Variability of phenolic content in three *Cucurbita maxima* peels extract fractions

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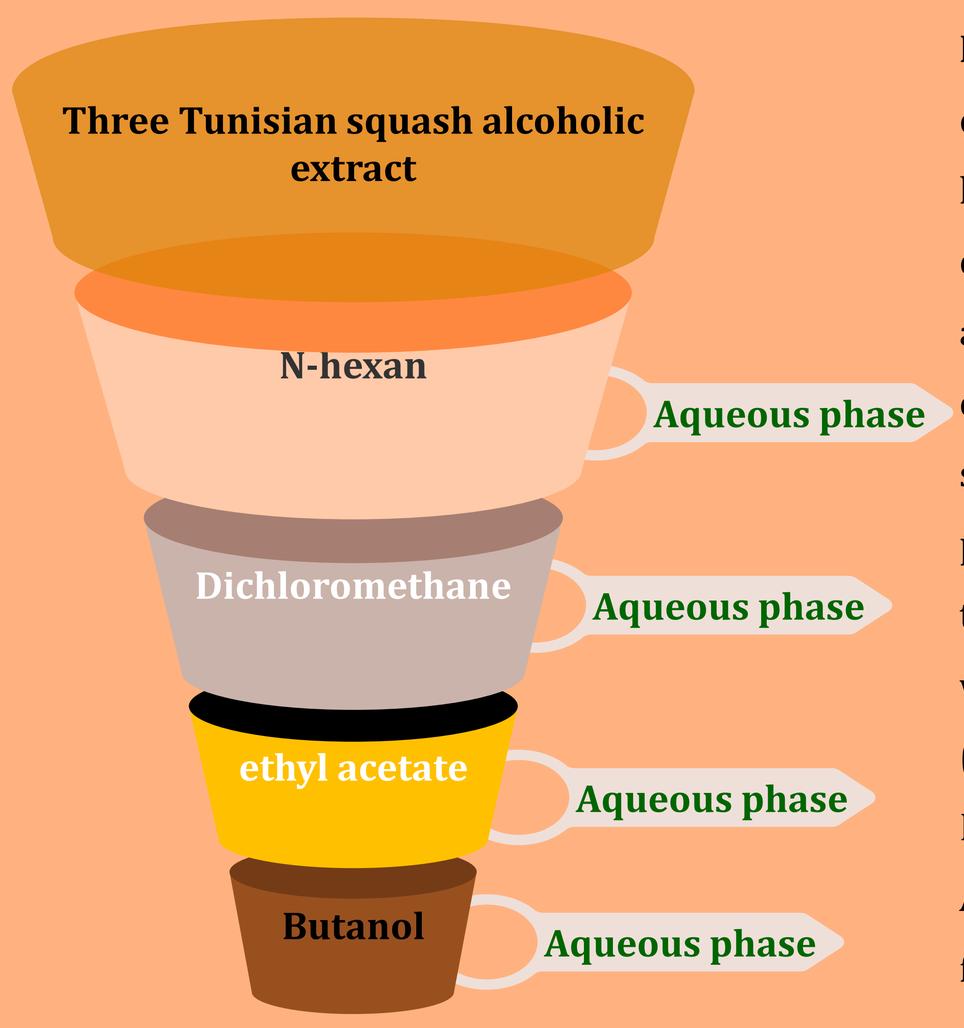
Background: Pumpkin is grown all over the world, from the United States to China, India, Tunisia, and Europe, being one of the most economically important species cultivated worldwide. The present study targeted to examine Pumpkin peels, seeds, and fibers' phenolic contents as well as their antioxidant and antimicrobial capacities. Thus, the aim of the present study was to examine the peels of three Tunisian squash (Var. Batati (NGBTUN 746), Var. Karkoubi (NGBTUN748) et Var Béjaoui (NGBTUN751)) fractions for their phenolic contents.

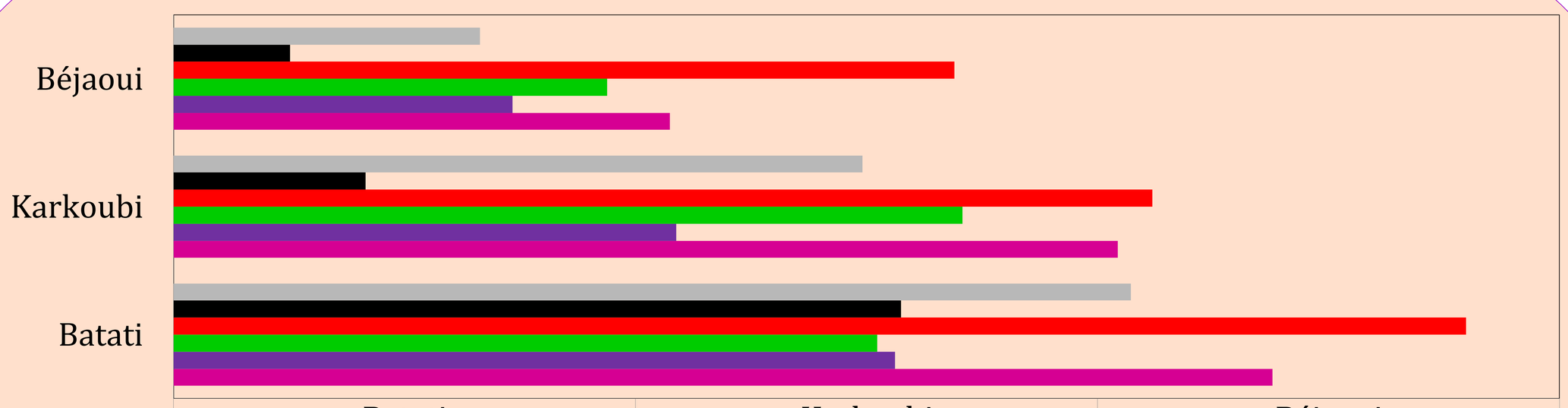


Materials/Methods: Mature fruits were cut and peels were separated then lyophilized and their preliminary extraction were conducted with aqueous ethanol. To find a gradient elution solvent system capable of separating compounds with a wide polarity range, various solvents were tested. In detail, the following solvents were used for liquid-liquid extraction (methanol, n-hexane, ethyl acetate, Dichloromethane, n-butanol and water). All the obtained extracts were assassed for their total phenolic contents.

NGBTUN748

NGBTUN746

NGBTUN751



	Batati	Karkoubi	Béjaoui
H2O	5.53	3.98	1.77
BuOH	4.20	1.11	0.67
EtOAc	7.46	5.65	4.51
DCM	4.06	4.55	2.50
Hex	4.16	2.90	1.96
MeOH	6.34	5.45	2.86

According to the obtained results, important variability can be observed when comparing the different solvents extracts as well as the three varieties. Considering the solvent extractabilities, the ethyl Acetate and the methanolic fraction seems to be richest ones in phenolic compounds with a total polyphenol content reaching 7.5 and 6.3 mg GAE/gDR for Batati peels. The aqueous fraction contained also important TPC estimated at 5.5 mg GAE/gDR and was closely followed by hexane, dichloromethane and butanol fractions that the highest TPC assessed was around 4 mg GAE/gDR. When comparing the three varieties it seems that Batati peels contains the highest total phenolic contents that ranged from 7.4 to 4 mg GAE/gDR. For karkoubi, TPC ranged from 5.6 to 1.1 mg GAE/gDR while it was limited to 4.5 mg GAE/gDR in bejaoui samples.