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IDENTIFICATION AND MONITORING OF PRE-PACK CULL FACTORS OF AVOCADOS DURING THE 1984 SEASON

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OPSOMMING

Pakhuis-uitskotfaktore word jaarliks bepaal en vergelykings is getref met vorige seisoene. Klein vrugte het toegeneem, maar die ander uitskotfaktore het verminder.

SUMMARY

Packhouse cull factors were identified and comparisons made with those of previous seasons. Small fruit were more abundant than the previous year, but the other cullings were lower.

INTRODUCTION

The Packhouse cull factors of members' fruit of Letaba Co-Operative Ltd. are monitored annually in order to determine the level of incidence of these factors and to identify any new cull factors timeously. This information is therefore of direct benefit to the Letaba district growers and also serves as an important monitoring aid in identifying possible new problem development.

MATERIALS AND METHODS

One to two lug boxes of fruit which were found to be unmarketable **during grading** were examined per grower per day, in order to determine the cause for culling. Only the primary cull factor per fruit was taken into account. These fruit, after classification according to cull factor, were counted and recorded as a percentage of the total fruit examined for that grower. This information was then supplied to the grower involved for his records.

At the end of the season the average was calculated for all growers, for each cull factor and for each cultivar.

RESULTS

The results are expressed in Table 1 asan average valúe for each cull factor per cultivar for the season and are compared with those of 1982 and 1983. (Smith, 1984).

The incidence of anthracnose as a cull factor was recorded for the first time.

Damage caused by the Pine tree thrips *(Heliothrips)* haemorrhoidalis and red-banded thrips (Selenothrips rubrocincfus,) was monitored separately from general insect damage such as that caused by grasshoppers and loppers.

Hail damage became a cull factor for some growers although the total percentage was low for the season.

Culling decreased generally for almost all factors when compared to 1983. Substantial increases due to small fruit occurred for all cultivars however.

DISCUSSION AND CONCLUSIONS

Culling due to small fruit emerged as the most important factor during the 1984 season. The greatest increase for this culling factor, 26,6% occurred in Mass but was closely followed by Edranol with 24% and Fuerte, with 21,5%. In Ryan this factor increased by only 5,7%. This increase is most probably due to the prevailing drought as most orchards are on dry land. In Edranol, the condition could have been aggravated by heavy fruit set in this cultivar.

The high incidence of small fruit in Mass is a cause for concern as plantings of this cultivar is on the increase. It is hoped efforts to eliminate this problem in this cultivar will be made.

Sunburn decreased for all cultivars except Ryan, despite the prevalence of severe drought. It is expected that this cull factor should assume less importance with increasing rainfall and improvements in orchard conditions as control of *Phytophthora* root-rot becomes effective.

Some cull factors which are directly under the grower's control, viz. damage due to diseases and insects and fruit handling, showed decreases or low incidence. Fruit-fly damage was not a major cull factor during this season but can be further reduced as this pest can be controlled effectively. Similarly the incidence of *Cercospora,* which dropped to low levels probably because of greater grower awareness for the need for disease control sprays and the dry weather conditions, and sooty blotch *(Akaropeltopsis sp)* may be further reduced by effective fungicide applications.

Handling as a cull factor decreased for all cultivars in comparison with 1 983 but more attention could possibly be given to this aspect by the growers.

REFERENCES

SMITH JHE 1984. Indentifisering en Intensiteit van Uitskot faktore voor verpakking gedurende die 1983-seisoen. *S. A. Avocado Grower's Ass. Yrbk.* 7, p. 35.

TABLE 1. The average percentage for each cull factor for each variety for the 1984 season.

Cull Factor	Fuerte			Edranol			Ryan			Hass		
	1982	1983	1984	1982	1983	1984	1982	1983	1984	1982	1983	1984
Fruit Fly	13.4	6.3	5.4	6.5	5.3	2.2	4.7	2.5	5.4	5.0	3.7	1.0
Sunburn	11.1	23.7	19.7	9.8	14.3	8.8	6.9	6.9	7.4	5.4	14.7	10.0
Wind	7.4	3.0	2.4	4.0	2.0	2.0	2.0	3.0	.1.4	0.5	1.4	0.5
Cercospora	4.2	2.1	0.7	4.9	0.0	0.0	1.1	0.0	0.0	1.6	0.0	0.1
Handling	8.6	11.3	6.7	54.2	9.3	7.4	2.3	10.0	9.0	0.4	7.4	3.3
Sunblotch	0.3	0.4	0.2	0.8	0.0	0.0	0.0	0.8	8.0	0.0	0.2	0.1
Insect Damage	2.2	7.5	5.3	1.6	5.9	9.3	4.4	5.8	3.4	1.6	8.3	5.2
Orchard Marks	11.9	10.4	4.7	4.6	12.9	6.9	6.0	9.8	4.3	3.8	6.9	1.3
Sooty Blotch	3.5	0.1	2.3	0.6	0.2	0.1	0.7	2.0	0.6	0.0	0.1	0.1
Malformed Fruit	8.1	3.4	1.5	1.0	5.4	0.9	4.5	4.7	0.2	1.4	3.5	0.1
Small Fruit	23.4	26.2	47.7	8.5	34.3	58.3	62.0	52.6	58.3	72.8	50.1	76.7
Anthracnose	-	-	1.1	-	-	1.0	-	-	0.4	-	-	0.1
Thrips	-	-	0.3	-	-	0.2	-	-	0.2	-	-	0.1
Hail	-	-	2.0	-	-	2.9	-	-	1.2	-	-	1.3