

POST-HARVEST DISEASE CONTROL IN AVOCADOS USING PROCHLORAS

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Progress Report

INTRODUCTION

Prochloras 45% E.G. was tested as a dipping treatment on avocados to control post harvest diseases. End of season Fuertes picked on the 6th July were dipped in a solution containing 111g Prochloras 45% E.C./100f water for 3 minutes. Samples were then placed, without wrapping or waxing, into cardboard boxes and stored 5,5°C for 28 days before being assessed. 109 avocados were dipped and a similar number used as control.

On removal from cold storage firmometer readings were taken on all fruit. The fruit were then allowed to ripen and rated externally for anthracnose and stem end rot. The fruit were then cut open and 10 minutes later were analyzed for any internal disorders.

RESULTS

Results are summarized in Tables 1 and 2. Table 1 shows that there was no difference in firmometer readings between Prochloras dipped and untreated fruit after removal from Cold Storage. There was also no difference in the ripening times.

There was less stem end rot in Prochloras treated fruit (99,1% showing no symptoms) than in the control (89,9% without symptoms). As is generally the case with late season fruit there was less stem end rot than anthracnose complex which occurred at a high level. The Prochloras dip successfully reduced anthracnose from 92,7% (7,3% clean) in the controls to 57,8% (42,2% clean) 34,9% had severe anthracnose symptoms in the control compared to only 5,5% in the treated fruit.

An assessment of internal disorders showed that Prochloras reduced anthracnose and vascular bundle browning considerably compared to control (Table 2). A reduction in lead discolouration also occurred.

CONCLUSIONS

Avocado fruit dipped in Prochloras for 3 minutes showed less external symptoms of anthracnose complex and stem end rot and less internal symptoms of anthracnose,

vascular bundle browning and lead discolouration than untreated fruit. This material offers considerable promise as a postharvest treatment.

TABLE 1: Average Firmometer readings of fruit on removal from Cold Storage and external ratings of Stem end rot and Anthracnose complex when ripe.

Treatment	Firmometer reading	% Stem End Rot Ratings*			% Anthracnose complex Ratings**			
		0	1	2	0	1	2	3
Control	43,4	89,9	4,6	5,5	7,3	31,2	26,6	34,9
Prochloras	42,9	99,1	0,9	0	42,2	34,9	17,4	5,5

* 0 = Nil 2 = severe

** 0 = Nil 3 = severe

TABLE 2: Internal disorders of avocados on ripening assessed 10 minutes after cutting.

Treatment	Anthracnose	% Incidence		
		Vascular Bundle Browning	Pulp Spot	Lead Discolouration
Control	30,3	49,5	4,6	19,3
Prochloras	5,5	27,5	3,7	13,8