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IMPACT OF OAT GRAIN ROASTING ON NUTRITIONAL AND FUNCTIONAL PROPERTIES OF TWO OAT VARIETIES

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INTRODUCTION & AIM

- Oats rank around sixth in the world cereal production statistics, followed by wheat, maize, rice, barley, and sorghum. They are a good source of protein, fiber, minerals and fats.
- The two oat varieties used in this research are Bingo and Gniady. These two varieties are considered important oat crop varieties in Poland.
- Roasting, a highly valuable food processing technique, uniformly heats a product to enhance its digestibility, flavour, and sensory attributes. It also allows for desired structural modifications, making it a powerful tool in food processing.
- **The objective of this study was to determine the characteristics of the Bingo and Gniady oat varieties and compare them with their roasted and unroasted state.**

METHOD

- The quality characteristics of the oat varieties, such as fat content, were determined in detail through the Soxhlet extraction method.
- Additionally, the caloric value of oat varieties was measured using a colorimetric bomb.
- The determination of oxidative stability was a key aspect of our research, and it was achieved using the calorimetric method. This method involved the use of a differential scanning calorimeter (DSC Q20 TA Instruments) equipped with a high-pressure cell (PDSC) to record raw experimental data. The oxidation induction time was then obtained from the PDSC curves.
- The determination of fatty acid composition was determined by gas chromatography of fatty acid methyl esters (FAME).
- The research involved a controlled roasting process in a laboratory dryer at a temperature of 160°C for 20 minutes.

CONCLUSION

The oil fraction from both the Bingo and Gniady oat varieties after roasting was characterized by a longer oxidation induction time (OIT) and a higher calorific value. No significant changes in the fatty acid composition were observed after roasting.

