



# ANTIOXIDANT ACTIVITIES OF DIFFERENT PUMPKIN CULTIVARS FROM ALGERIA

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## Introduction

Pumpkin fruits are widely appreciated and consumed worldwide. In addition to their balanced nutritional profile, pumpkin species also present valuable bioactive compounds that confer biological and pharmacological properties to them. However, the seeds, peels and fibrous strands resulting from pumpkin processing are still poorly explored by the food industry. The current study used those fruit components from the genotypes of pumpkin that are economically significant in Algeria to produce bioactive extracts.

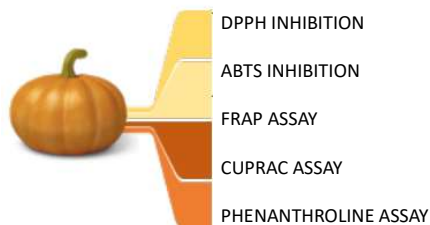


Figure 1: Different Antioxidant activities

## Material et Methods

The antioxidant activities were performed on three raw cultivars that are popular in Algeria: V1 Cucurbita maxima (Gold nugget Pumpkin), V2 Cucurbita moschata (Butternut Squash), and V3 Cucurbita moschata (Musquée de Provençal Squash), by using various fruit parts (peel, pulp, fibers and seeds).

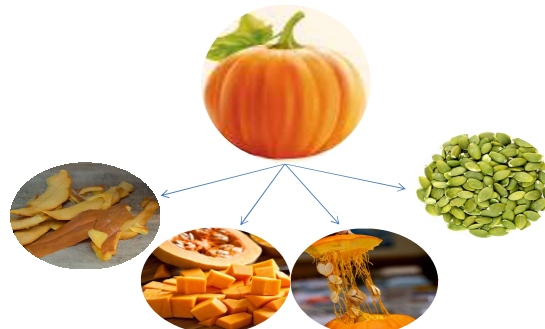


Figure 2: Different pumpkin parts.

## Results and Discussion

Table 1. Antioxidant activities (IC50%) of the different pumpkin cultivars from Algeria.

	V1 Cucurbita maxima (Gold nugget Pumpkin)				V2 Cucurbita moschata (Butternut Squash)				V3 Cucurbita moschata (Musquée de Provençal Squash)			
Samples	V1 Peel	V1 Pulp	V1 Fibrous	V1 Seeds	V2 Peel	V2 Pulp	V2 Fibrous	V2 Seeds	V3 Peel	V3 Pulp	V3 Fibrous	V3 Seeds
DPPH inhibition	>800	>800	>800	726.62 ± 49.82	>800	>800	>800	606.96 ± 34.73	>800	>800	>800	752.79 ± 27.78
ABTS inhibition	>800	>800	523.56 ± 18.56	257.43 ± 9.45	>800	>800	463.59 ± 12.89	226.04 ± 10.23	>800	>800	634.83 ± 20.65	472.67 ± 0.61
FRAP assay	>200	>200	>200	166.05 ± 31.14	>200	>200	>200	126.96 ± 10.70	>200	>200	>200	124.08 ± 0.58
CUPRAC assay	>800	>800	>800	395.61 ± 28.71	>800	>800	>800	395.33 ± 16.63	>800	>800	>800	475.56 ± 53.50
Phenanthroline assay	>200	>200	>200	154.71 ± 32.49	>200	>200	>200	115.02 ± 10.31	>200	>200	>200	192.70 ± 15.35

This antioxidant response is however, relative to the pumpkin species, showing that the Cucurbita moschata (butternut squash) cultivar is the best in terms of the recorded activities. The extracts from the seeds of this species would therefore be more active than that the mesocarp part.

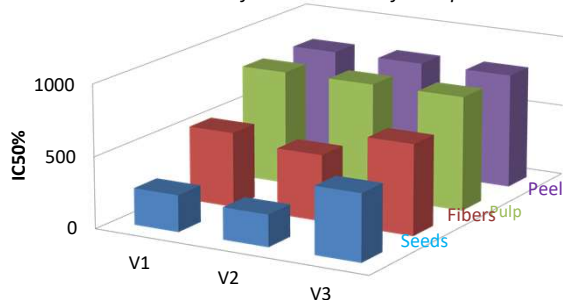


Figure 3: Antioxidant activity (IC50%) of the different pumpkin cultivars from Algeria

## Conclusion

The results showed considerable differences in antioxidant activities amongst the cultivars and the fruit parts. The internal parts of the pumpkin fruit (fibers and seeds) are the one that revealed the lowest IC50 and the Cucurbita moschata (butternut squash) cultivar is the best in terms of the recorded activities.

## Reference

Leichtweis, M., Molina, A., Pires, T., Inês, M., Calhela, R., Bachari, K., Ziani, B., E.C., Oliveira, M., Pereira, C., Barros, L. (2022). Biological Activity of Pumpkin Byproducts: Antimicrobial and Antioxidant Properties. *Molecules*, 27. 8366. 10.3390/molecules27238366.