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**INTRODUCTION**

Mexico is the main 'Hass' avocado exporter in the world with more than 100,000 ton exported every year. Canada is an important importer country accounting for 12-15% of total exports from Mexico. Normally, from December to May exported fruit to Canada have very high dry matter content which is determined with a destructive and time consuming method.

**OBJECTIVES**

To correlate skin chlorophyll fluorescence, as a non-destructive method, with dry matter content of 'Hass' avocado fruit.

**MATERIAL AND METHODS**

From December 2007 to April 2008, 10 fruit of five different skin color categories were collected monthly from a packinghouse in Michoacan, Mexico, and rated using 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). Two days after harvest, individual fruit were assessed for chlorophyll fluorescence using a modulated fluorometer Model OS1-FL, Opti-Sciences, Hudson, NH, USA (Figure 2) reporting fluorescence under steady state conditions (Fs), maximal fluorescence under steady state conditions (Fms), and quantum efficiency yield (Y). Immediately after reading fluorescence, fruit mesocarp dry matter content (DM) was determined using a microwave oven (Figure 3) and values were correlated with fluorescence using the Pearson's correlation coefficient of the SAS software package.



Figure 1. Skin color categories



Figure 2. Measuring chlorophyll fluorescence



Figure 3. Determining pulp dry matter content

**RESULTS AND DISCUSSION**

Fs values varied from 147 to 292; FMS from 357 to 989 and Y from 0.504 to 0.818, while DM did so from 19 to 42%. The only fluorescence parameter that correlated significantly (P<0.001) with DM was Fs; however, correlation was low (r = - 0.31). This could be due to the relative high DM content of fruit (avg. 32.9%), which was much higher than the legal maturity standard (DM ≥ 21.5%).

Table 1. Pearson correlation coefficient of fluorescence and dry matter

Pearson correlation coefficient, N = 220	
	DM
FS	- 0.31281 < 0.0001
FMS	0.07245 0.2847
Y	0.19931 0.0030

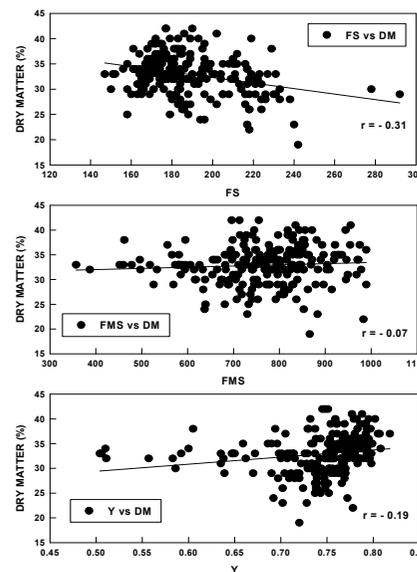


Figure 4. Correlation between fluorescence and pulp dry matter

**CONCLUSIONS**

Chlorophyll fluorescence did not correlate with DM content of over-ripe avocado fruit. Efforts are underway to find out if fluorescence may be useful to predict legal maturity on unharvested 'Hass' avocados.