

CHEMICAL AND NUTRITIONAL QUALITY OF DIFFERENT PUMPKIN VARIETIES FROM ALGERIA

Liza Saher,^{1*} Khaldoun Bachari,¹ Borhane E.C. Ziani,¹ Lillian Barros^{2,3}

¹ Scientific and Technical Research Center in Physico-Chemical Analysis CRAPC, Tipaza, Algeria

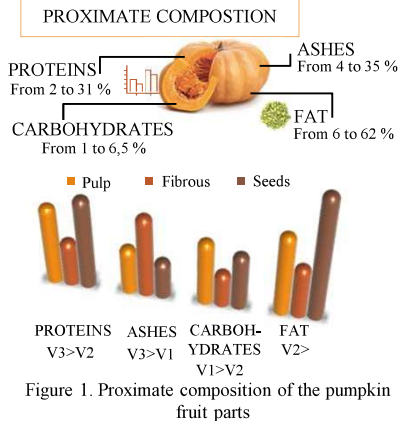
² Instituto Politécnico de Bragança IPB, Bragança, Portugal

³ CIMO, School of Sciences and Technology, Polytechnic Institute of Bragança, Bragança, Portugal
*saherliza@hotmail.com

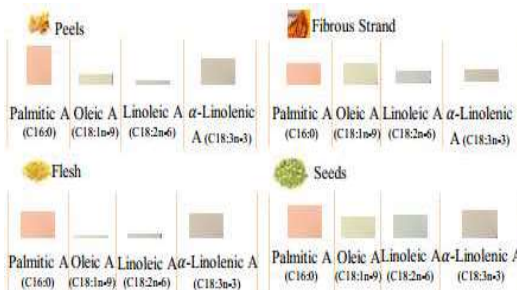
INTRODUCTION

Pumpkins are widely cultivated and consumed in Algeria, with different cultivars offering various nutritional benefits.^{1,2} This research aimed to comprehensively analyze the composition of three raw cultivars that are popular in Algeria (V1: *Cucurbita maxima* (Gold nugget Pumpkin), V2: *C. moschata* (Butternut Squash), and V3: *C. moschata* (Musquée de Provençal Squash)), highlighting differences, in nutritional profiling across various fruit parts (peel, pulp, fibers, and seeds).

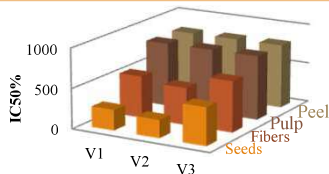
OUTCOMES



FATTY ACIDS PROFILING



ANTIOXIDANT ACTIVITIES



The *Cucurbita moschata* (butternut squash) cultivar is the best in terms of the recorded antioxidant activities. The extracts from the seeds of this species would therefore be more active than that the mesocarp part.

In conclusion, this study sheds light on the profiles of Algerian pumpkin cultivars and underscores their potential health benefits due, to varying nutrient compositions.

In conclusion, this study sheds light on the profiles of Algerian pumpkin cultivars and underscores their potential health benefits due, to varying nutrient compositions.

References

- [1] M. Benalia, A. Djeridane, N. Gourine, S. Nia, E. Ajandouz, M. Yousfi, Mediterranean Journal of Nutrition and Metabolism, 8 (2015) 9.
- [2] M. Shkolnikova, V. Abbazova, Vestnik MGTU, 24 (2021) 441.

Acknowledgments

The authors are grateful to the ministry of higher education and scientific research of Algeria, to PRIMA foundation under the project PULPING (Prima2019-08) and to the Foundation for Science and Technology (FCT, Portugal) for financial support through the project PRIMA Section 2-Multi-topic 2019: PulpIng (PRIMA/0008/2019).

EXTRACTION, IDENTIFICATION, AND QUANTIFICATION OF CAROTENOIDS

Five carotenoids were abundant in all the samples including lutein, zeaxanthin, a-carotene, beta-carotene, and lycopene. The highest content of carotenoids was found in *C. moschata* (musquée de provence squash).

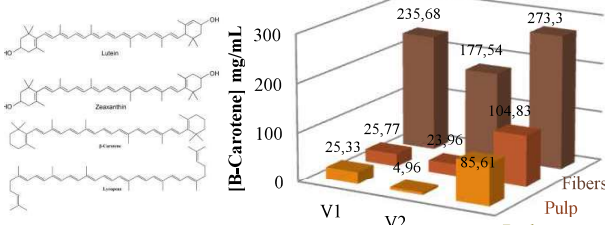
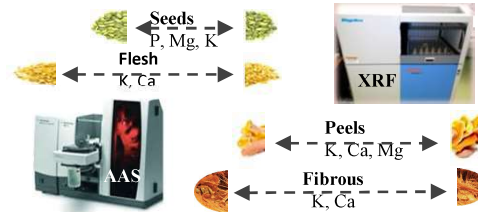


Figure 2. B-carotene concentration in different pumpkin cultivars.

MACRO-MICROELEMENTS

Table 1. Macro and micro elements content (%) in the different parts of the Algerian studied cultivars of pumpkin using XRF method

	V1			V2				V3				
	Peel	Flesh	Fibrous Seed	Peel	Flesh	Fibrous Seed	Peel	Flesh	Fibrous Seed			
Na	0,28	0,15	0,10	0,32	0,11	0,21	0,11	0,31	0,14	0,14	0,11	0,11
Mg	2,18	1,54	1,49	17,06	4,63	1,42	1,16	13,78	4,41	2,01	3,97	15,02
Al	0,05	0,02	0,02	0,03	0,08	0,07	0,03	0,45	0,07	0,05	0,04	0,03
Si	0,66	1,19	0,25	0,13	2,37	2,40	1,27	1,67	1,65	1,69	0,41	0,11
P	3,73	1,90	3,76	42,78	4,80	5,87	4,34	39,99	5,72	5,56	5,19	42,08
S	2,39	2,21	3,11	12,11	3,80	4,48	4,54	11,49	2,44	2,90	5,02	11,23
Cl	29,46	23,87	12,94	0,38	15,11	7,40	9,68	0,31	14,64	9,93	7,71	0,19
K	52,74	62,02	73,85	24,81	59,29	73,35	72,89	29,34	58,14	72,74	71,11	29,09
Ca	8,20	6,84	4,28	1,45	9,51	4,55	5,78	1,50	0,04	0,02	0,04	0,38
Mn	-	-	-	0,16	-	-	-	0,14	0,05	0,03	0,03	0,00
Fe	0,06	0,05	0,05	0,32	0,08	0,07	0,06	0,59	0,02	0,05	0,04	0,03
Ni	0,00	-	-	0,03	0,00	-	-	0,03	0,09	0,05	0,07	0,00
Cu	0,01	0,01	0,01	0,06	0,03	0,03	0,02	0,06	-	-	-	0,14
Zn	0,04	0,02	0,02	0,38	0,05	0,03	0,03	0,31	0,09	0,07	0,10	0,33
Br	0,14	0,10	0,05	-	0,03	0,03	0,02	0,00	0,00	-	-	0,03
Rb	-	0,01	0,03	0,00	0,03	0,03	0,03	0,03	0,02	0,02	0,01	0,05
Sr	0,06	0,06	0,05	0,00	0,08	0,03	0,06	0,00	12,50	4,74	6,14	1,18



The most important things in our life.



Bragança, Portugal
July 24-25, 2024