

# AGRO-CULTURE WASTE AS A SOURCE OF FUNCTIONAL FOOD INGREDIENTS

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One of the largest sector which produces highest amount of bio-waste is agriculture. Management of such waste is an important task not just from the economic point of view but also from the environmental aspect. Most of the bio-waste is disposed in landfills, in which it may transform into contaminants, pollute the surrounding environment, and produce the methane and carbon dioxide that cause global warming. On the other hand, agro-culture waste together with side streams from agri-food industry is valuable source of new bio-potent molecules that may possess valuable role in designing functional foods. Isolated ingredients from bio-waste may act as antioxidants, antimicrobials, food aromas and colorants and there is growing trend for utilization of agri-food waste as a source of such ingredients. Additionally, valorization of such waste is not just the important task for food industry but also it is in line with sustainability and environmental concerns. In line with that “green” technologies are gaining importance in agri-food sector due to the need to reduce pollution from toxic chemicals, make industrial processes safer and more sustainable, and offer ‘cleanlabelled products’ more and more required by the consumers.

In this research, poppy-cake, which represent waste in food industry, was extracted by subcritical water at elevated temperatures (120, 150 and 180°C) during the time of 10, 20 and 30 minutes. Potential of obtained extracts to be used as functional ingredients in different functional products was investigated.



