

Aspects of the economy of avocado production in South Africa

J C TOERIEN

Westfalia Estate, PO Box 14, Duivelskloof 0835

INTRODUCTION

The avocado export market determines the economy of the South African avocado producer. Until 1986 growers made good profits, but during the traumatic 1987 season, some farmers hardly broke even while others experienced losses. The 1988 season was a good one and profits were satisfactory.

There are many reasons for these fluctuating economic results. The main reasons are the erratic Israeli crops of the previous few seasons and competition from other exporting countries.

Factors beyond our control can indirectly influence our economy, but there are factors that can be controlled by the producer.

VALUE OF AVOCADOS IN R/TON

The value of the avocado depends on the quality and markets for which it is suitable.

Handling Costs

Different markets have different requirements for packaging, transport and handling. The costs are directly influenced by the requirements which in turn affect the economy.

Influence of quality on net value

The quality of the fruit determines the market for which the fruit is suitable. The 1987 export rate of 55 per cent is used as a norm (SAAGA Avo Census 1987).

Export of 78 per cent is seen as a more realistic export percentage. An export rate of 85 per cent however, is seen to be achievable.

Factors determining the value of the fruit are the following:

Percentage export.

Decisions on sea freight versus air freight.

Local grade versus under grade.

A good quality fruit can increase the nett income by R570/ton.

DEVELOPING NEW AVOCADO ORCHARDS

The cost of development will depend on the decision to farm intensively or extensively.

Discussion of production costs

It costs R6 268/year to produce one ha of avocados on an intensive basis.

Should the value of avocados be R1 475/ton, 4,25 ton/ha must be produced in order to break even.

The grower can control his direct production costs within limits, but it is clear that there is a considerable element of fixed costs.

In the event of the Rand appreciating against foreign currency, the profitability of avocado farming will be severely affected. It is also clear that extensive avocado farming will become completely unprofitable if the R/ton value is reduced.

PRODUCTION OF AVOCADOS TON/HA

According to the SAAGA census of 1987, the average avocado production in South Africa is 5,02 ton/ha, which is disappointingly low.

DISCUSSION

A higher management input must have a positive influence on the profitability of the industry.

If the present export quality of 55 per cent could be raised to 85 per cent, the nett profit will increase by R21 000 000. The question is: How much money must we spend on research? Much of the knowledge is already available and could be implemented by growers who are only exporting 55 per cent of their crops.

If the present avocado crop of 5 ton/ ha could be raised to 7,5 ton/ha, combined with the quality increase, an additional amount of R36 000 000 can be earned by the industry.

The ideal of reaching 15 ton/ha is possible and the income could then increase by more than R100 million annually.

Factors influencing production

Non-bearing young trees, Phytophthora and drought have an influence on the average production. The research breakthrough on Phytophthora has helped to increase production, although not to the expected level. There are other factors that have an influence on production as well.

Manageable factors according to present knowledge:

- Extensive or intensive farming methods.
- Soil preparation.

- Plant density, control of vegetative growth.
- Quality of trees.
- Budwood (quality and genetic/potential).
- Irrigation systems and tensiometer management.
- Fertilization amount/balance/timing of macro and micro elements.

Identification of single trees with good quality fruit and high productivity

Records of single trees show vast production differences of one ton versus 60 ton/ha equivalent.

The question is whether the cause is genetic. The answer will obviously be to produce copy trees.

Research on these trees is being done on the following:

- Nutritional status, scion/rootstock effect and balance of the elements.
- Analysis of the reserve status and effect of scion/rootstock.
- Growth vigour in relation to leaf/fruit balance.
- Fruit-set effect of pollen availability and quality.

