

Amino acid profile and nutritional value of tomato processing by-products

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INTRODUCTION & AIM

Tomato by-products, such as its fresh fruit, contain bioactive compounds with beneficial properties for human health. The analysis of these bioactive compounds provides relevant information that promotes the valorization of these by-products. Amino acids are considered to be compounds with a high nutritional value.

In this work, the amino acid profiles and nutritional value of processed tomato by-products, which were subjected to one of two dehydration methods, were analyzed.

RESULTS & DISCUSSION

In total, 20 protein and 1 non-protein amino acids (γ -aminobutyric acid, GABA) were identified in the tomato by-product. The co-elution of some compounds was observed, namely Asp+Glu, GABA+Pro, and Ile+Leu (Figure 1).

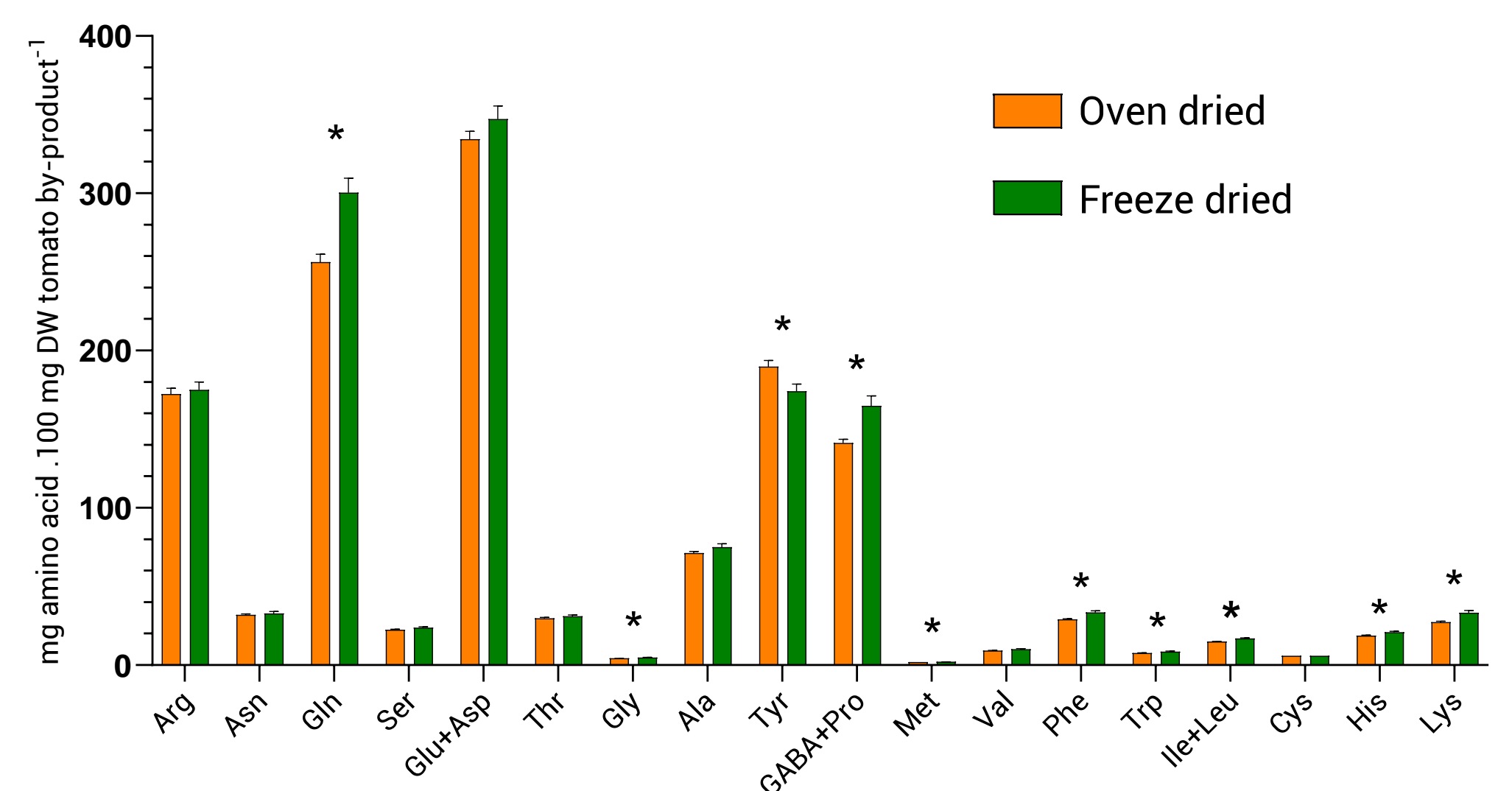


Figure 1. Profile of free amino acids. Values are means \pm SD (n = 6; mg .100 g of DW⁻¹). * Means are significantly different by Tukey's test at 5% probability (p < 0.05).

The fiber, carbohydrate, protein, and fat content, which were determined for the nutritional value, did not show significant differences between dehydration treatments (Figure 2).