## RESULTS

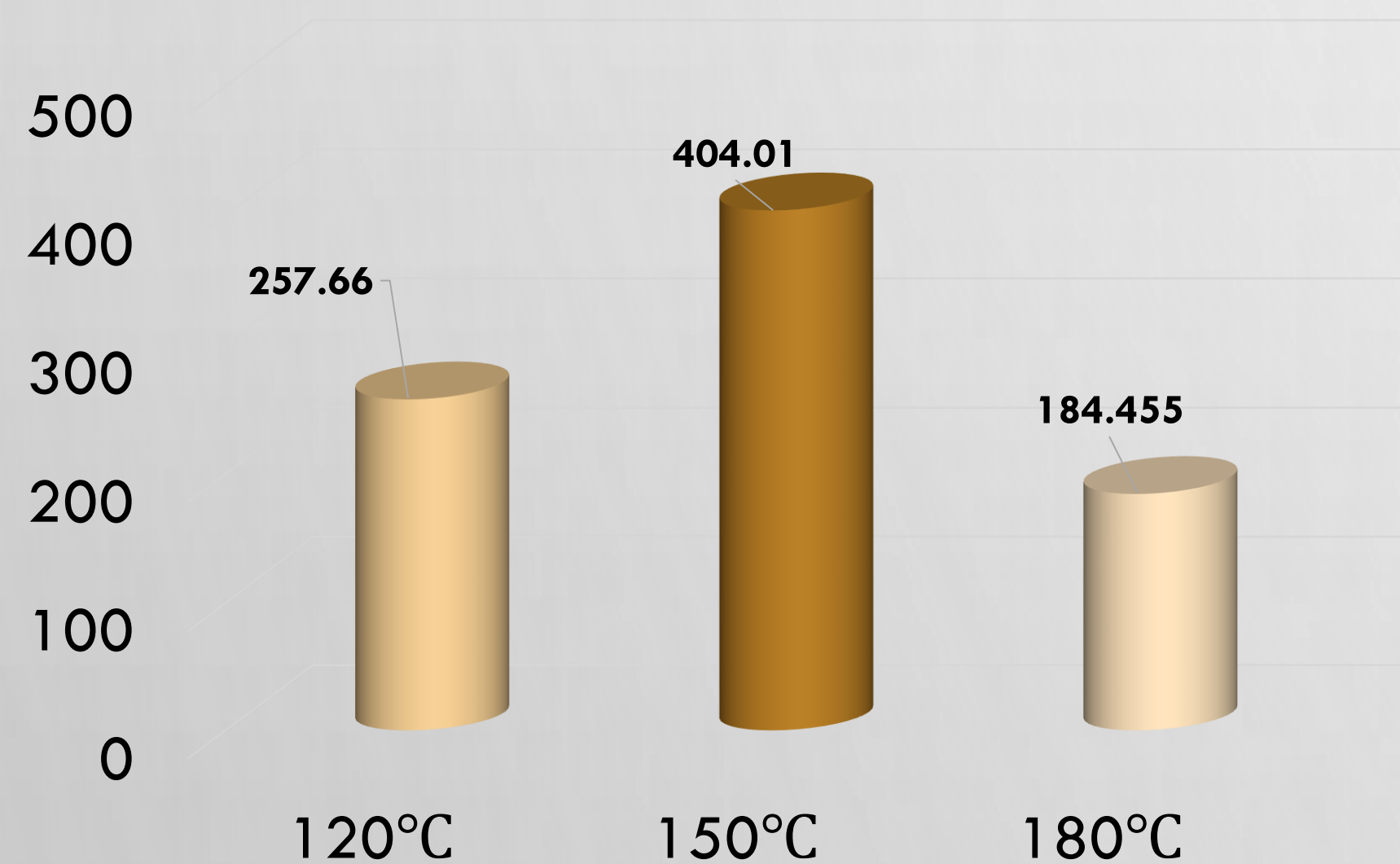


Fig.1. Total phenolic content in subcritical water extracts prepared at three different temperatures

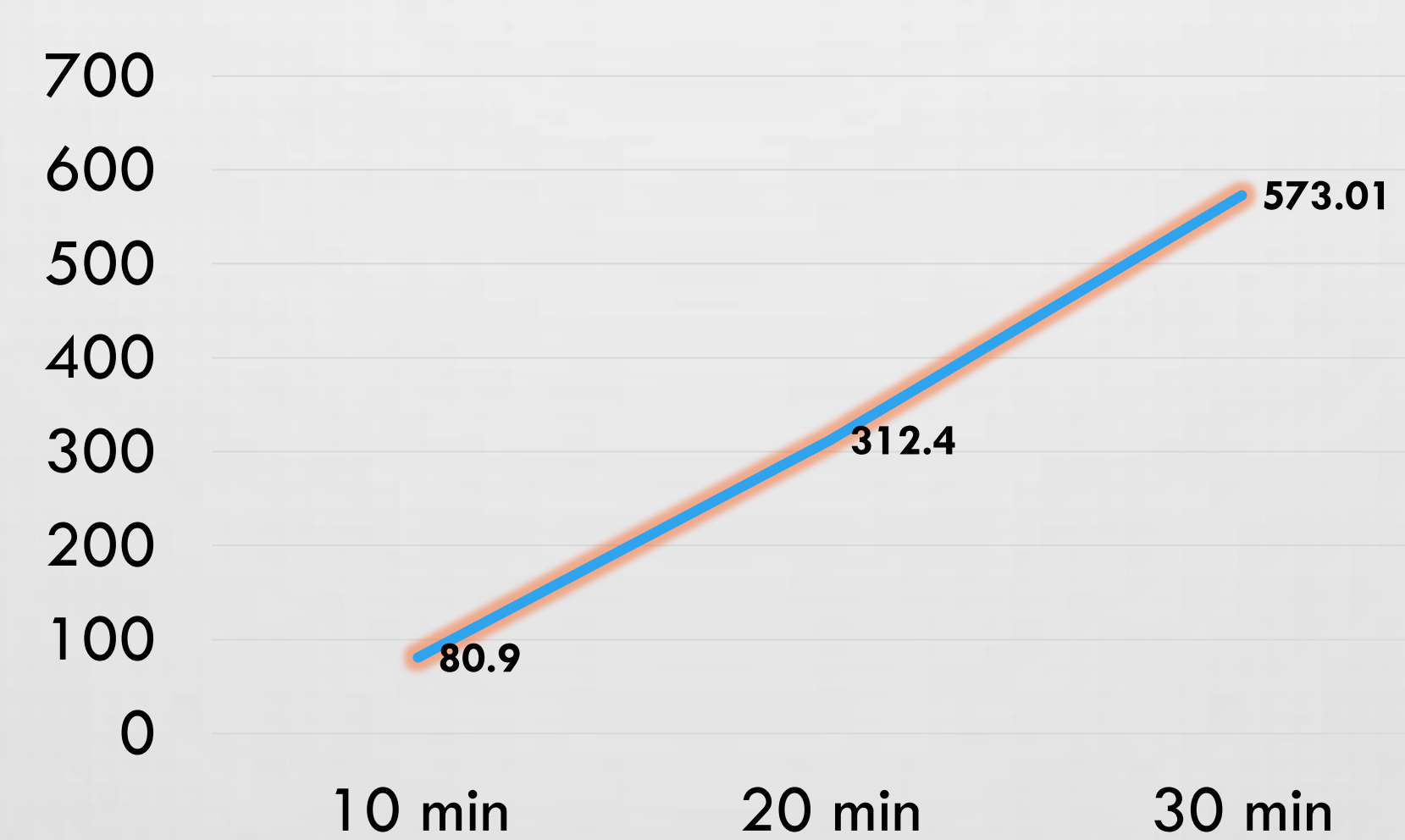


Fig.2. Influence of time on total phenolic content in subcritical water extracts of poppy-cake obtained at 150°C