SUMMARY

- 1 Fruit quality is of prime importance and sound fruit should achieve a premium of R570/ton over unexportable fruit.
- 2 Fruit quality is a contributing factor in the decision on transport systems. Sea freighted fruit returns a nett of R400/ton more than air freighted fruit.
- 3 At the present stage the income from locally marketed fruit is frustratingly low. The situation calls for greater emphasis on promotion on the local markets.
- 4 Production and management costs are high and a higher production is needed to ensure profitability. The present 5,02 ton/ha for the industry is too low.
- 5 A better quality fruit and a higher production/ha could increase the industry's profit by R36 million in the short term. To achieve this, existing knowledge should be implemented in practice.
- 6 In the longer term the nett industry profit could be increased by R100 million. To achieve this, management by the grower will have to improve and more research should be funded.

TABLE 1 Gross value of avocados on export and local markets

Markets	Export market		Local market	Under grade
	Sea freight	Air freight		
R/Ton	R3 136	R3 482	R 762	R 597

TABLE 2 Handling costs of avocados R/ton

	Export market		Local market	Under grade
	Sea freight	Air freight		
Picking	35	35	35	35
Packaging	38	38	38	12
Packing material	210	210	189	
Palletization	35	35	32	
Inland transport	208	90	98	
Sea/Air freight	552	1 417		
TOTAL	R1 121	R1 868	R473	R47

TABLE 3 Nett value R/ton on the tree

Sea freight	Air freight	Local market	Under grade
R2 015	R1 614	R289	R550

TABLE 4 Comparison of nett value in R/ton on the tree according to fruit quality

Fruit quality	@ R2 075 % By sea	@ R1 614 % By air	@ R289 % Local	@ R550 % Under grade	Average nett value R/ton on tree
55% Export	44	9	30	15	R1 233
78% Export	72	6	13	8	R1 475
85% Export	85	—	5	10	R1 805

TABLE 5 Costs to develop new avocado orchards

New avocado orchards	R/ha	
	Extensive	Intensive
Destumping and levelling	R 400	R 2 000
Fertilizing	R 216	R 2 620
Cultivation	R 120	R 200
Preparation of planting holes	R 88	R 352
Irrigation	R 900	R 4 200
Trees and tree establishment	R1 032	R 4 112
TOTAL	R2 756	R13 484

PRODUCTION COSTS

TABLE 6 Direct production costs

	R/ha
Management	509
Fertilization	396
Irrigation	726
Pruning/Growth modification	165
Pest control	908
Other	201
TOTAL	R3 731

(Production costs of R3 731 compares closely with R3 675 given in Combud 470, the budget done by the Directorate Agricultural Economics, 1988).

TABLE 7 Overhead costs

	R/ha
Administration and financing	1 298
Engineering services	776
Manpower/Training	463
TOTAL	R2 537

TABLE 8 Total production costs/ha

	R/ha
Direct production costs	3 731
Overhead costs	2 537
TOTAL	R6 268

TABLE 9 Production costs relative to age of tree

Year	R/ha	
	Extensive	Intensive
1	R 495	R2 075
2	R 495	R2 075
3	R 970	R2 420
4	R1 445	R2 765
5	R1 920	R3 110
6	R2 395	R3 455
7+	R2 870	R3 800

TABLE 10 Production ton/ha of avocado orchards 1-20 years

Year	Extensive (1)	Intensive (2)
1	0	0
2	0	0
3	0,8	2,9
4	1,6	7,1
5	4,0	11,3
6	6,0	15,4
7	7,5	19,6
8	8,8	19,6
9	9,6	19,6
10	11,0	19,6
11	10,4	19,6
12	8,0	19,6
13	6,3	19,6
14	3,5	19,6
15	0	19,6
16	0	19,6
17	0	19,6
18	0	19,6
19	0	19,6
20	0	19,6

(1) Based on publication of Dept of Agriculture, June 1981.

(2) Toerien, Meyer & Milne, 1984 - SAAGA Avocado Yearbook.

TABLE 11 Income potential of the industry (R value in orchard)

% Export	Industry income in millions Production ton/ha		
	5 ton	7,5 ton	15 ton
55%	R46 m	R 69 m	R138 m
78%	R55 m	R 82 m	R164 m
85%	R67 m	R101 m	R202 m