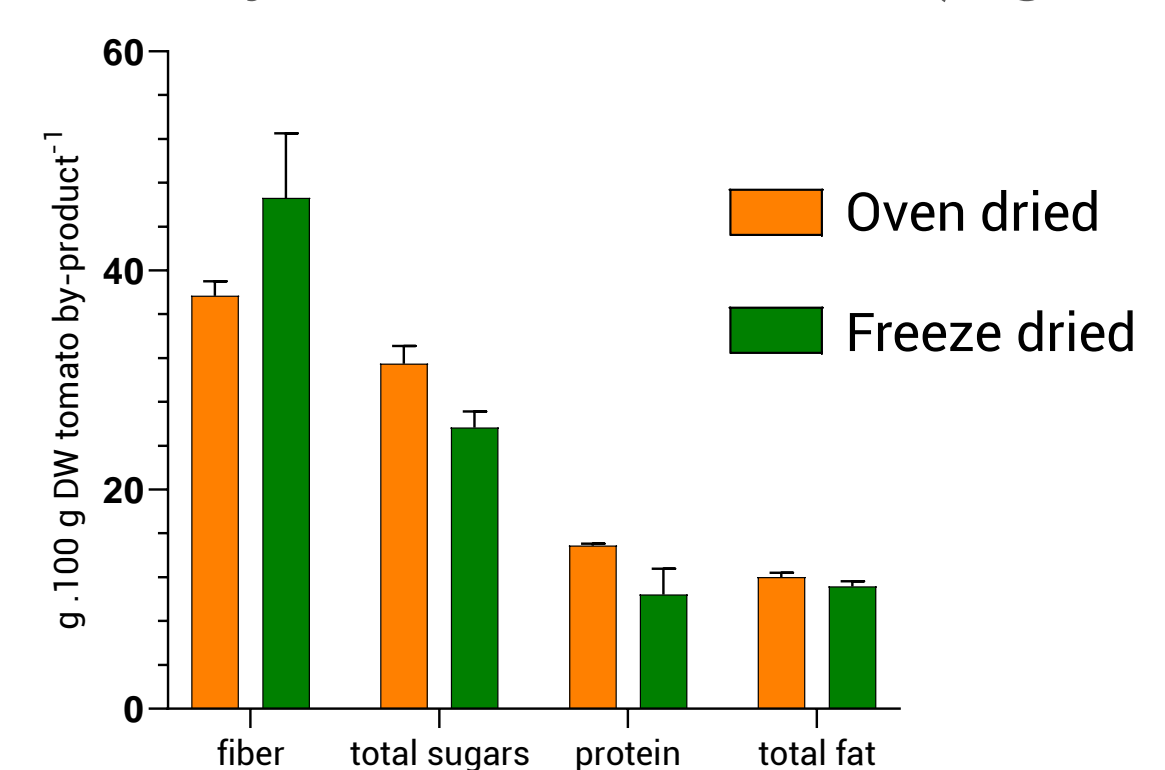
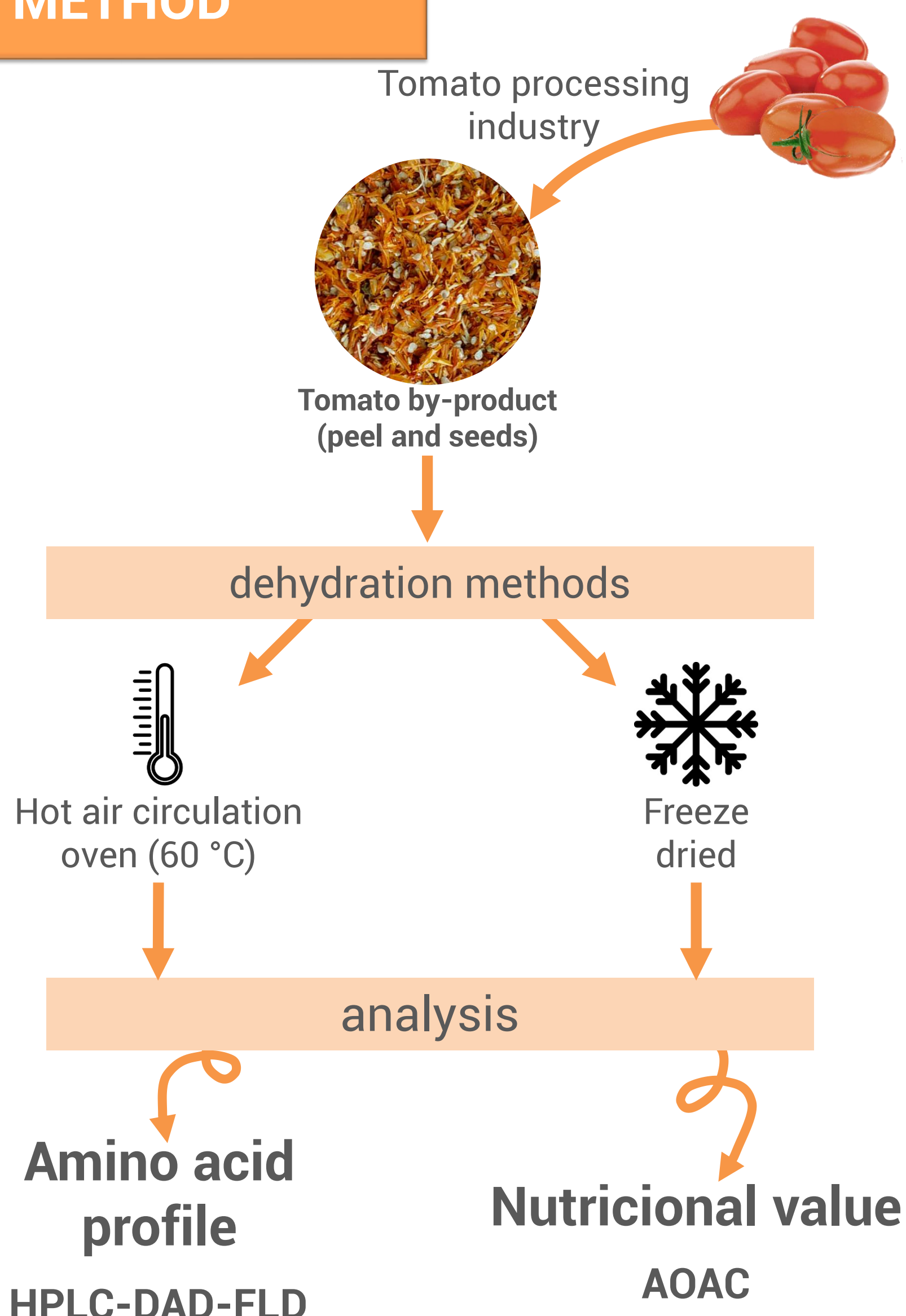


Figure 2. Nutritional value of tomato by-product. Values are means \pm SD (n=3; g .100 g of DW⁻¹).

METHOD



CONCLUSION

The results contribute to knowledge about the composition of by-products from tomato processing industries. Although lower values were observed for some amino acids in the oven drying treatment, there were no differences in nutritional value, resulting in a more cost-effective option for the dehydration of tomato by-products as an economic source of phytochemical compounds, providing added value to biotechnology-based industries.