

Quality assessment of avocado pulp oils during storage

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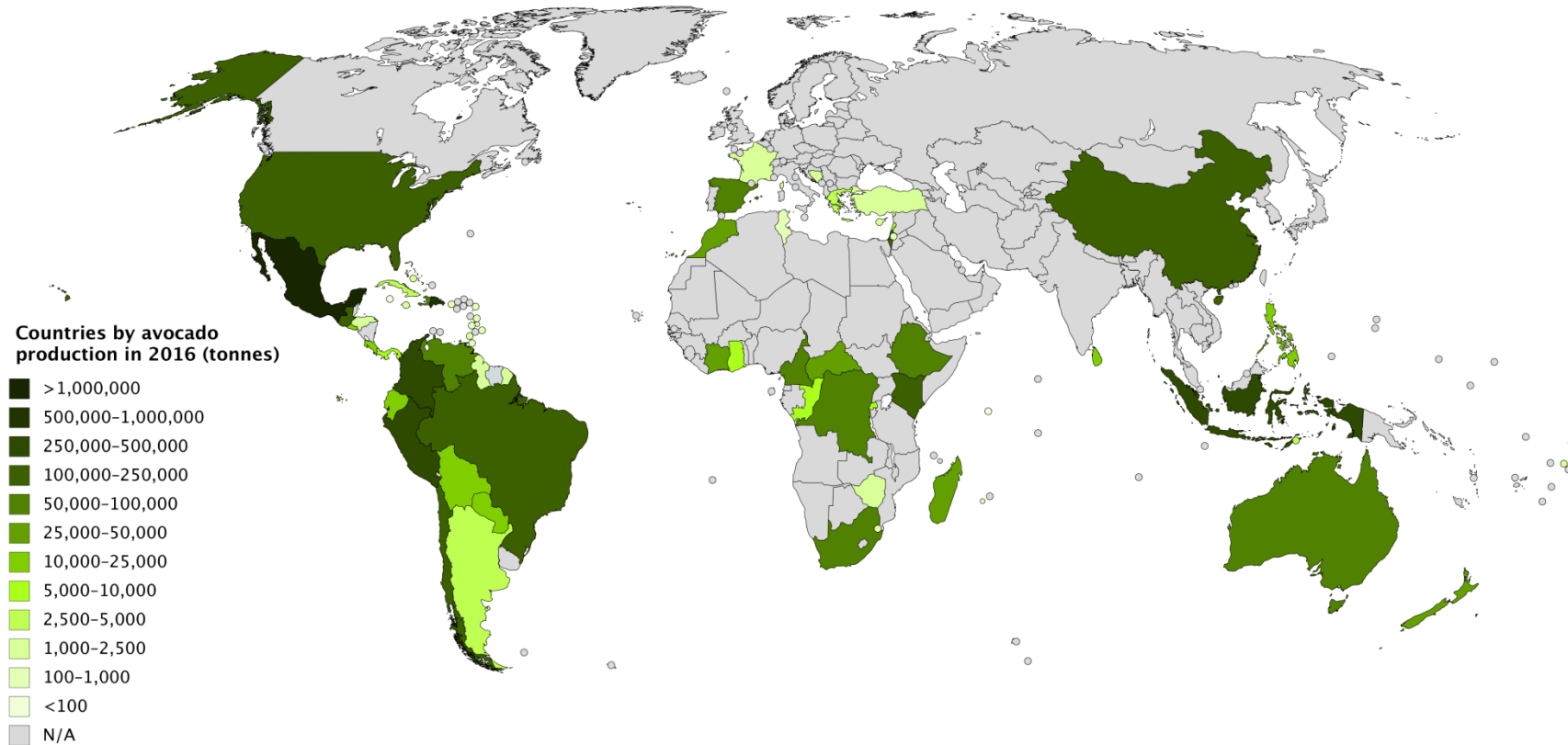
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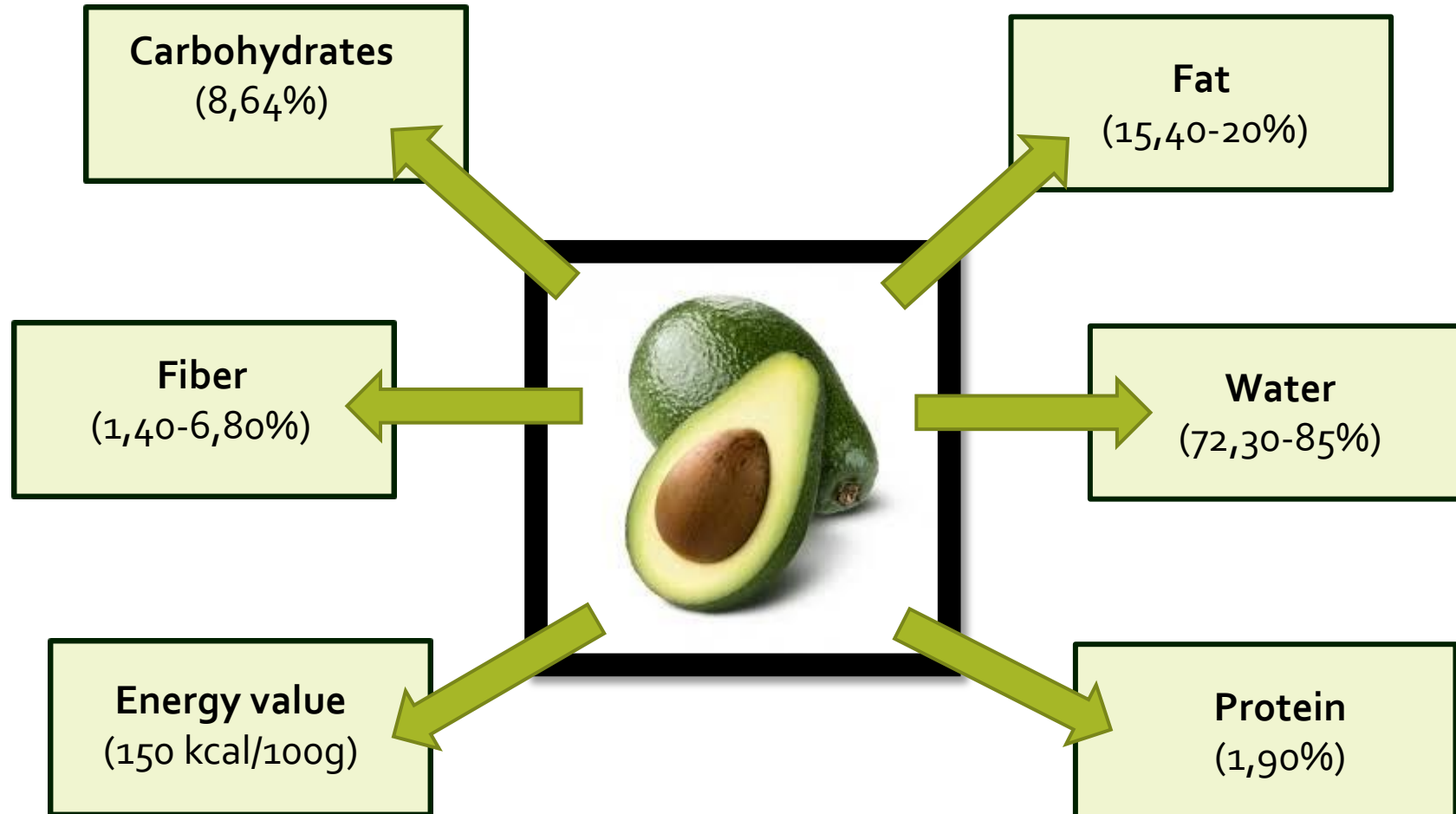
The image features two sliced avocados, one positioned above the other, set against a vibrant green background. The avocados are cut in half, revealing their creamy, light-green flesh and dark brown pits. The lighting is soft, highlighting the texture of the fruit. The word "INTRODUCTION" is written across the center in a bold, black, serif font.

