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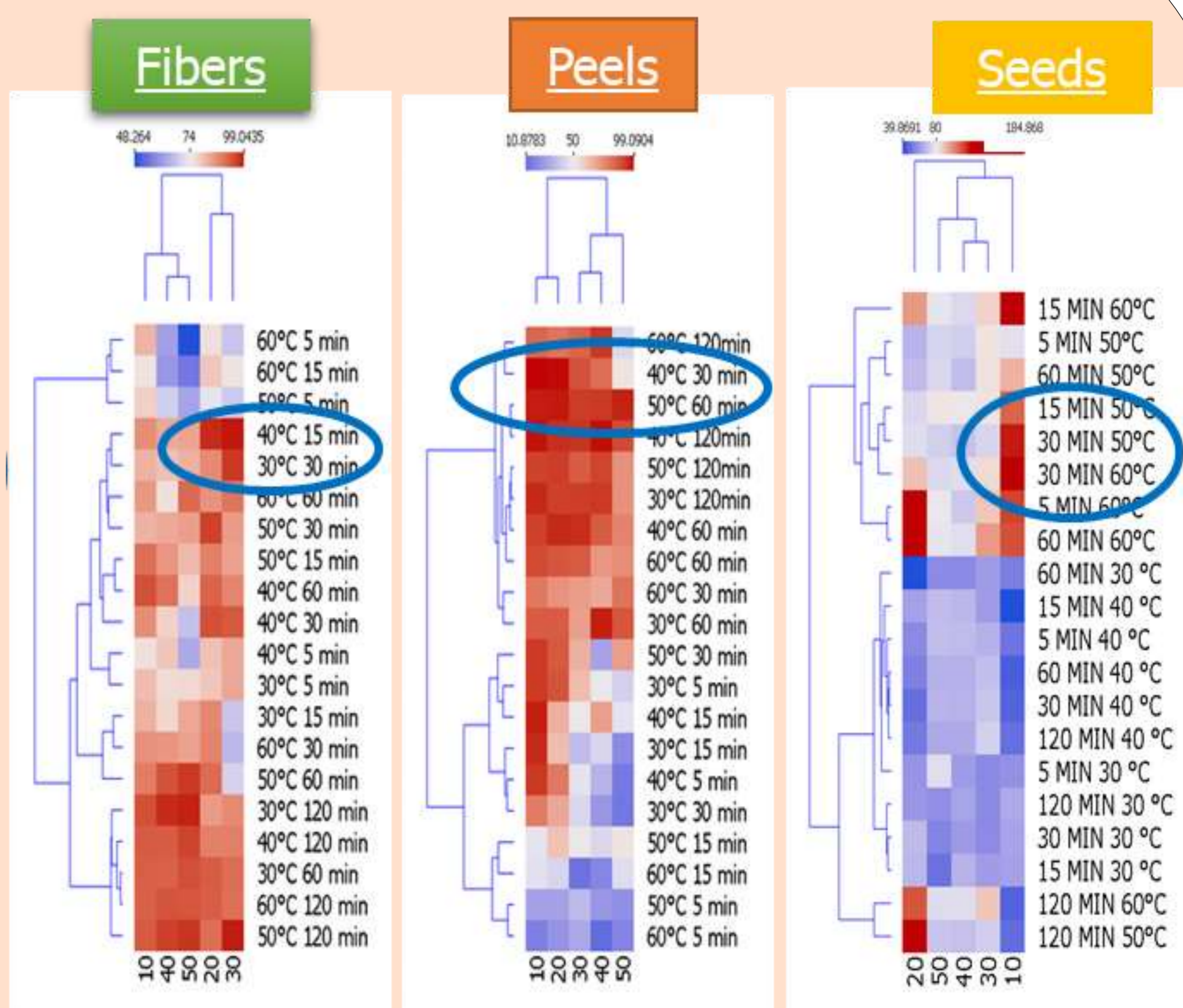
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Background: Squash by-products are often underutilized despite their potential contribution to the circular economy in food industries. This research focused on determining the optimal extraction parameters of antioxidants from two Tunisian squash landraces, karkoubi NGBTUN748 and Bejaoui NGBTUN751, to enrich extract phenolic composition and enhance their antioxidant capacity,