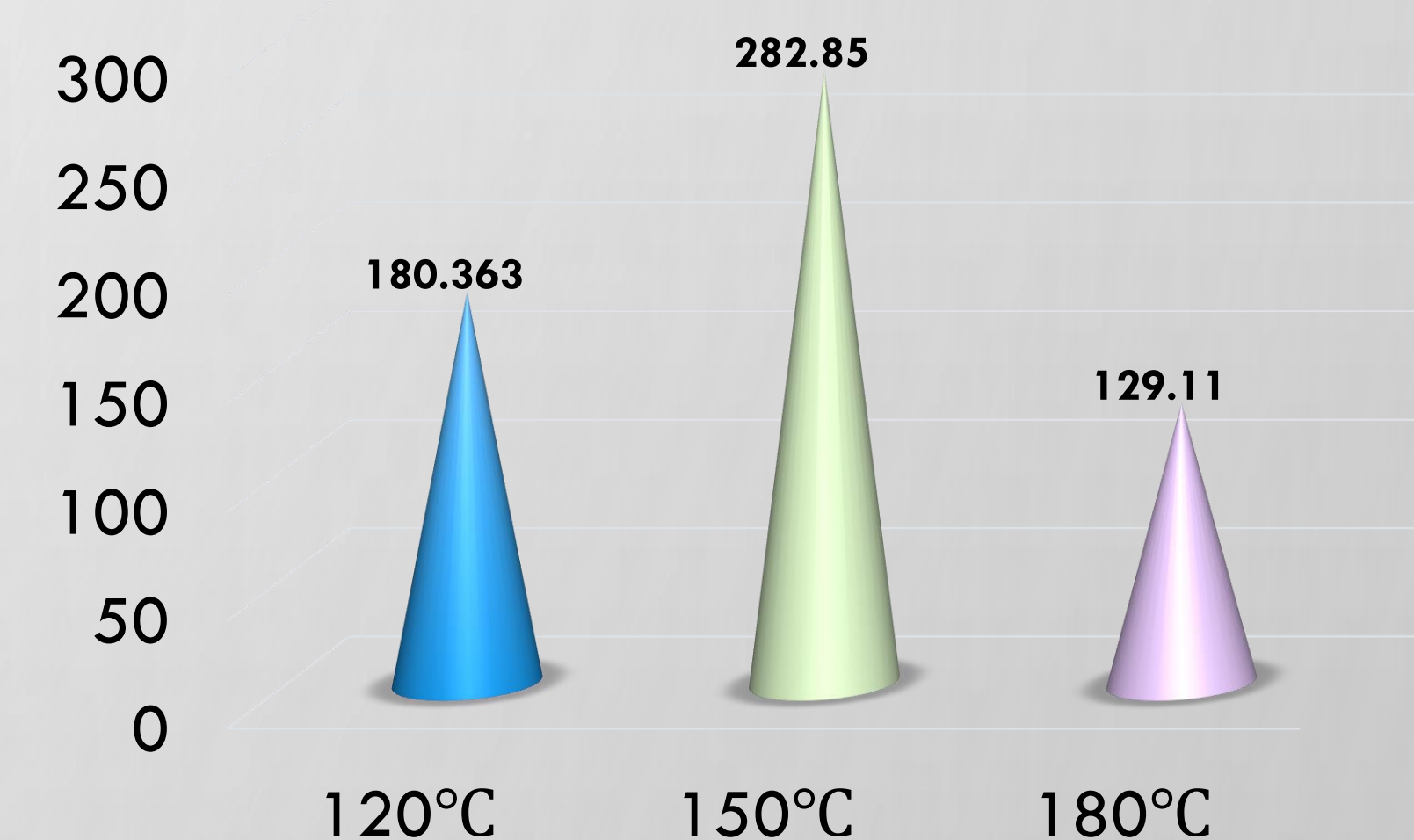


Fig.3. Total flavonoid content in subcritical water extracts prepared at three different temperatures

