

# SUBCRITICAL WATER EXTRACTION FOR THE VALORIZATION OF BLACK ELDERBERRY BYPRODUCT

Zorana Mutavski<sup>1\*</sup>, Nataša Nastić<sup>1</sup>, Slađana Krivošija<sup>1</sup>, Mirjana Sulejmanović<sup>1</sup>, Jelena Vladić<sup>1</sup>, Senka Vidović<sup>1</sup>

<sup>1</sup>Faculty of Technology, University of Novi Sad, Bulevar cara Lazara 1, 21000 Novi Sad, Serbia

\*zoranamutavski@gmail.com

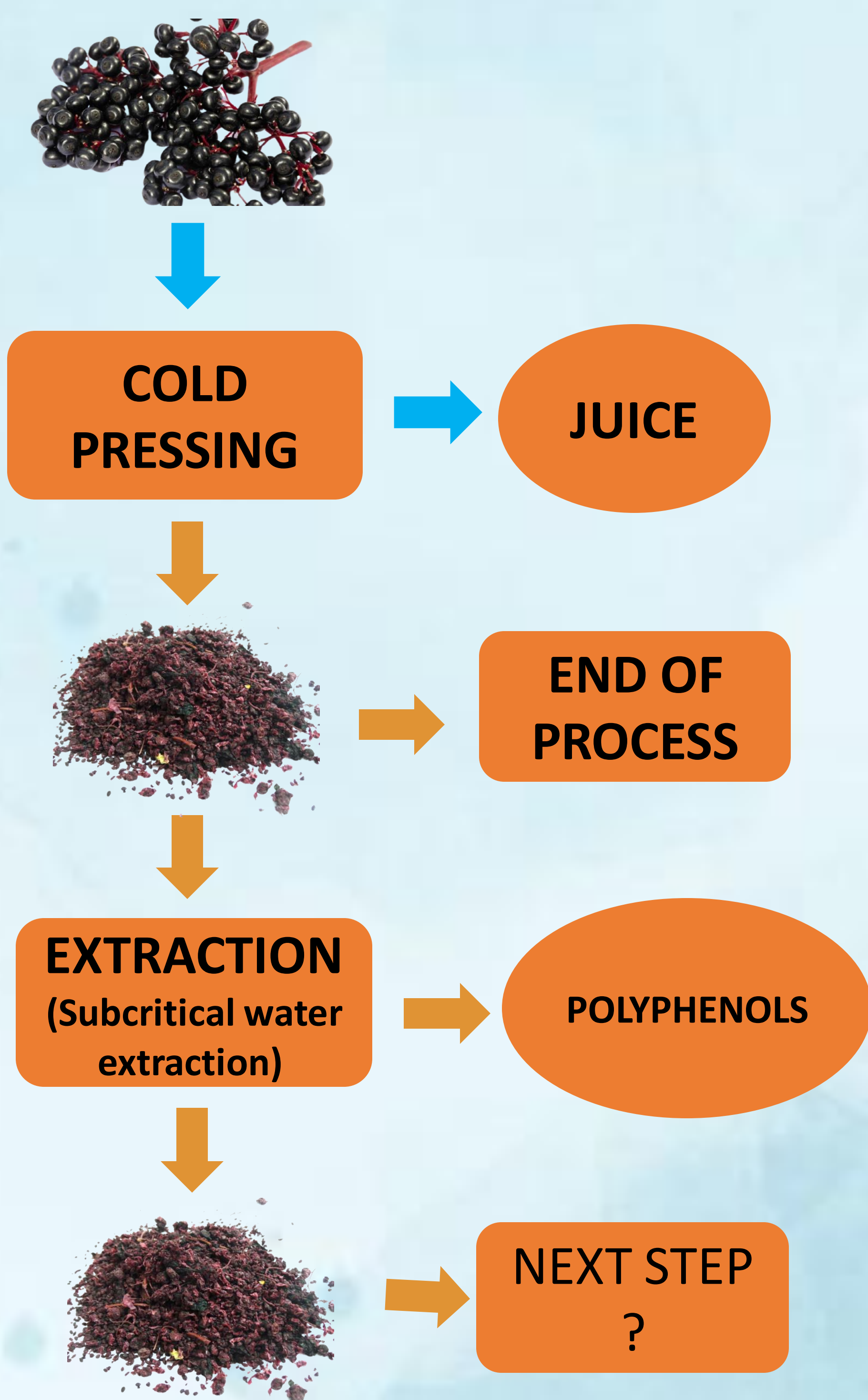
## Introduction:

Current practice in the agro-industrial waste management does not fully exploit waste potential since bio waste often contains valuable compounds that can be extracted from it and further used in different industries.

Black elderberry pomace is a byproduct from the production of black elderberry juice. It is mostly composed of hemicellulose and cellulose, but it also represents an important source of polyphenolic compounds to be used in food, pharmaceutical and cosmetic industries, with many applications related to the health benefits.

## Methods:

- Subcritical water extraction
- Total content of phenols (spectrophotometric)
- Total content of flavonoids (spectrophotometric)



## Results:

Extraction conditions	TP (mg/g DW)	TF (mg/g DW)
120°C, 20 min, 20 bar	139.24	32.06
140°C, 20 min, 20 bar	127.29	29.50
160°C, 20 min, 20 bar	125.81	27.75
180°C, 20 min, 20 bar	132.75	28.74
200°C, 20 min, 20 bar	134.78	29.36

## Conclusion:

- The elderberry pomace extracts obtained at 120 °C showed the highest content of total phenols (139.24 mg GAE/g dry weight) and total flavonoids (32.06 mg CE/g dry weight) highlighting the great potential of elderberry pomace for valuable applications.
- The lowest contents for total phenolics and flavonoids (125.81 mg GAE/g dry weight and 27.75 mg CE/g dry weight, respectively) were observed in the extracts obtained at 160 °C.

## Acknowledgment

The authors are grateful to the Serbian Ministry of Education, Science and Technological Development (451-03-9/2021-14/200134). The authors would like to thank NISHA d.o.o., Belgrade, Serbia, for the kind donation of investigated raw material.