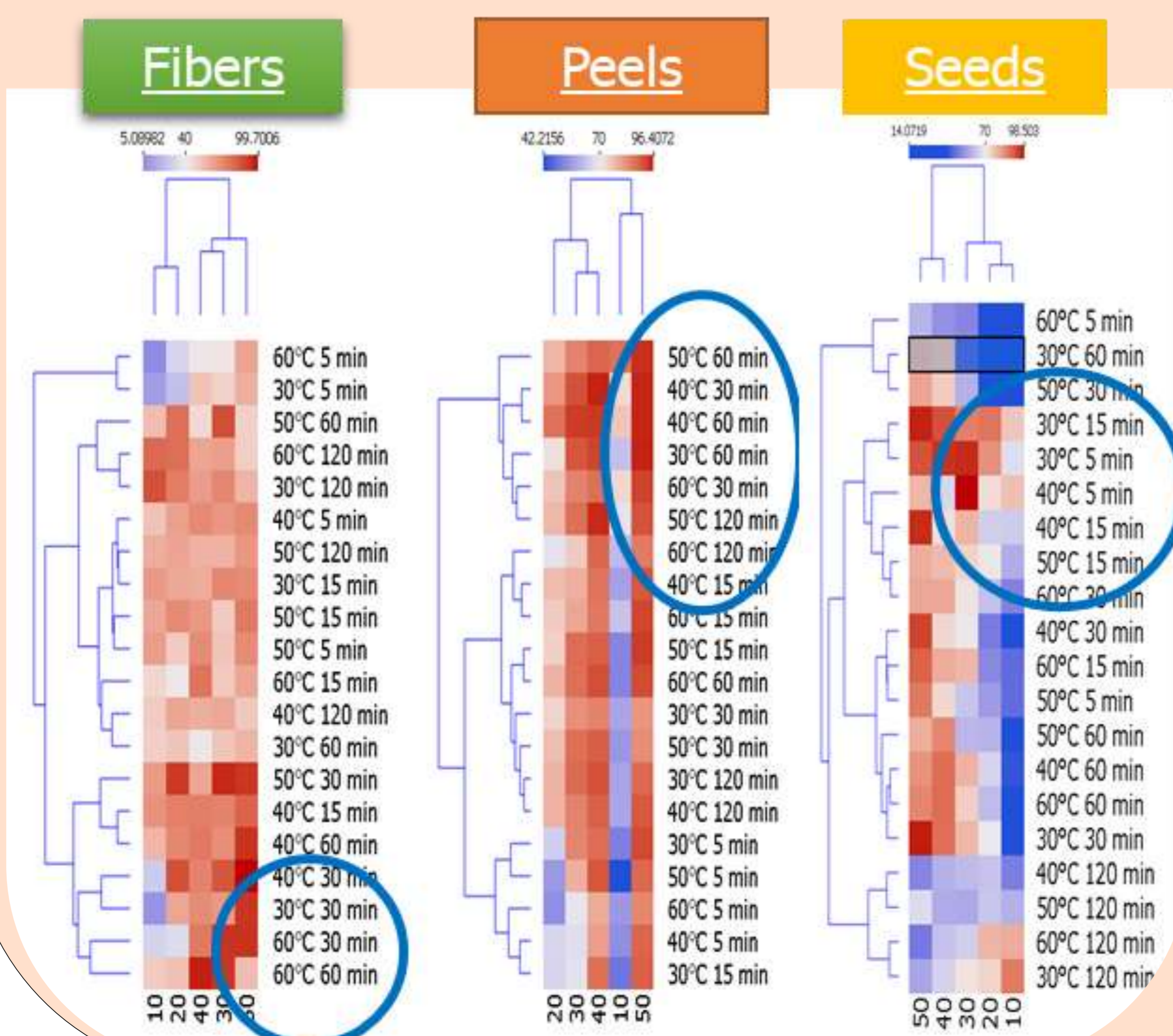
Materials/Methods: This study was conducted to identify suitable independent variables and define the experimental boundaries for effective extraction. Three key factors were selected for the study: extraction temperature, extraction time, and alcohol percentage. Three by products were studied: fibrous stand, seeds, and peels. Total phenolic content and antiradical scavenging activity were calorimetrically assessed for all extracts.

Results. The results analysis showed significant variations among the three different parts of the squash. For the Bejaoui variety, optimal conditions for extraction included alcohol percentages of 50% for fibers, 50% for peels, and 30% for seeds. Extraction temperatures ranged from 30°C to 50°C, and extraction times varied between 5 to 60 minutes, depending on the specific part. Similarly, for the karkoubi variety, optimal extraction conditions involved alcohol percentages of 30% for fibers, 10% to 20% for peels, and 10% for seeds. Extraction temperatures ranged from 30°C to 60°C, and extraction times varied from 5 to 30 minutes.

C. Moschata var. Karkoubi



C. Moschata var. Bejaoui



Conclusion. These findings provide valuable insights into the efficient extraction of natural antioxidants from squash by-products. By tailoring the extraction process to each specific part of the squash, the study enhances the understanding of utilizing these by-products for their potential applications in promoting sustainability within the food industry.

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