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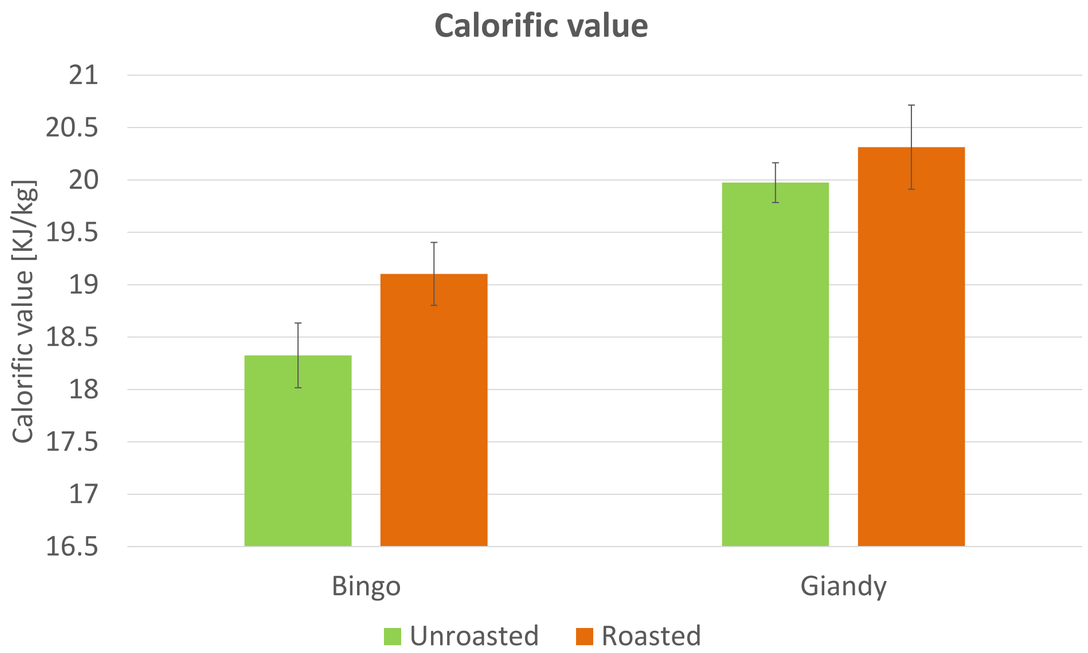
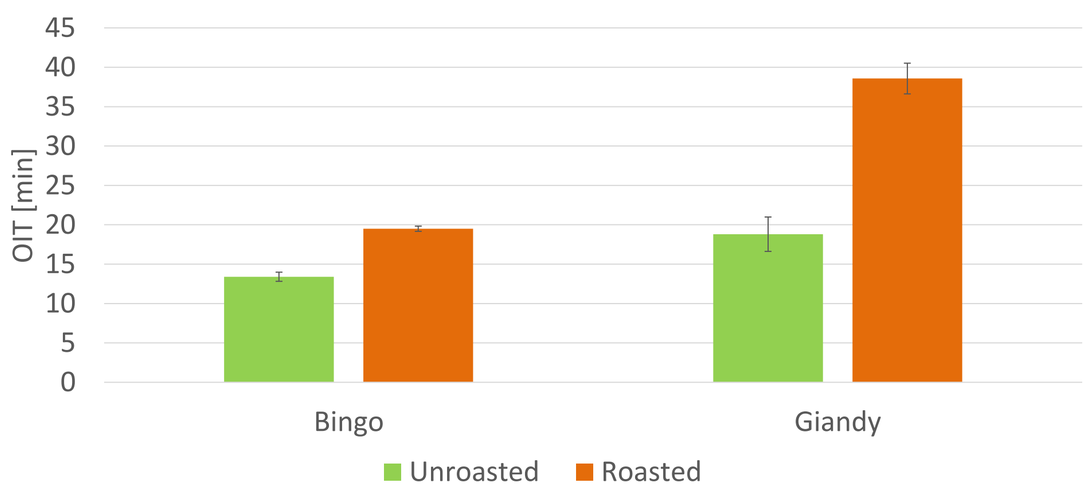
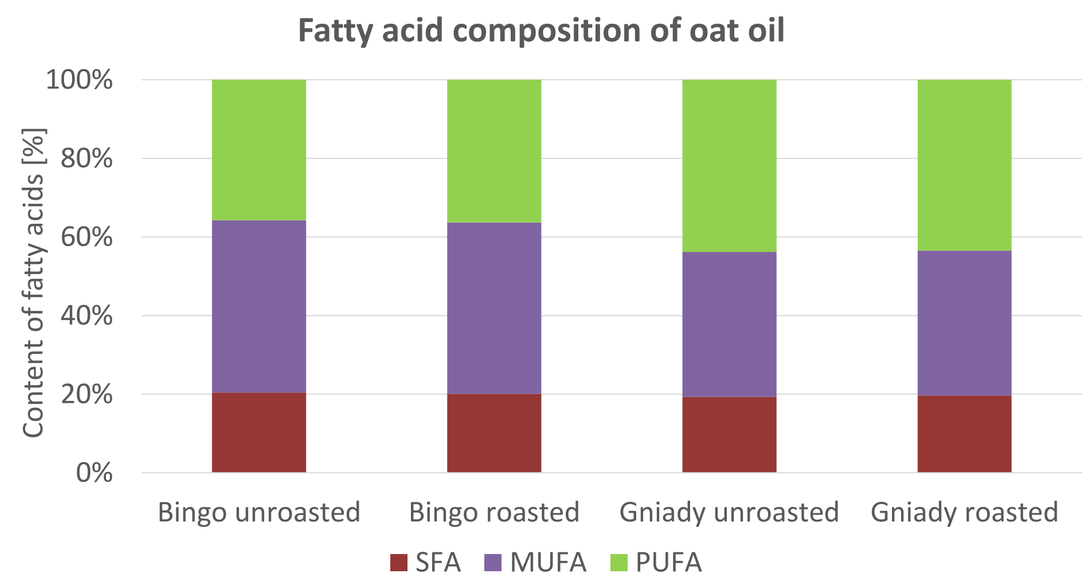
RESULTS & DISCUSSION







	Acid Value		Peroxide value	
Oat	**Unroasted**	**Roasted**	**Unroasted**	**Roasted**
Bingo	14.8±1.7	8.9±1.0	5.7±0.1	5.4±0.1
Giandy	26.3±1.0	21.2±0.1	1.8±0.2	1.3±0.1

FUTURE WORK / REFERENCES

For upcoming endeavors, the findings from this research hold significant potential for publication as a compelling research article.