

Considerations on growth characteristics of different pineapple varieties in Ivory Coast, Reunion Island and Caribbean Islands

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Growth measurements were conducted first in Ivory Coast with 'Smooth Cayenne', 'MD2' and 'Flhoran41' and more recently in Reunion Island and Martinique with 'Queen Victoria' to characterize the behaviour of the different varieties.

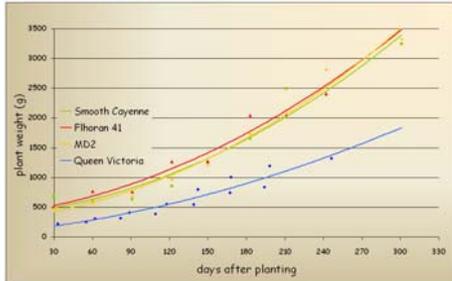


Fig 1. Plant weight for 4 cultivars (from suckers)

Plant weight increase
The increase of pineapple plant weight is similar for 'SC', 'MD2' and 'Flhoran 41', but is smaller for the 'Queen Victoria' (Fig.1).



The experimental field in Ivory Coast

'D' leaves growth

The growth of 'D' leaves shows the classical sigmoid pattern for all the varieties (Fig. 2).

Seven months after planting, 'MD2' and 'Smooth Cayenne' D leaves reach the same weight (80 g); at the same time, 'Flhoran 41' D leaf weight is under 75 g for the same plant weight (2 kg) and 'Queen' D leaf weight is only 50 g, for a plant weight of 1 kg. Clearly 'Flhoran 41' has more leaves but smaller than either 'Smooth Cayenne' or 'MD2' (Fig. 3).

Finally, we confirmed that the classical correlation between D leaf weight and plant weight holds for these new cultivars.

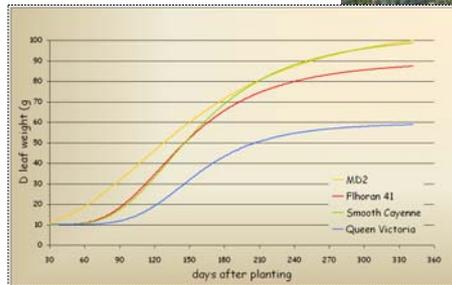


Fig 2. 'D' leaf weight for 4 cultivars

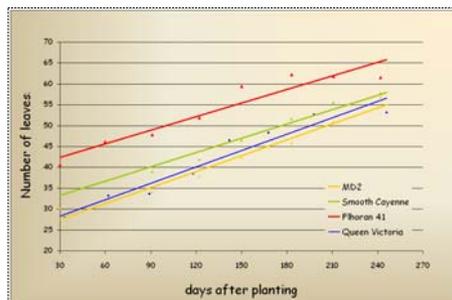


Fig 3. Leaf numbers for 4 cultivars grown from suckers

Growth model

A tentative growth model based on sum of temperature is proposed: the relation between the weight increase and sum of temperatures is linear (Fig. 5). New experiments are conducted with 'Flhoran 41' and 'Queen Victoria' in Reunion Island where there is a great climatic diversity. This model may be useful for predicting the date of forcing under standard growth conditions.

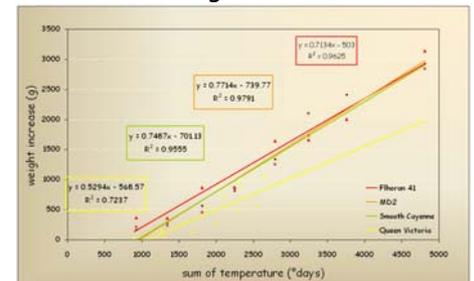


Fig 5. Vegetative growth (4 cultivars) versus sum of temperatures

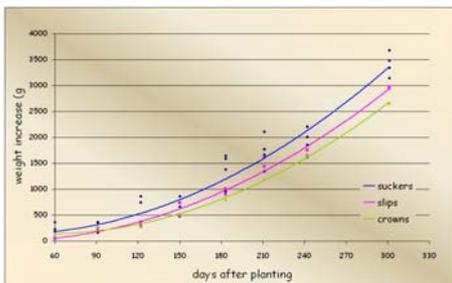


Fig 4. Effect of the type of planting material on the growth of 'Flhoran 41'

Planting material

A confirmation, if needed: whatever the variety is, aerial suckers have faster growth than slips and the last ones have a faster growth than fruit crowns (Fig. 4)

Conclusion: The data for D leaf growth for the 4 varieties provide a good example of how careful growers must be with new varieties. D leaf weight is often used as an indicator of forcing time in pineapple, but it should be used with care. To get the same exportable fruits (1.5kg), in 'Flhoran 41', a D leaf weight of 70g is sufficient, whereas 80g is the standard for 'MD2' and 'Smooth Cayenne'. 'Queen' needs a 'D' leaf weight of 50 g for a plant weight of 1.0 kg giving an average fruit weight of 700 g (standard weight for air freighted fruit in Reunion Island).



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