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CHEMICAL CHARACTERIZATION OF *PRUNUS SPINOSA* LEAVES

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INTRODUCTION

Prunus spinosa is a member of the plant family Rosaceae and large amount of leaves are produced during tree cultivation. Agricultural residues mainly comprise cellulose, lignin and hemicellulose, which are renewable, sustainable and biodegradable resources.

The *Prunus spinosa* wastes were studied regarding their carbohydrate's content, being a promising feedstock for biofuel production, mainly due to their low costs.

Figure 1. *Prunus spinosa* leaves

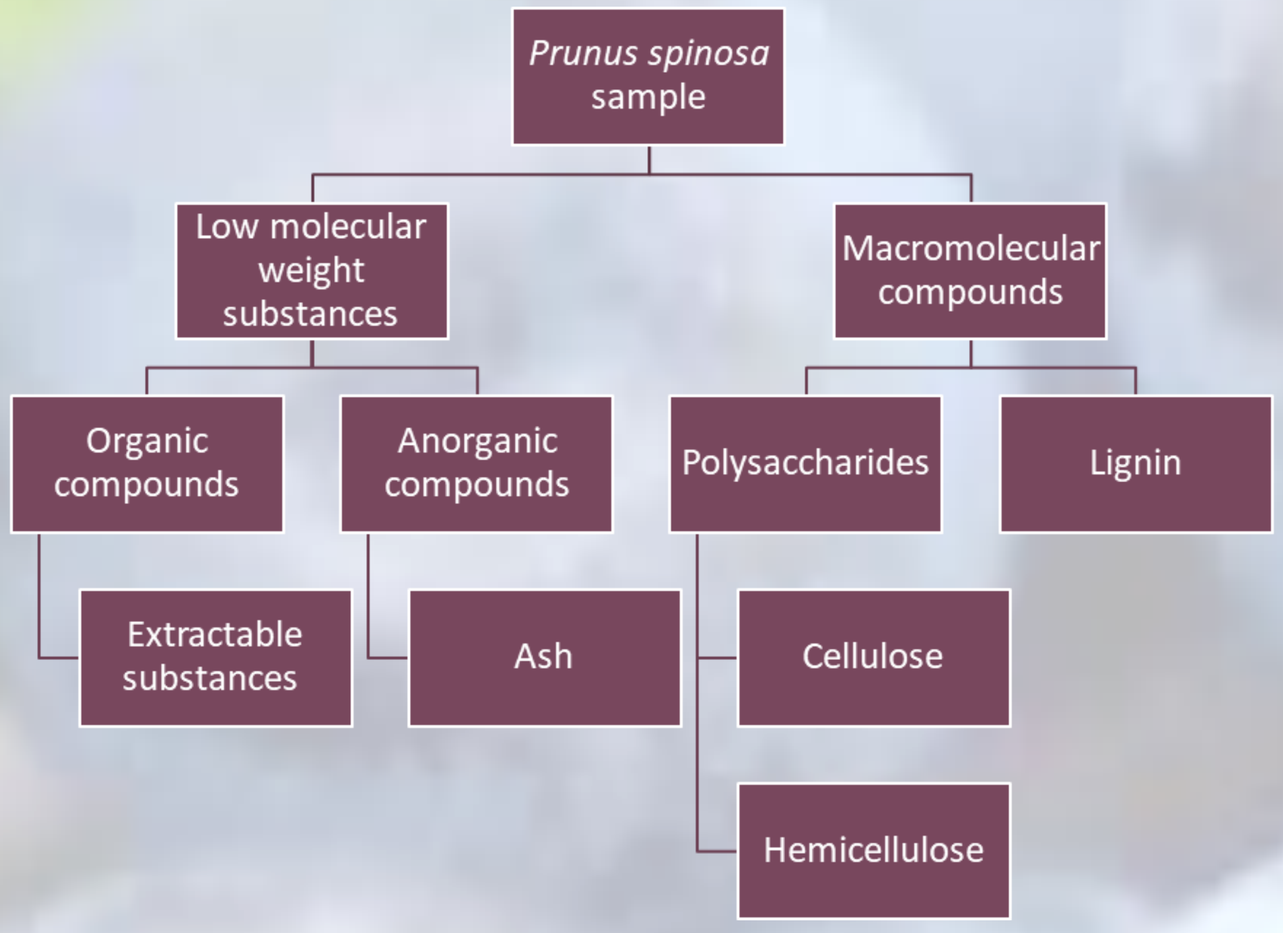

Figure 2. Experimental scheme for determining the composition of *Prunus spinosa* leaves

METERIALS AND METHODS

- *Prunus spinosa* leaves were collected locally (Cluj-Napoca town, Romania) during spring and autumn seasons 2019
- The content of holocellulose was determined as residue obtained after reaction with $NaClO_2$
- The cellulose content was determined as the holocellulose residue insoluble in NaOH

RESULTS AND CONCLUSIONS

The main constituent analysis of *Prunus spinosa* leaves showed that samples contain about 55% carbohydrates (for species harvested in the spring season) and 50% (for species harvested in the fall). The cellulose content was found to be between 19.3 and 27.3 % and the content of lignin was between 31.2 and 38.2% (depending season harvested). In the present research work was proved that by-products resulted from pruning of *Prunus spinosa* are an important source of renewable energy with huge production potential.

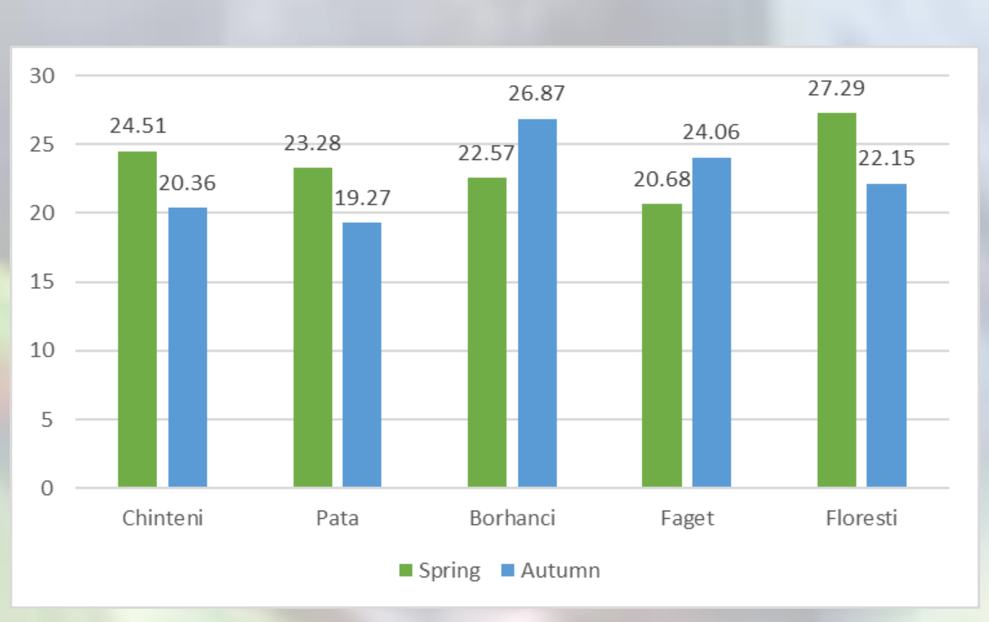

Figure 3. Cellulose content of *Prunus spinosa* leaves

Figure 4. Lignin content of *Prunus spinosa* leaves

ACKNOWLEDGMENT

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