

Determination of shelf life of table olive flours produced from Cobrançosa cultivar

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Introduction and Objective:

In the present work, flours from table olives from the cultivar Cobrançosa subjected to natural fermentation were prepared. These flours will be added to several dishes or sauces, such as mayonnaises. Only the pulp of the table olives was used to produce the flours. The product's shelf life was determined when subjected to storage (with and without exposure to light) at room temperature.

Materials and Methods:

Sample and treatments:

- Table olives from cultivar Cobrançosa
- Soaking → Freezing → Lyophilization → Milling → Packaging under vacuum

Parameters:

- ❑ Colour
- ❑ Water activity
- ❑ Moisture
- ❑ Ash and fat contents
- ❑ Total phenols (TP)

- ❑ Antioxidant activity: percentage of DPPH radical scavenging activity
- ❑ Oxidative stability - peroxide value (PV) and ultraviolet spectrophotometry analysis (extinction coefficients (K) at 232 and 268 nm)
- ❑ Sensory analysis

Storage: with and without exposure to light at room temperature

Sampling times: 0, 1, 2 and 3 months.



Results and Discussion:

Parameters	Sample	Time (months)				
		0	1	2	3	
A_w	Without Light	0.110±0.013 ^c	0.270±0.031 ^{b,A}	0.360±0.006 ^{a,A}	0.369±0.004 ^{a,A}	A_w increased 0.110 – 0.369
	With Light	0.110±0.013 ^c	0.324±0.026 ^{b,A}	0.340±0.024 ^{a,b,A}	0.367±0.002 ^{a,A}	
Moisture (%)	Without Light	1.95±0.70 ^b	3.81±0.21 ^{a,A}	3.06±0.43 ^{a,b,A}	3.53±0.01 ^{a,b}	Increased
	With Light	1.95±0.70 ^b	4.36±0.46 ^{a,A}	3.81±0.50 ^{a,A}	4.31±0.05 ^{a,A}	

Ash: 13.0 – 16.5% (d.w.)

Fat: 62.2 – 69.2% (d.w.)

No type of change, both over time and between samples!

With no defined trend!

TP: 221 – 1015 mg gallic acid/kg of oil

DPPH: 10.5 – 31.5%

Parameters	Sample	Time (months)				
		0	1	2	3	
PV (mEq O ₂ /kg oil)	Without Light	9.1±0.7 ^c	23.4±1.6 ^{b,A}	43.0±2.5 ^{a,A}	57.5±25.8 ^{a,b,A}	PV increased Oxidation!
	With Light	9.1±0.7 ^b	37.8±16.9 ^{a,A}	44.0±1.2 ^{a,A}	38.2±12.6 ^{a,A}	
K_{232}	Without Light	4.0±1.0 ^a	3.9±0.5 ^{a,A}	4.0±0.6 ^{a,A}	3.9±0.4 ^{a,b}	No significant changes over time and among samples.
	With Light	4.0±1.0 ^a	4.9±1.1 ^{a,A}	4.6±0.9 ^{a,A}	5.0±0.4 ^{a,A}	
K_{268}	Without Light	1.1±0.2 ^{a,b}	1.1±0.1 ^{a,b,A}	1.0±0.3 ^{b,A}	1.4±0.1 ^{a,A}	
	With Light	1.1±0.2 ^a	1.1±0.2 ^{a,A}	1.2±0.2 ^{a,A}	1.5±0.2 ^{a,A}	

Sensory analysis: until one month, the samples presented a reasonable overall assessment, while after one and two months, the samples had an intense rancid smell.

Conclusion:

The storage time had a more significant effect than light on the quality of the flours. The shelf life of the table olive flours produced from Cobrançosa cultivar was about one month.

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