INTRODUCTION

The avocado producing countries



Chemical composition



The background of the slide features two sliced avocados. One is positioned in the upper right, and the other is in the lower right. The avocados are cut in half, showing their creamy green flesh and dark brown pits. The background is a textured, light green color. The text is centered horizontally across the middle of the image.

THE AIM OF THE STUDY

The aim of this study

- to assess quality and oxidative stability of avocado pulp oils during a 2-month storage period



The background of the slide features two sliced avocados, one positioned above the other, showing their creamy green flesh and dark brown pits. The entire scene is set against a light green, textured background that resembles a fine mesh or fabric. The text is centered over the avocados.

***MATERIALS
AND METHODS***

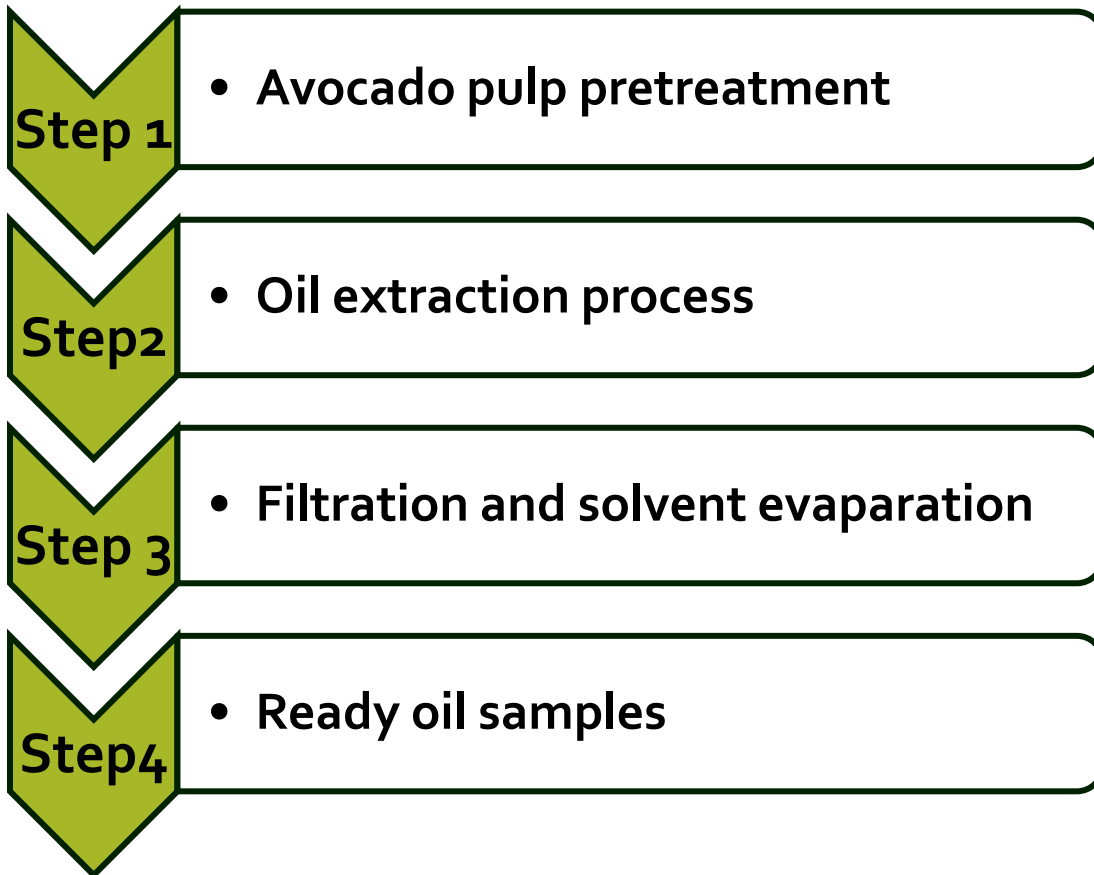
Materials



A - Hass cultivar

B - Red cultivar

Avocado oil sample preparation



Analytical and statistical methods



Determination of acid value and peroxide value

Determination of oxidative stability by PDSC method

Determination of fatty acid profiles by GC method

Distribution of fatty acids in the sn-2 and sn-1,3 positions of triacylglycerols

Statistical analysis

The background of the slide features two sliced avocados. One slice is positioned in the upper right, and another is in the lower right. The avocado flesh is a vibrant green, and the pits are a dark brown. The background is a light, textured green. The text is centered over the image.

***RESULTS
AND DISCUSSION***

Profiles of oxidation products

Changes of acid value (AV), peroxide value (PV) and oxidation induction time (OIT) of oil samples during storage.

