation on growth and yield response of biofortified cassava at early growth phase. Yellow cassava cultivar was grown under controlled glasshouse conditions in 5-L pots containing 1.7 kg of pre-fertilized potting mix. Plants were watered daily for 30 days after planting. Treatments were three watering levels (30%, severe water deficit; 60%, mild water deficit; 100%, well-watered), on which K (0.01, 1, 4, 16 and 32 mM) was split. Plants were harvested at 90 days after planting. Leaf area was smallest in plants grown with 30% watering and 0.01 mM K, and largest in plants grown with 100% watering and 32 mM K. Leaf, root, and total dry mass decreased in water-stressed plants. However, dry mass was markedly higher when plants were grown with 16 mM K under all watering levels in comparison to other K concentrations. The highest leaf, root and total dry mass were in plants with 100% watering and 16 mM K. In conclusion, K improved the growth of plants under water deficit and thus, K application on soils with low moisture and low K may improve the productivity of cassava.

**Keywords :** dry mass, interaction, leaf area, *Manihot esculenta*

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