☐**P4-06**

Poster Session 4: Horticultural practices / P4-06

Green manures in mango 'Kent' orchard

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Abstract

Intensive exploration of soil on Brazilian semi-arid conditions, with mango in irrigated systems, has caused soil degradation and consequently reduced the quality and sustainability of agribusiness in the region. Soil in this region is characterized mostly by sandy texture, organic matter content and water retention low, which is still compromised by climate conditions, high temperatures and insolation, causing serious constraints to agricultural productivity. The present work aimed at studying cropping systems, used as green manure cover, in the orchard establishment of mango 'Kent' by mass quantifying and mineral composition of plant material, resulting from pruning training. Leguminous green manure had some species: *Calopogonium mucunoide*, *Crotalaria juncea*, *Crotalaria spectabilis*, *Canavalia ensiformes*, *Cajanus cajan* L., *Dolichos lablab* L., *Mucuna aterrina*, *Mucuna conchinchinensis*. Non leguminous green manure consisted by species as: *Sesamum indium L., Chysantemum peruviamum, Ricinus communis* L., *Penissetum americanum* L., *Sorghum vulgare* Pers. Evaluations used three plants per plot with four replications. Green mass resulting from the four training pruning showed that green manure with 75% of leguminous and 25% of non leguminous species increased vigor of the plants in 16.6%, 19.7%, 45.1% and 23.9%, compared to treatment with spontaneous vegetation, respectively. There was no significant difference between treatments in the levels of nitrogen, phosphorus, potassium, calcium and magnesium present in leaves and branches in each of training pruning. Green manure could be reduce orchard establishment time until the beginning of floral induction and production of mango 'Kent'.

Keywords: pruning, orchard establishment, irrigation, organic matter.