	Oil sample	Storage time		
		0 month	1 month	2 months
AV [mg KOH* ^{AV} g of oil ⁻¹]	Hass	0,62±0,08 ^A	0,82±0,04 ^A	3,91±0,05 ^C
	Red	0,57±0,01 ^A	1,31±0,16 ^B	4,66±0,13 ^D
PV [meq O ₂ * ^{PV} kg of oil ⁻¹]	Hass	3,99±0,08 ^A	7,01±0,06 ^C	9,13±0,33 ^E
	Red	4,90±0,08 ^B	7,48±0,08 ^C	8,29±0,05 ^D
OIT [min]	Hass	111,42±2,57 ^B	59,55±1,08 ^A	49,44±4,00 ^A
	Red	60,63±8,24 ^A	50,62±1,94 ^A	48,06±0,21 ^A

Fatty acids profile


Percentage content of main identified fatty acids

		Hass			Red		
		0 month	1 month	2 months	0 month	1 month	2 months
SFA	C 16:0	17,12±0,01 ^B	18,01±0,01 ^C	17,86±0,46 ^{BC}	14,39±0,04 ^A	17,25±0,03 ^{BC}	17,29±0,11 ^{BC}
	C 18:0	0,63±0,01 ^A	0,65±0,01 ^A	0,64±0,06 ^A	0,92±0,03 ^B	0,93±0,08 ^B	0,91±0,03 ^B
	C 20:0	0,13±0,02 ^A	0,12±0,02 ^A	0,12±0,04 ^A	0,15±0,08 ^B	0,18±0,01 ^D	0,17±0,01 ^C
ΣSFA		17,88	18,78	18,62	15,46	18,36	18,37
MUFA	C 16:1	7,34±0,05 ^C	7,40±0,01 ^C	7,41±0,22 ^C	3,88±0,05 ^A	5,48±0,02 ^B	5,58±0,01 ^B
	C 17:1	0,14±0,01 ^A	0,13±0,02 ^A	0,12±0,01 ^A	0,14±0,01 ^A	0,14±0,01 ^A	0,11±0,01 ^A
	C 18:1	62,14±0,02 ^B	61,88±0,01 ^B	61,92±0,66 ^B	64,39±0,11 ^C	56,97±0,15 ^A	56,81±0,20 ^A
	C 20:1	0,26±0,02 ^A	0,25±0,01 ^A	0,26±0,02 ^A	0,28±0,01 ^A	0,28±0,01 ^A	0,29±0,05 ^A
ΣMUFA		69,87	69,66	69,70	68,69	62,87	62,78
PUFA	C 18:2	11,11±0,01 ^C	10,59±0,02 ^A	10,73±0,01 ^B	14,82±0,05 ^D	17,30±0,02 ^E	17,40±0,03 ^F
	C 18:3	0,84±0,02 ^B	0,72±0,02 ^A	0,73±0,07 ^A	0,77±0,01 ^A	1,17±0,03 ^C	1,14±0,03 ^C
	C 20:5	0,12±0,05 ^A	0,06±0,03 ^A	0,06±0,01 ^A	0,08±0,01 ^A	0,12±0,01 ^A	0,12±0,02 ^A
ΣPUFA		12,06	11,37	11,51	15,67	18,58	18,66
ΣUFA		81,93	81,03	81,21	84,36	81,45	81,43
Unidentified		0,19	0,19	0,18	0,18	0,20	0,21

Distribution of fatty acids in the sn-2 and sn-1,3 positions of triacylglycerols

Positional distribution of selected fatty acids in avocado oil samples

Fatty acids	Oil sample	Fatty acid content in TAG [%]	Fatty acid content in position [%]		Percentage distribution of fatty acid in sn-2 [%]
			sn-2	sn-1,3	
C 16:0	Hass	17,12	7,77	21,8	15%
	Red	14,39	11,8	15,69	27%
C 16:1	Hass	7,34	5,95	8,03	27%
	Red	3,89	3,85	3,91	33%
C 18:1	Hass	62,14	62,95	61,73	34%
	Red	64,39	55,29	68,94	29%
C 18:2	Hass	11,11	19,49	6,91	59%
	Red	14,82	24,64	9,91	55%

The image features two sliced avocados, one positioned above the other, set against a vibrant green background with a subtle, repeating pattern of avocado slices. The avocados are cut lengthwise, revealing their creamy, light-green flesh and dark brown pits. The lighting is soft, highlighting the texture of the fruit.

CONCLUSIONS

To conclude

- The storage period of avocado oils increased the acid and peroxide values and decreased the oxidative stability.
- MUFA was the dominant group of identified fatty acids.
- The oleic acid is dominant monounsaturated fatty acid.
- Avocado oil could be used as a component of functional foods.

The background of the slide features two sliced avocados, one positioned above the other, set against a textured green background. The avocados are cut in half, revealing their creamy, light-green flesh and dark brown pits. The lighting is soft, highlighting the texture of the fruit and the surrounding background.

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Thank You for Your attention!

