

Maintenance and Evaluation of Avocado Cultivars and Selections

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ABSTRACT

As a testing site for avocado cultivars and selections, an orchard on Duke 7 rootstock was established in 1994. In 1996, 15 different avocado cultivars were topworked, and the orchard extended to make provision for the inclusion be picked in 1998.

INTRODUCTION

The aim of this long-term project is to consolidate and test avocado cultivars and selections in the major South African avocado production area. In the past, cultivar orchards existed on various rootstocks, such as Edranol seedling and G6 rootstocks. Currently, Duke 7 is the industry's standard rootstock and therefore an orchard on Duke 7 has been established.

THE EXPERIMENTAL ORCHARD

An orchard (0.8 ha), consisting of Hass trees on Duke 7 rootstock planted at a spacing of 7 x 7m, was established in October 1994. The orchard was extended by another 0.8 ha in December 1996 to provide for the inclusion of future new cultivars. For the first 6 months after planting the trees were irrigated by bucket, then micro-irrigation was installed. A cover crop is established in summer (velvet beans, sunhemp).

In 1996, different avocado cultivars were topworked *in situ* onto trees planted in 1994. Problems were experienced initially when topworking the newly established clonal trees. Hass was grafted for comparison to each batch of different cultivars and this combination is the standard to which each cultivar will be compared. As the emphasis of this project is on maintaining cultivars, two trees per cultivar were topworked. For further tests, promising cultivars and selections will have to be transferred to another orchard in which e.g. 20 trees of a specific cultivar can be evaluated for yield and fruit quality. On some topworked trees, the first crop is due in 1998.

CULTIVARS TOPWORKED

The SAAGA cultivar evaluation committee chose 15 cultivars to be evaluated. In table 1 they are grouped into early, mid and late season cultivars. Early cultivars ripen at the time of Ettinger and Fuerte, mid season cultivars ripen at the time of Hass, and late season cultivars ripen at the time of Ryan. Most cultivars are listed in the late season

category as there is some interest in prolonging the avocado season for the South African market. The cultivars Collinson, Itzamna and Linda grown at Westfalia Estate in the 1930's and later abandoned when the avocado industry became export orientated (W.E. Maddison, personal communication), were re-introduced.

SUMMARY

The orchard has been successfully established. All cultivars requested by the SAAGA cultivar evaluation committee have been topworked and a first small crop is expected in 1998. This is a long-term project which continues.

Table 1. Cultivars topworked in the experimental orchard for maintenance and evaluation of avocado cultivars and selections

Season	Cultivar	Origin ¹	Skin Colour	Comments
Early	Shepard	California	green	yellow pulp, commercial in Australia
	Regal	California	black	high incidence of grey pulp
Mid	Duivelskloof	South Africa	green	very large fruit, good flavour
	HX204	California	green	rough skin, watery taste
	T142	California	black	large fruit, tree slightly spreading
	1.14.2	South Africa	black	very vigorous tree, shy producer
	Iriet	Israel	black	glossy, slightly pebbly peel, good flavour
	Gil (11-19)	Israel	black	skin cracking
Late	Ardith (0028)	California	green	thin skin, small seed, excellent taste, vigorous tree
	5-552	California	green	Reed type
	Collinson	Florida	green	large fruit, very good flavour
	Itzamna	Guatemala	green	medium fruit, thick corky skin
	Linda	Guatemala	dark red	very large fruit, good flavour
	Murietta Green	California	green	large fruit
	Lamb Hass (Bl.122)	California	black	good yields alternating

¹Adapted from Whiley *et al* (1990), Martin (1993), Lahav & Gazit (1994) and Smit (1995)

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