



# INTELLIGENT VALORISATION OF AGRO-FOOD INDUSTRIAL WASTES (INTELWASTES) 2SOFT/1.2/83

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## APPROCHES FOR HONEY-BASED FUNCTIONAL FOODS OBTENTION

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### INTRODUCTION

#### Functional foods

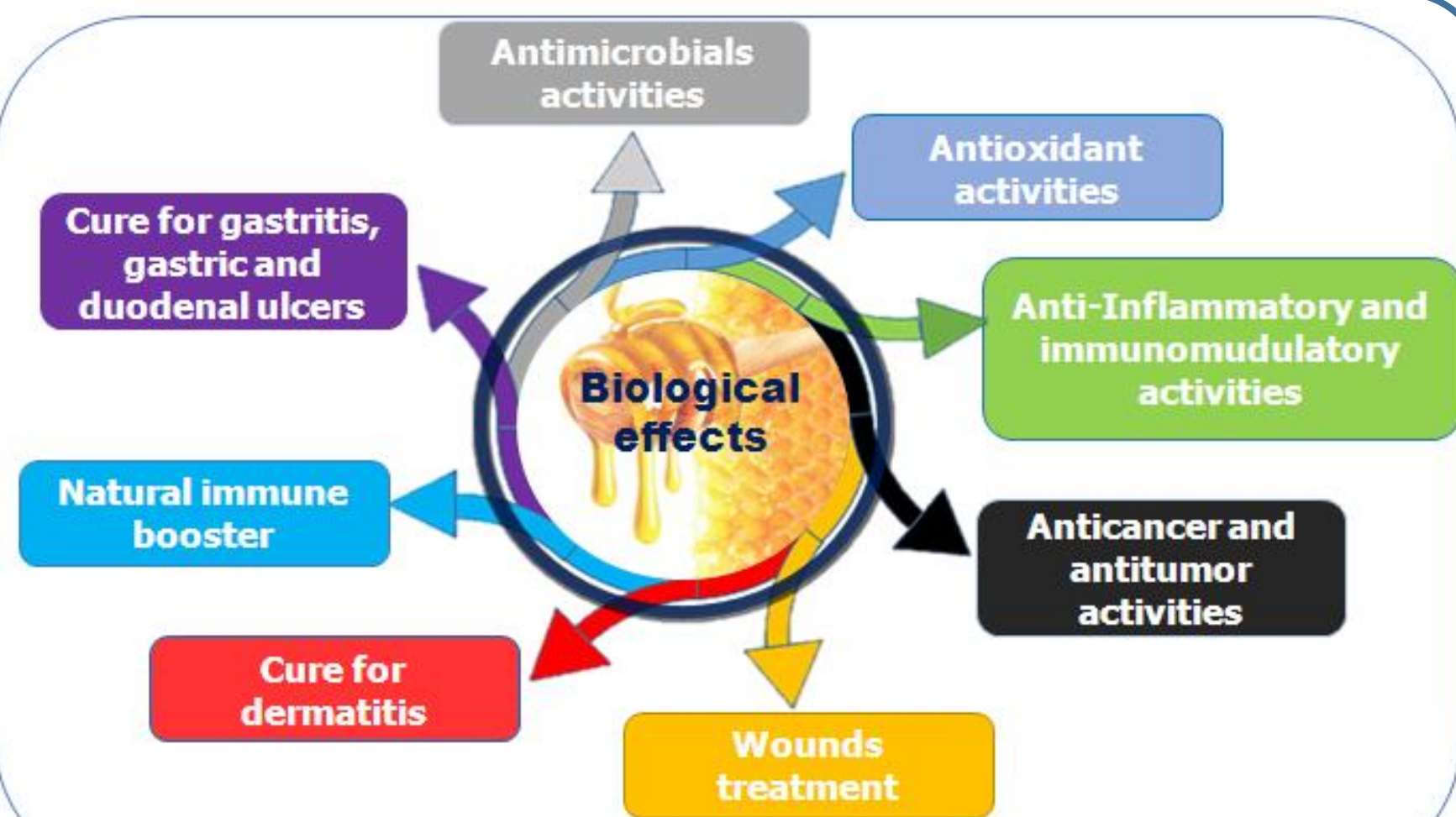
- offer health benefits beyond their nutritional value
- can be obtained also by *enrichment*, *fortification* or *fermentation*, in addition to nutrient-rich ingredients like fruits and veggies

