

COMPARISON OF MICROWAVE-ASSISTED, SUBCRITICAL WATER, AND HIGH VOLTAGE ELECTRIC DISCHARGE EXTRACTION FOR RECOVERY OF POLYPHENOLS FROM QUINCE LEAVES

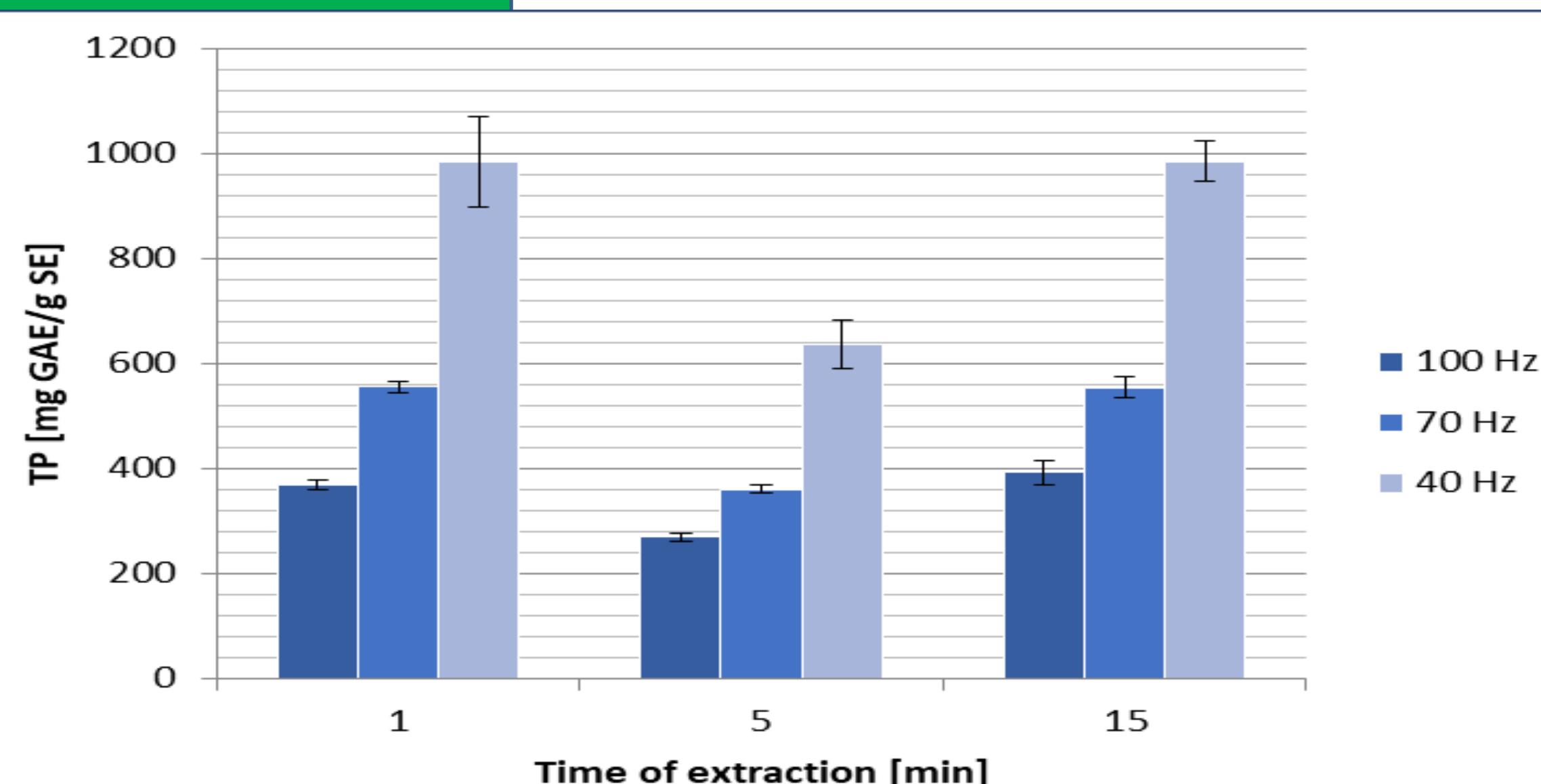
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Introduction:

