

Osuna-García, Jorge A.1; Doyon, Gilles²; González-Durán, Isidro J. L.¹
 Salazar-García, Samuel¹; Goenaga, Ricardo³

INTRODUCTION

Canada is an important avocado importer country accounting for 12-15% of total avocado exports from Mexico. 'Hass' avocado is harvested year round in the state of Michoacan. For most part of the season, fruit reach adequate mesocarp dry matter content (DM), ripen properly and consequently, quality and shelf life are excellent. However, after early January fruit DM content increases and skin blackening occurs. Shipments to Canada containing fruit with blackening skin have been rejected since this characteristic is sometimes associated with low pulp firmness and short shelf life.

OBJECTIVES

To study the effect of harvest time and ripening degree on initial quality and shelf life of 'Hass' avocado fruit.

MATERIAL AND METHODS

Fruit were harvested in October and December, 2007 and from January to April, 2008 and rated according to the following scale: 1 = fully green, 2 = < 25% skin blackening, 3 = 26-50% skin blackening, 4 = 51-75% skin blackening and 5 > 76% skin blackening (Figure 1). At harvest, DM (Microwave oven method), skin color (visual scale), pulp firmness (Chatillon penetrometer Model DFE-050), and pulp color (Konica Minolta Color Reader CR 10) were evaluated. Fruit were then refrigerated (6.0 ± 1.0 °C; 90 ± 5% RH) for seven days to simulate terrestrial shipment to Canada. After this period, fruit were stored under market conditions (22 ± 2 °C; 75 ± 10% RH) until they reached the edible ripening stage. Weight loss (WL; Digital scale Acculab VI-4800), fruit with skin blackening, pulp firmness, and pulp color were determined every three days. Data were analyzed using the GLM process of the SAS statistical program.

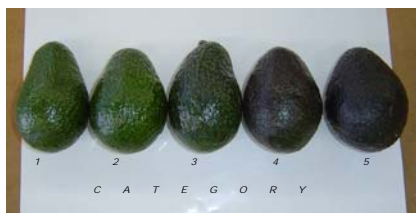


Figure 1. Skin color categories

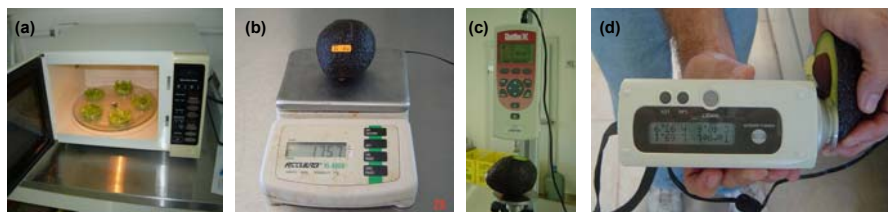


Figure 2. Determination of DM (a), WL (b), Firmness (c), and pulp color (d)

RESULTS AND DISCUSSION

Pulp DM, skin color and pulp color significantly increased with harvest time and degree of skin blackening. However, there were no significant differences (P ≤ 0.05) for WL and firmness.

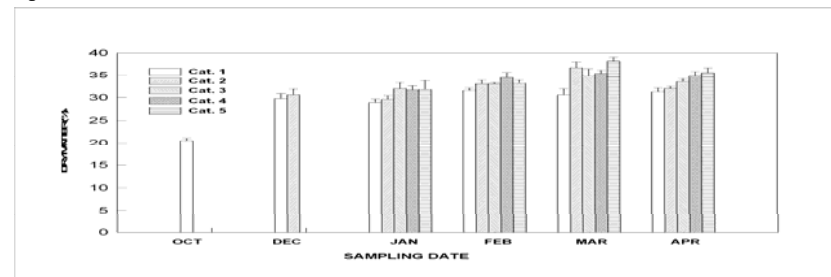


Figure 3. Evolution of pulp dry matter content

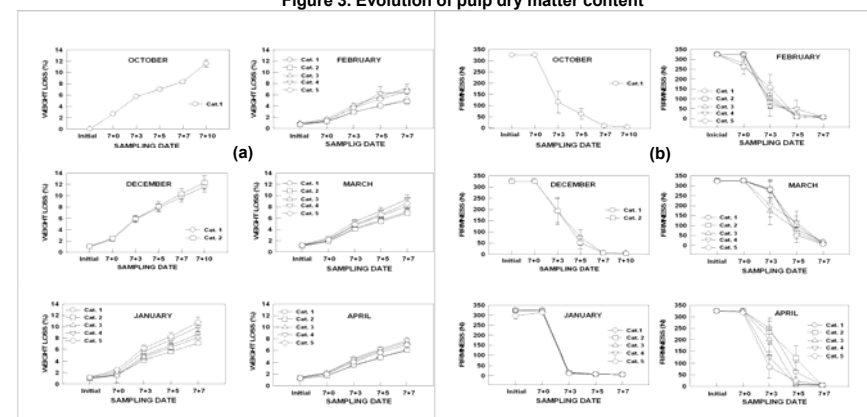


Figure 4. Evolution of weight loss (a) and pulp firmness (b)

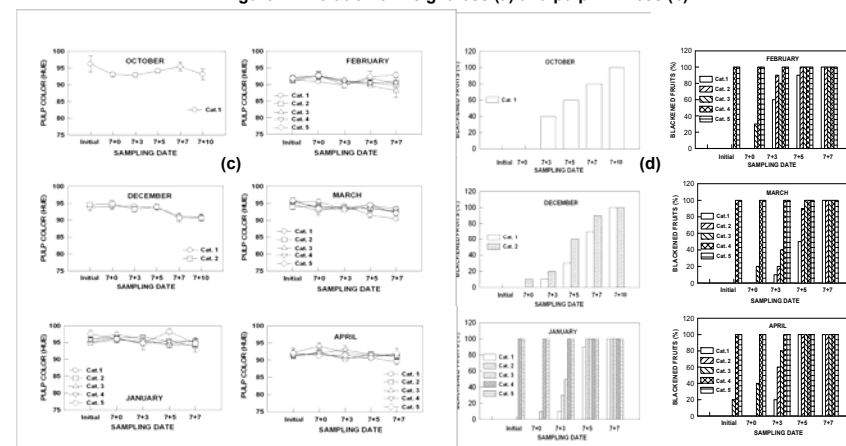


Figure 5. Evolution of pulp color (c) and blackened skin (d)

CONCLUSIONS

Our results showed that there is no reason for Canadian retailers to reject or down grade fruit with blackened skin, since global fruit quality characteristics and shelf life were not affected by harvest time, postharvest stress simulation, and degree of initial skin color.