The present study was carried out in order to explore the honey potential for preparing functional foods and beverages with health benefits:

- obtention of several varieties of mead using different types of honey from local producers
- preparation of an innovative product based on acacia honey and grape pomace powder in different proportion



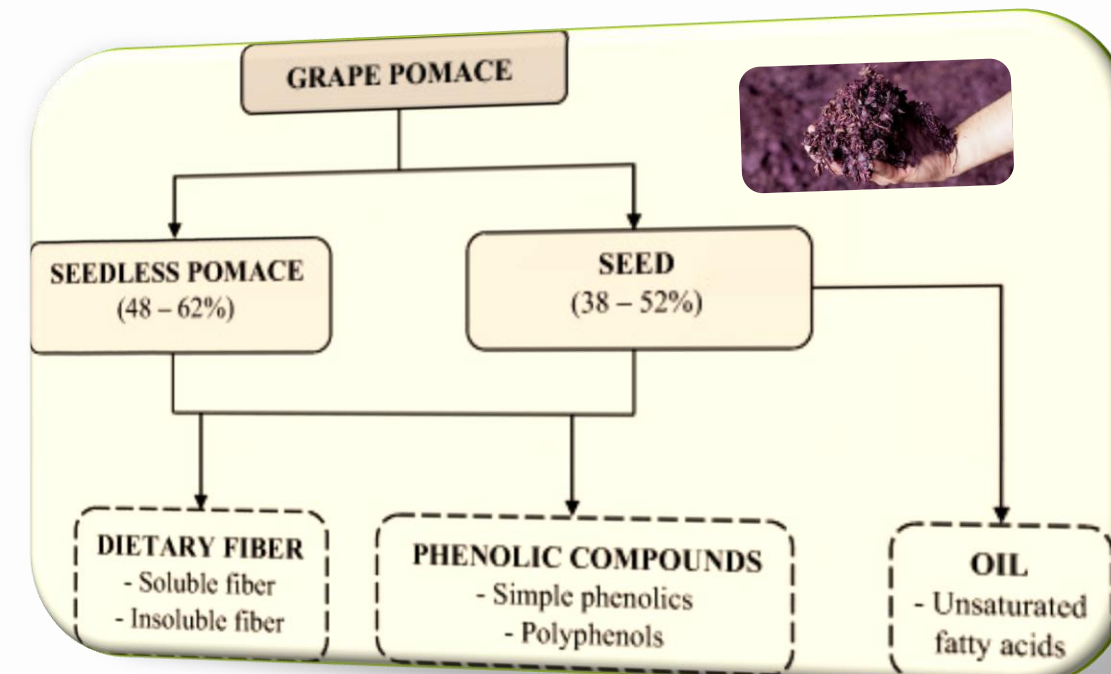
Honey



#### Mead ("honey wine" or hydromel)

- a honey-based alcoholic beverage with 8-18 % alcohol content.
- a health tonic due to the presence of its natural and high-quality compounds
- can be served as an excellent aperitif or dessert wine.
- is not so well known among Romanian consumers, even if it is considered among the oldest fermented beverages in the world.

**Grape pomace (GP)** - the main by-product from the wine industry



#### APPLICATIONS

- Agriculture
- Cosmetic industry
- Pharmaceuticals
- Fine chemicals
- Livestock fields
- Bio-energy recovery system
- Fertilizer ...