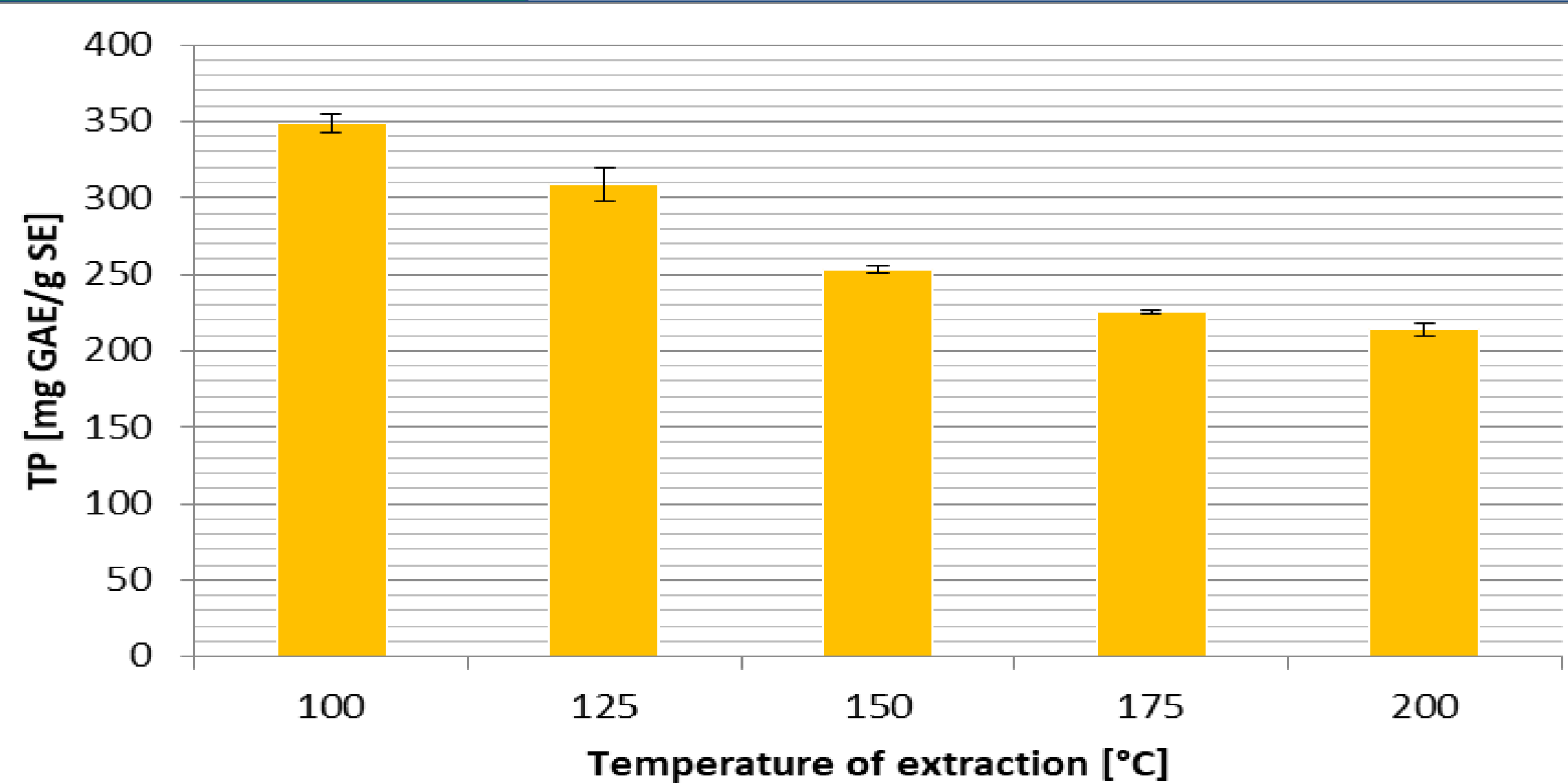
Quince (*Cydonia oblonga*) is a plant spread throughout the world with a very diverse application. While it has been shown that the fruit in addition to the fragrance and taste has dominant role in quince pharmacological activity, other parts of plant such as leafs also show significant health beneficial properties. Traditionally, the leaves were used as astringent and antiseptic, while modern medicine states that quince leaf extracts have antioxidant, antibacterial, cardiovascular, and antidiabetic activity. Considering the wide application of quince leaf extract, there is a constant need to improve the efficiency of the processes for obtaining those extracts.

