

OPTIMIZATION OF LIGNIN EXTRACTION FROM GRAPE STALKS AND EVALUATION OF ANTIOXIDANT ACTIVITY

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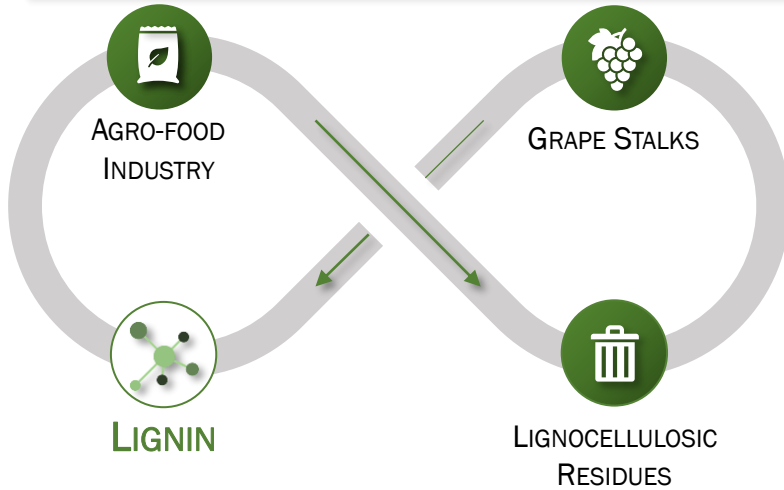
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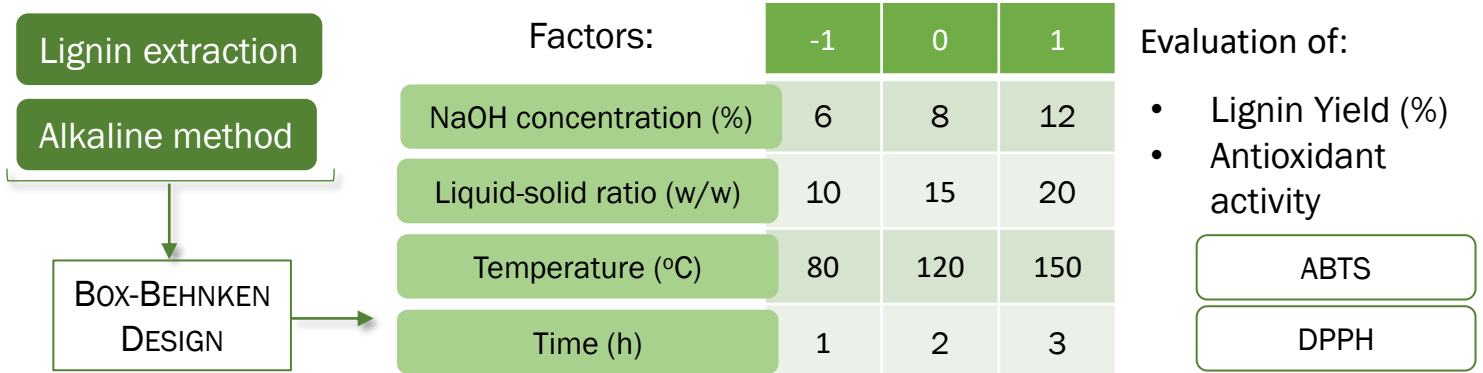
INTRODUCTION



The agro-food industry produces large amounts of wastes, many of which are lignocellulosic residues. These residues have lignin in its composition, an underrated biopolymer with high potential for valorization (1). One of the opportunities lies in the antioxidant capacity of lignin that can be further applied in the food industry, namely on packaging (2).

Hence, this work aimed at optimizing the extraction of lignin from grape stalks and evaluating its antioxidant capacity.

METHODS



RESULTS

Optimum extraction conditions (Desirability = 0.703)	
NaOH concentration (%)	12
Liquid-solid ratio (w/w)	20
Temperature (°C)	110
Time (h)	1

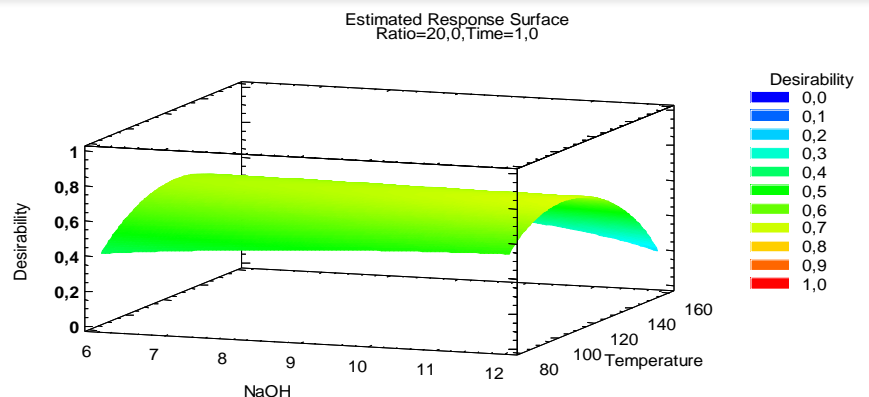


Figure 1 – Estimated Response Surface of the extraction of lignin from grape stalks.

The obtained lignin yield was **48.6%** and the extract presented high antioxidant capacity with **466.2 μM** Trolox equivalent/mg of lignin for ABTS and **407.1 μM** Trolox equivalent/mg of lignin for DPPH.

CONCLUSION

With this work, it was possible to define an alkaline extraction with optimized conditions that allowed the recovery of lignin from a relevant agro-food residue. Thus, grape stalks can be a valuable source of lignin with high antioxidant capacity.

Acknowledgments

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