### EXPERIMENTAL SECTION

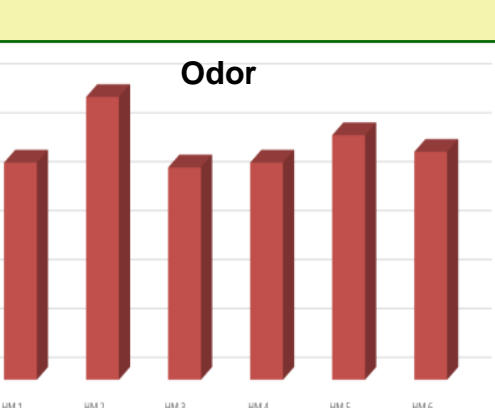
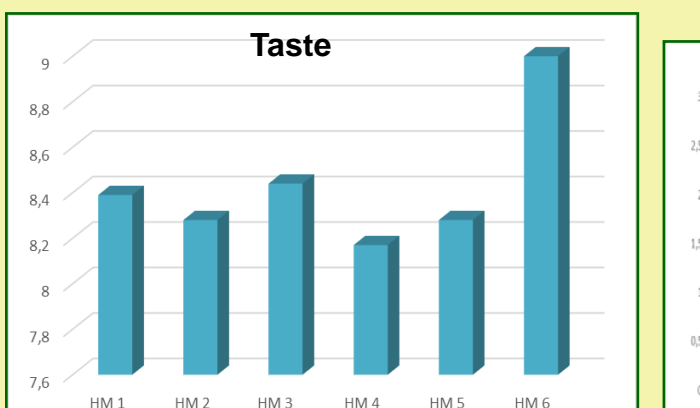
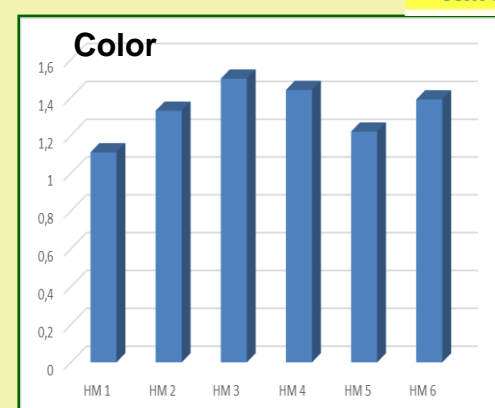
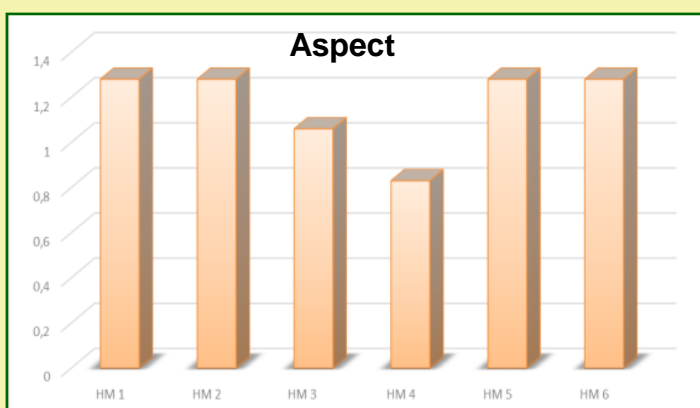
#### Obtention of mead and its sensory evaluation

Six samples of mead were obtained in the laboratory (in the 500 mL capacity bottles) using different type of honey: acacia honey, polyfloral honey, raspberry honey, wild forest and linden honey (HM1 - HM5), water, yeast and elderflower (for HM6 sample).

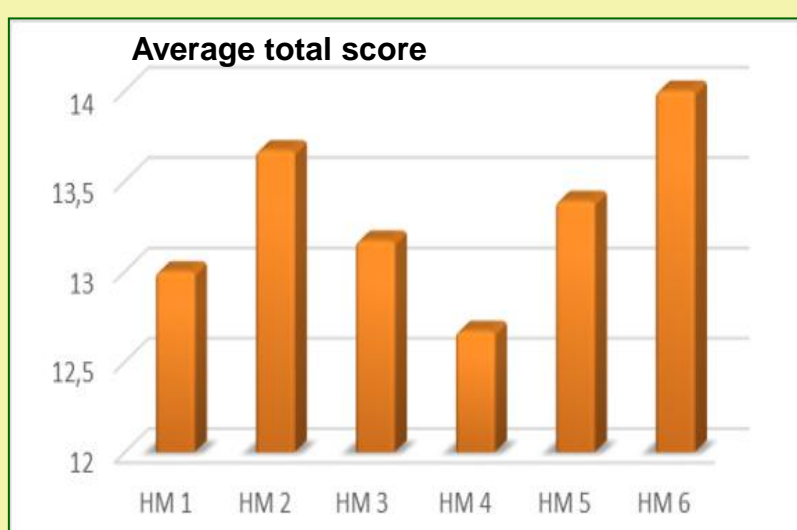
➢ FERMENTATION (8 days, RT)