Therefore, three green extraction technologies microwave-assisted extraction (MAE), subcritical water extraction (SWE), and high voltage electric discharge (HVED) extraction were used for obtaining quince extracts. Furthermore, obtained extracts were chemically characterized with the goal to determine the most adequate extraction technology.

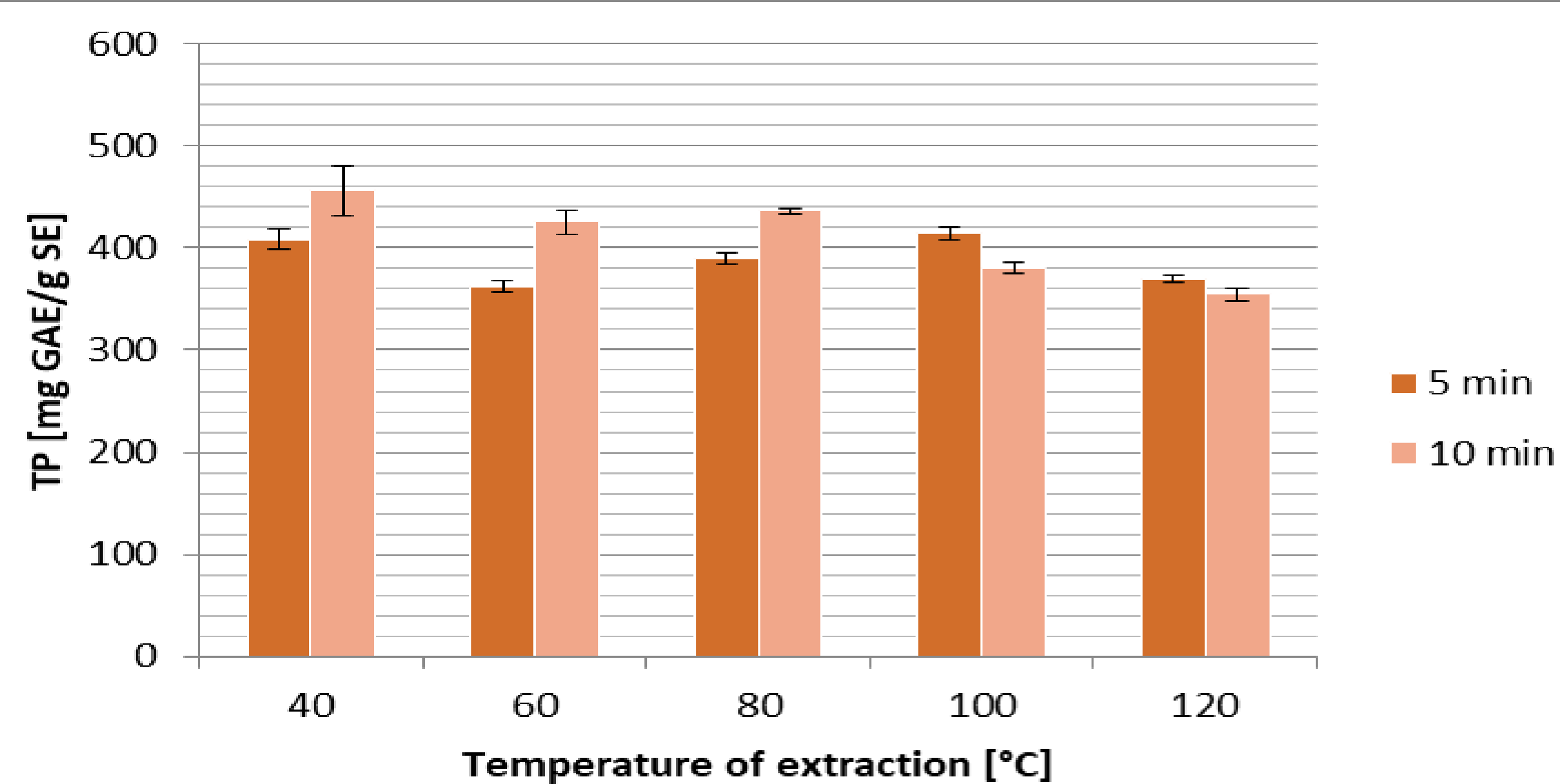
