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## Organic Avocado Production

Stefan Köhne  
Merensky Technological Services,  
Westfalla, South Africa  
*stefank@hansmerensky.co.za*  
SOCIEDAD GARDIAZABAL Y MAGDAHL LTDA.



# ORGANIC AVOCADO PRODUCTION



**Dr Stefan Köhne**  
**Merensky Technological Services**  
**South Africa**



## INTRODUCTION



### Dr Hans Merensky:

- 1871 - 1952
- Geologist, prospector, scientist, nature conservationist, philanthropist



The Hans Merensky Foundation was founded in 1973

its aim...

*Is to promote and assist in the **development** of the resources of South Africa and neighbouring territories - particularly such **natural resources as soil, water, minerals, flora and fauna and welfare of the inhabitants**; more specifically by **research and demonstration** and through the correlation and **application of scientific knowledge.***



Biological production at Hans Merensky Holdings started in the early 1940's, when the founder, Dr Hans Merensky, laid down broad biological guidelines.



Dr Hans Merensky in one of the Westfalia avocado orchards in the early 1940's



- In the early 1990's, the principles of integrated production were laid down by Merensky Technological Services
- The first fully certified organic avocados from HM farms were produced in 1998
- Successful organic cultivation of avocados: site selection, use of superior rootstocks, well adapted scions and professional shipping and marketing





## ORGANIC AVOCADO PRODUCTION AT MERENSKY FARMS

- FARMS
- CERTIFICATION
- PRODUCTION



## FARMS

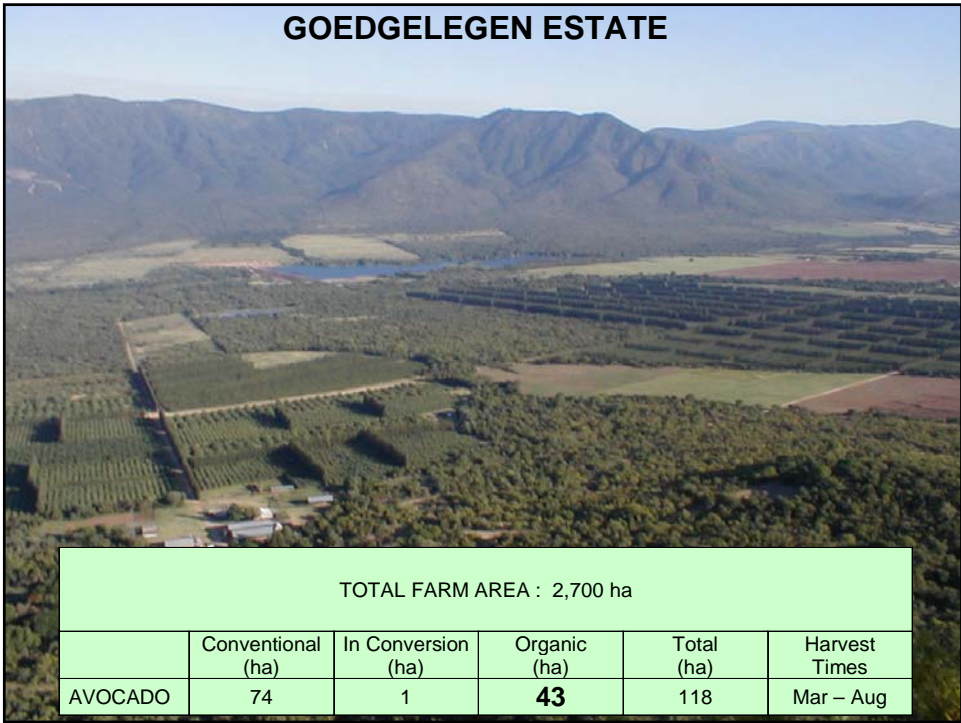
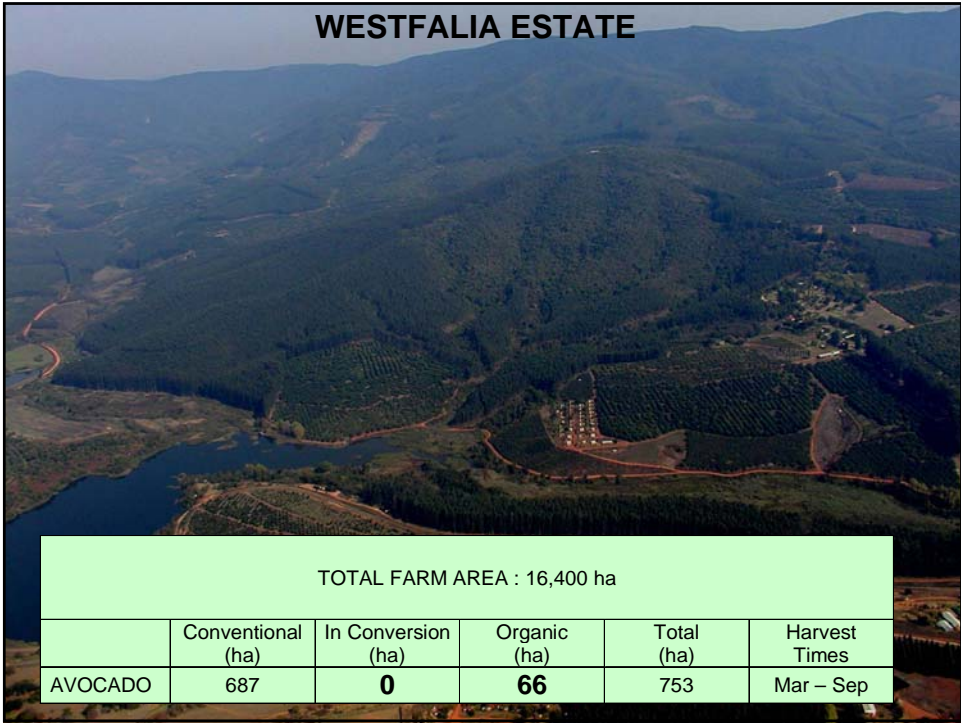
- Westfalia, Limpopo Province
- Goedgelegen, Limpopo Province
- Everdon, KwaZulu-Natal

