

EFFECT OF AVOCADO SUNBLOTCH DISEASE ON FRUIT YIELD

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OPSOMMING

Die totale opbrengs van vyf sonvlekbesmette Fuerte avokado borne was 27,3% laer as die oes van vyf gesonde borne in dieselfde boord by Baynesfield, Natal, 'n Groot gedeelte (52,7%) van die vrugte van besmette borne was ondergraad terwyl geen ondergraad vrugte deur die gesonde borne gedra is nie. Gebasseer op die Oktober 1982 pryse behaal op die Johannesburg mark, was die inkomste van besmette borne 40,1% laer teenoor die inkomste van gesonde borne. Die verskil in waarde van die vrugte vroeër in die seisoen, as pryse laag is, sou waarskyn/ik groter gewees het.

SUMMARY

The total yield of five sunblotch-infected Fuerte avocado trees was found to be 27,3% lower than that of five healthy trees in the same orchard at Baynesfield, Natal. A high proportion (52,7%) of the fruit from the diseased trees was undergrade, while no undergrade fruit was produced by the healthy trees. Based on the October 1982 prices on the Johannesburg market, the price fetched for the fruit from the diseased trees was 40,1% lower than that for the healthy. The difference for fruit picked earlier in the season, when prices are lower, is probably greater.

INTRODUCTION

It has long been assumed that avocado sunblotch disease causes financial losses to avocado growers. However, no studies to determine what economic losses could result from this disease have been undertaken. While there have been a couple of studies on the effect of sunblotch on fruit quality and size (Haas, 1938; da Graca and van Vuuren, 1977), only passing reference is made in the literature to yield. Wallace (1958) stated that infected trees are generally less productive than healthy, and Bergh (1974) commented that symptomless carriers appear to be poor bearers.

It was therefore decided to initiate a study to determine the actual losses attributable to sunblotch disease.

MATERIALS AND METHODS

Five 18-yr old healthy and five sunblotch-infected Fuerte trees in an orchard in the Baynesfield area of Natal were selected and their sunblotch status was checked by PAGE analysis (da Graca and Goodman, 1982). In October 1982 all the fruit from these 10 trees was harvested, graded into first, second and undergrade fruit and packed into trays for sale on the Johannesburg market. The count size and the numbers of trays for each grade were recorded.

RESULTS AND DISCUSSION

The total number of fruit from the diseased trees was 27,3% lower than that produced on the healthy trees (Table 1). The latter produced no undergrade fruit, whilst 52,7% of the fruit from the diseased trees was undergrade.

Table 1 also shows the average prices for avocados on the Johannesburg market on the day the fruit was picked, with the numbers of trays for each count and the prices which the fruit could have fetched. The total price for the fruit from the five diseased trees was 40,1% lower than that for the healthy fruit.

Prices on the market in October are higher than earlier in the season when Fuerte in the Transvaal are being harvested. Many of the undergrade fruit then would not be marketable and the loss due to sunblotch would, consequently, be even greater.

If the sunblotch-associated losses found here in one area with one cultivar for one season occur more widely, and there is no reason to suppose that they do not, the losses caused by sunblotch in South Africa could be very high. The trees used in this study will be evaluated again next season, and it would be very useful to obtain data from other parts of the country.

TABLE 1. The effect of avocado sunblotch disease on the yield of Fuerte avocados.

Grade	Count	Average price/tray	Healthy		Diseased	
			No. of trays (No. of fruit)	Value	No. of trays (No. of fruit)	Value
First	14	R6.00	6 (84)	R36.00	1 (14)	R6.00
	16	R4.75	15 (240)	R180.50	8 (128)	R95.00
	18		23 (414)		12 (216)	
	20	R3.75	28 (560)	R142.50	8 (160)	R45.00
	22		10 (220)		4 (88)	
	24	R2.75	13 (312)	R101.75	2 (48)	R19.25
	26		0		0	
	28		15 (420)		1 (28)	
	30		7 (210)		3 (90)	
	32	0	0	0	0	
34	2 (68)	1 (34)	0	0		
			119 (2460)	R460.75	40 (806)	R165.25
Second	14	R5.00	1 (14)	R5.00	0	
	16	R4.25	4 (64)	R55.25	1	R4.25
	18		9 (162)		0	
	20	R2.50	7 (140)	R25.00	9	R25.00
	22		3 (66)		1	
	24	R2.25	3 (72)	R20.25	0	R4.50
	26		0		0	
	28		0		0	
	30		3 (90)		0	
	32	0	0	0	0	
34	1 (34)	2	0	0		
36	1 (36)	0	0	0		
38	1 (38)	0	0	0		
			33 (716)	R105.50	13 (286)	R33.75
Undergrade	16	R2.75	0	0	2 (32)	R140.25
	18		0		4 (72)	
	20		0		8 (160)	
	22		0		18 (396)	
	24		0		4 (96)	
	26		0		0	
	28		0		2 (56)	
	30		0		9 (270)	
32	0	2 (64)				
34	0	0	0	0		
36	0	2 (72)	0	0		
			0		51 (1218)	140.25
Totals			152 (3176)	R566.25	103 (2310)	R339.25

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