HVED



SWE

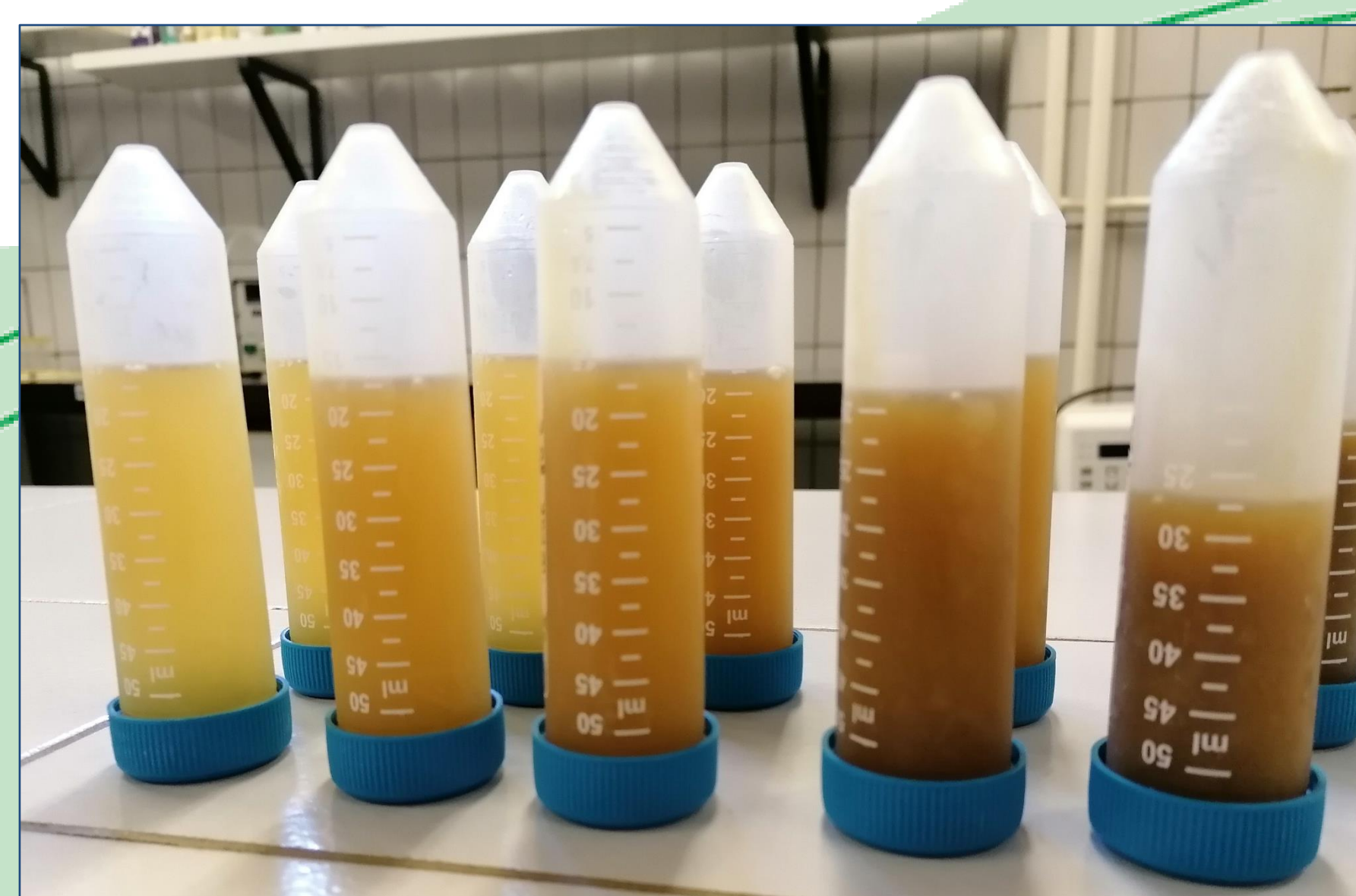
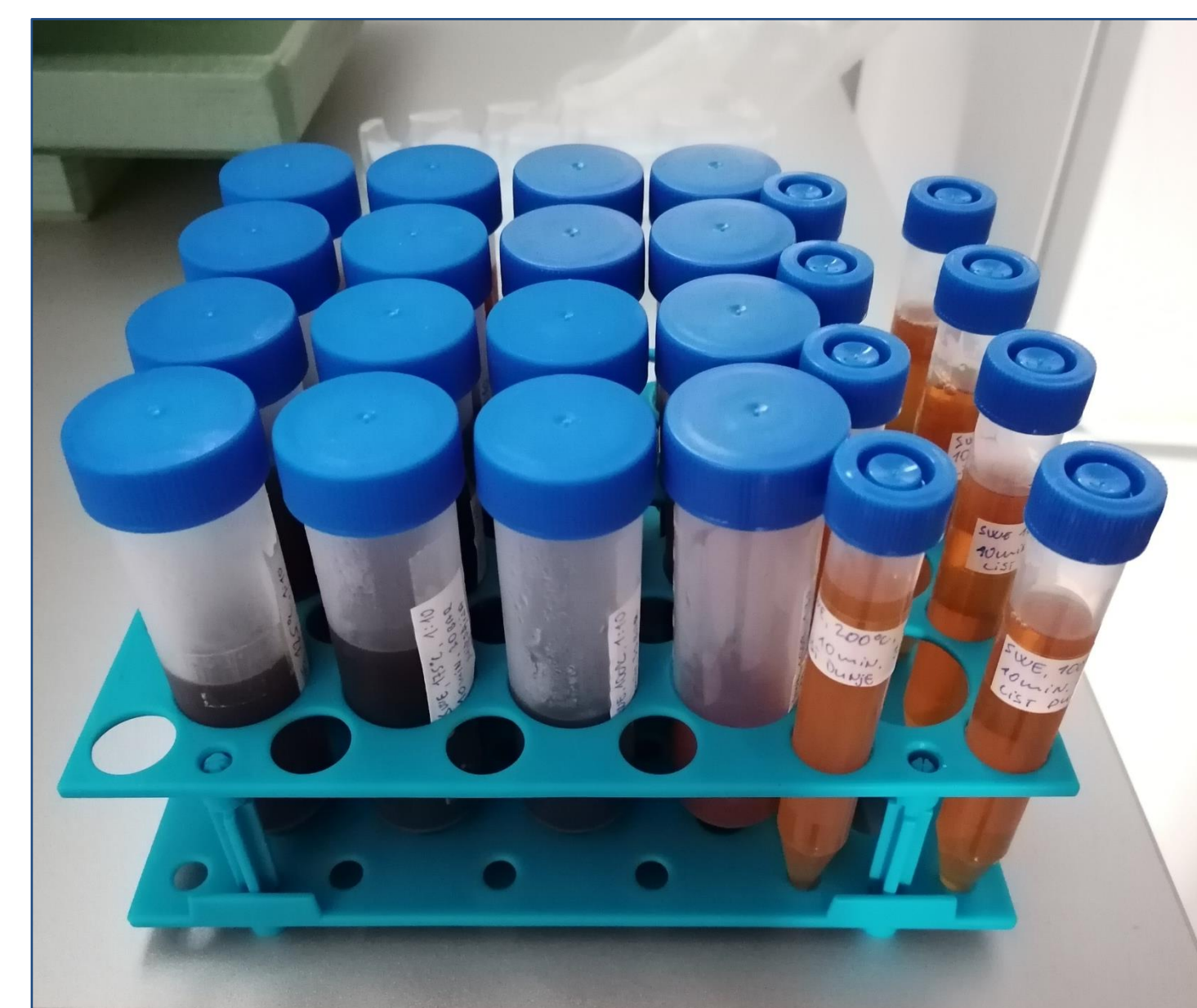


MAE



QUINCE LEAVES HEALTH BENEFITS

- 1. Treat Diarrhea
- 2. Regulates Blood Pressure
- 3. Improves Immune System
- 4. Supports Heart Health
- 5. Lowers Cholesterol Levels
- 6. Reduces Anemia Symptoms
- 7. Treats Cold
- 8. Treatment of Bronchitis
- 9. Good For Sensitive Skin
- 10. Treatment Light Burns



Conclusion:

The content of total phenols in MAE extracts was in the range 354.68-456.27 mg GAE/g DE, whereas phenols content in SWE extracts was from 213.97 to 349.12 mg GAE/g DE. Finally, HVED proved to be the most efficient extraction method, with the highest content of total phenols ranging from 269.55 to 985.17 mg GAE/g DE.