- Total area under avocado orchards (2002/2003):

	Conventional (ha)	In Conversion (ha)	Organic (ha)	TOTAL (ha)
AVOCADO	761	<b>65</b>	<b>309</b>	1135

### AVOCADO CULTIVAR SPREAD

FUERTE	HASS	OTHERS
37%	48%	15%



## EVERDON ESTATE

TOTAL FARM AREA : 800 ha

	Conventional (ha)	In Conversion (ha)	Organic (ha)	Total (ha)	Harvest Times
AVOCADO	0	<b>64</b>	<b>200</b>	<b>264</b>	Early Jun – Nov



## CERTIFICATION

- Monitoring and affirmation of the fruit quality and production standards executed by several independent institutes

**EEC Reg 2092-91**

Monitoring of organically produced products

**Eurepgap**

**Nature's Choice**

Monitoring of conventionally produced products

**HACCP**

Monitoring of Processing Plant

**ISO 9002**

Monitoring of Pack Houses



## ORGANIC AVOCADO PRODUCTION

- New plantings
- Organic soil amendments
- Fertilisation
- Irrigation
- Disease and pest control
- Weed control
- Pruning
- Picking, Packing & Q.A.



## New Plantings

- Site selection
- Management of surface run off water
- Isolation to avoid e.g. spray drift
- Soil and land preparation before planting
- Choice of rootstock and cultivar
- Tree spacing





## Organic soil amendments

- Mulching
  - suppression of *Phytophthora cinnamomi*
  - conservation of soil moisture
  - regulating soil temperature
  - stimulating earthworm and micro-organism activity
  - mulching grass (specifically used at Everdon Estate)
  - pine bark applied twice a year combined with chicken manure



- Composting
  - combination of sawdust, avocado waste, cattle manure and effective micro-organisms
  - fungal dominant compost applied once a year







## Fertilisation

- According to leaf and soil analyses
  - Organic mixture is used to provide soil nutrition



## Irrigation

- Mainly in winter
- Soil moisture is measured by means of tensiometres
- Quantity of water supplied is critical
- Microjets used for effective water distribution





## Disease and Pest Control

- Diseases
  - Rootstock: Hass on Dusa™ performing best
  - Mounding, mulching and application of biological control agents (e.g. *Trichoderma harzianum*)
  - Low copper applications against fungal fruit disease
- Pests
  - Monitoring insect populations (scouting and trapping). Spraying when necessary with permissible products
  - Use of flowering cover crop to distract certain insect pests from young fruit



## Weed Control

- Done manually
- Use of cover crops - Rye Grass, Velvet Beans and Desmodium.
- Additional benefit is derived from the increased nitrogen level in soil





## Pruning

- Alternate sides pruned in alternate years (mechanically and manually)
- Twice a year:
  - Heavy pruning after harvest
  - Lighter, follow-up pruning in early summer.
- Improved light penetration
- Reduced fruit disease pressure



## Picking

- Moisture tests to monitor maturity
- Careful fruit handling during picking and transport to packhouse

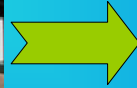




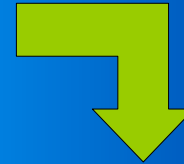
## Packhouse



Fruit delivered to packhouse



Sorted into 3 grades:  
Export, local & factory



Fruit palletized after which it is distributed to outlets



## Quality Assurance

- Supervisors
- Barcode systems to assist with traceability
- Fruit evaluation





**westfalia**

**We believe that Westfalia organic avocados are making a significant contribution towards Dr Hans Merensky's objectives.**