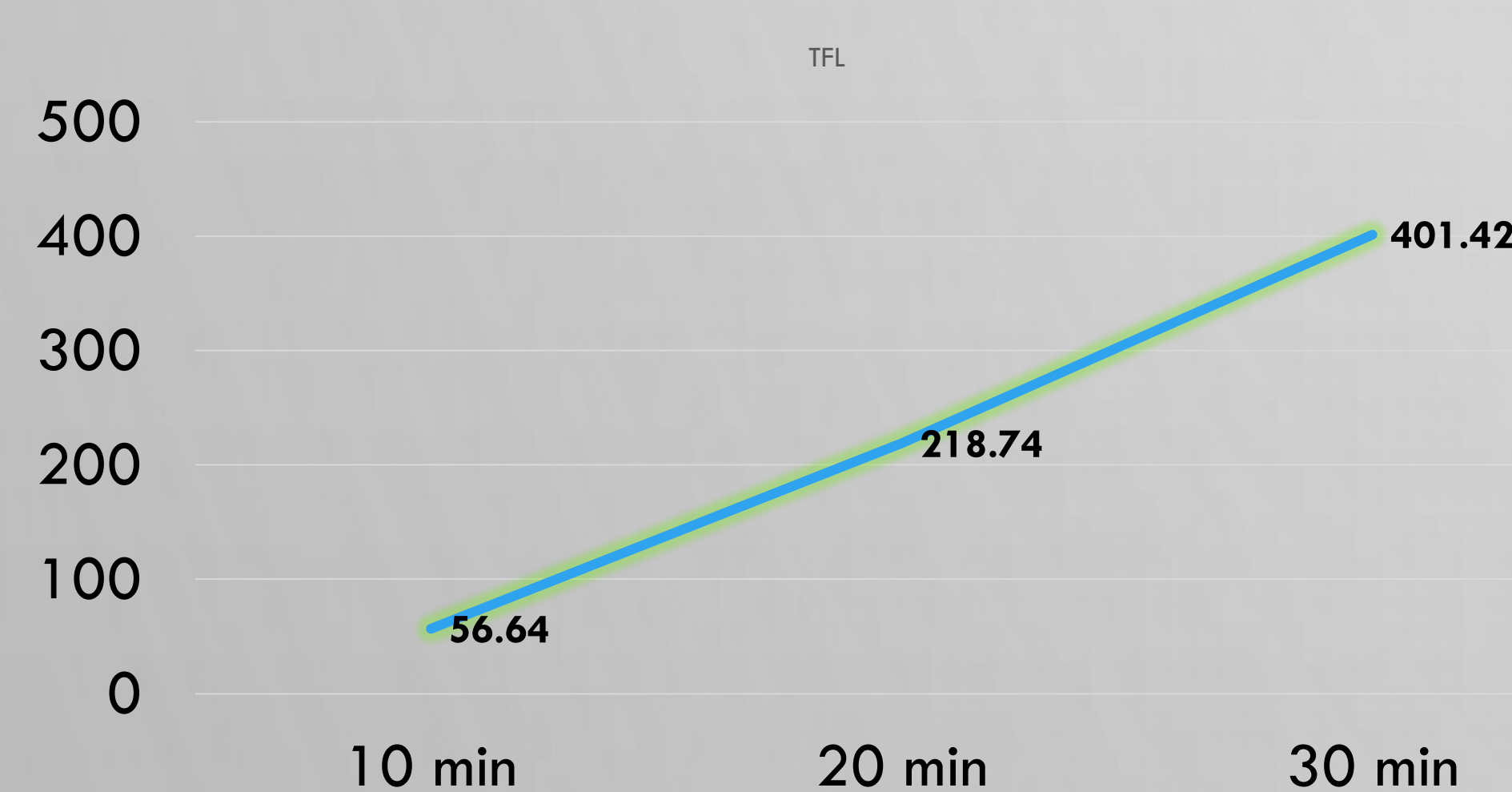


Fig.4. Influence of time on total flavonoid content in subcritical water extracts of poppy-cake obtained at 150°C

## CONCLUSION

In this research, poppy-cake, which represent waste in food industry, was extracted by subcritical water at elevated temperatures (120, 150 and 180°C). Obtained extracts were characterized in terms of total phenols and flavonoids content. Time influence on bioactive ingredient contents was determined as well. Obtained results suggest that poppy-cake, as residue from food industry, possess high potential to be used for functional ingredients isolation for different functional products preparation.

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