➢ SIPHONING and FILTRATION

➢ MATURATION (storage at 4 °C for 8 weeks)



#### SENSORY ANALYSIS (scoring method with a 20 points scale)



#### Preparation of an innovative product based on acacia honey and GP powder in different proportions (5, 10 and 15 %) and its sensory analysis

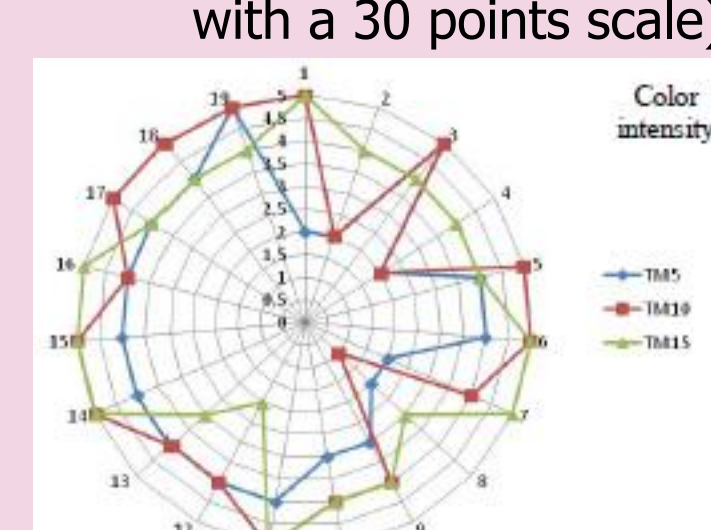
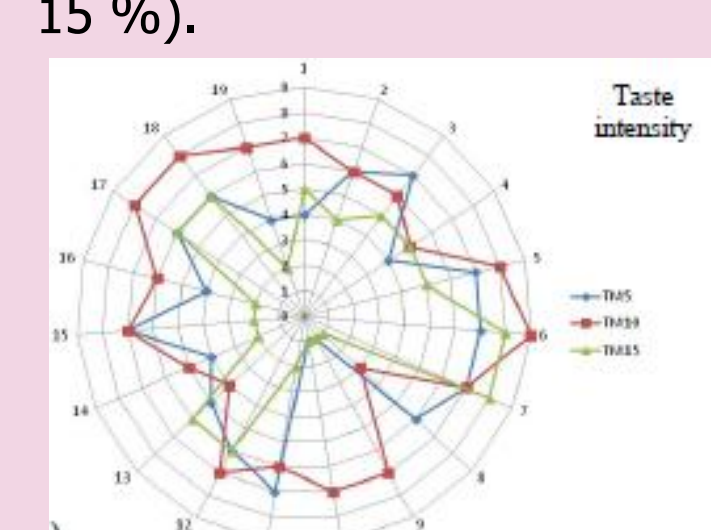


❖ The GP derived from the dark-skinned grape of the Romanian grape variety Fetească Neagră was collected immediately after the grape press and was stored at -18 °C.

❖ GP without seeds was dried in an oven at 60 °C for 16 hrs, finely crushed and then the resulting powder was sieved.

❖ The GP fine powder was suspended in acacia honey in different proportions (5, 10 and 15 %).

❖ The mixture was well homogenized and macerated for one month and then subjected to **sensory analysis** by scoring method (scoring method with a 30 points scale).



### CONCLUSIONS

The artisanal meads and the fortified innovative honey with grape pomace are well accepted by the Romanian consumers:

- the highest average total score in the sensorial evaluation of mead was obtained by the sample obtained from acacia honey with elderflower addition, perhaps given the fact that the taste of elderflower beverage is better known and appreciated by the Romanian consumers.

Acacia honey fortified with *Fetească Neagră* grape pomace powder was well received by the consumers, which is in accordance with others studies concerning cookies, biscuits, muffins fortified with GP.