



ZETA-POTENTIAL AND PARTICLE SIZE OF FUNCTIONAL ADDITIVES BASED ON GOAT MILK PROTEINS AND *Agaricus blazei* Murill EXTRACTS



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1. INTRODUCTION

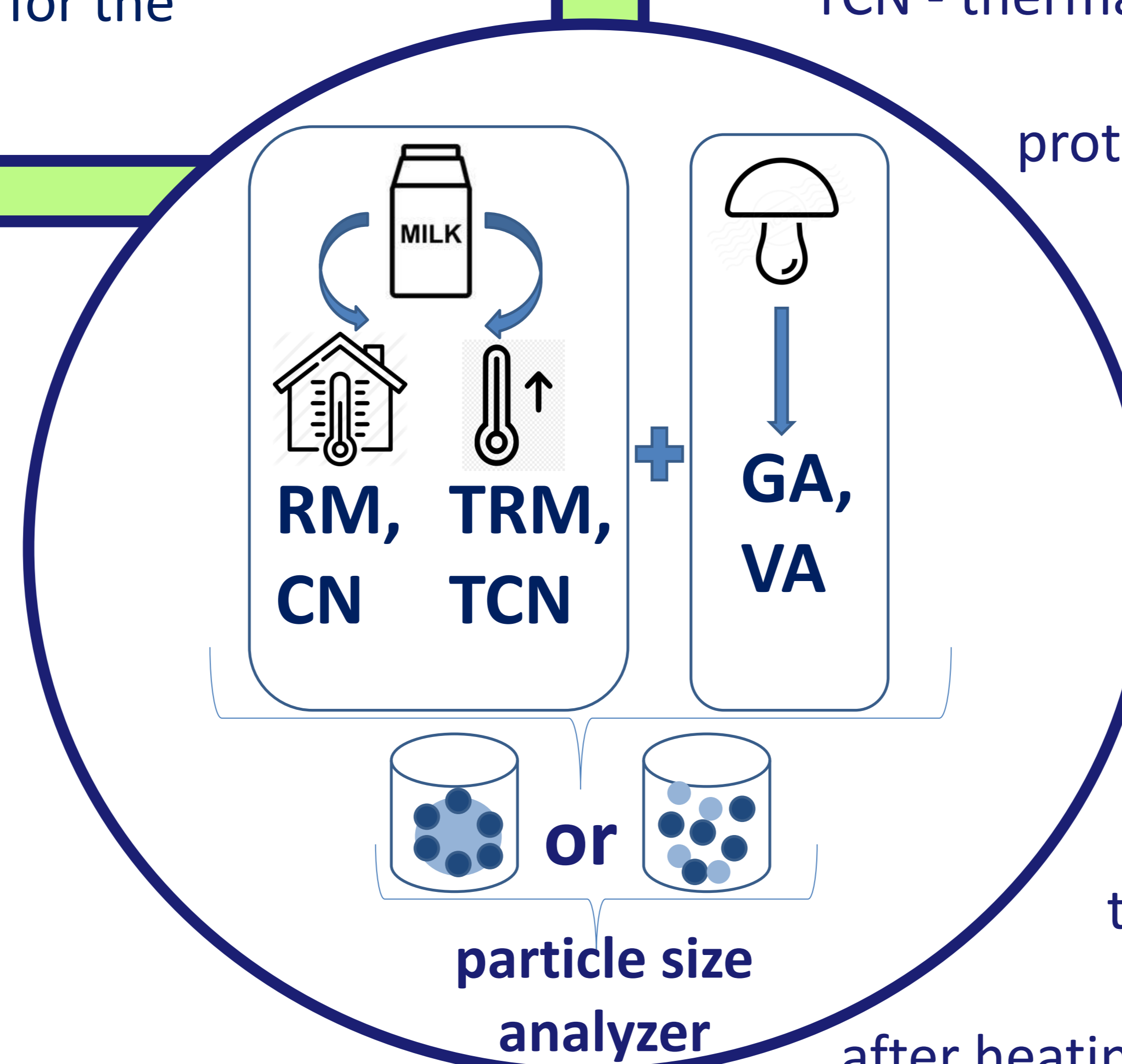
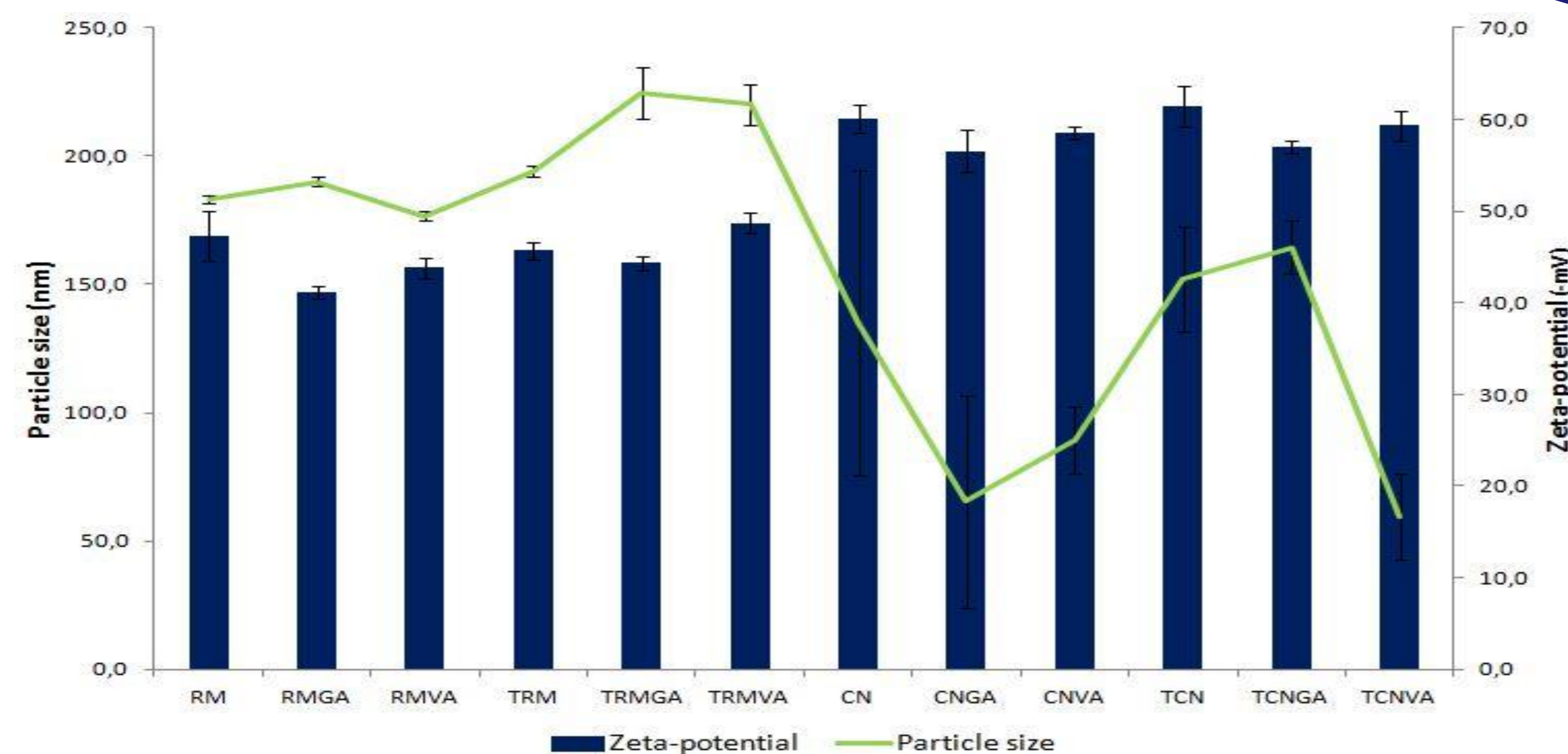
In recent years, manufacturing of functional food has gained a lot of attention. The most recent studies indicate that bovine milk proteins are suitable carriers for a whole range of bioactive substances, mainly because of their micellar structure. The results presented here are the first attempt to achieve interaction between thermally treated/untreated goat milk proteins and mushroom extracts for the development of functional additives.

2. AIM & METHODS

The aim of our study was to examine the possibility of goat milk proteins (RM - raw skimmed milk and CN - casein fraction) to deliver *A. blazei* extracts (VA - water extract and GA - glucan extract) in order to use all the potential health benefits of this mushroom. Furthermore, the effect of thermal treatment (90°C, 10 min; TRM – thermally treated RM and TCN - thermally treated CN) on carrier properties was also evaluated. The mixture of different goat milk proteins and *A. blazei* extracts were prepared and zeta-potential and particle size distribution were determined by a laser light-scattering particle size analyzer, using distilled water as a dispersant.

3. RESULTS

Particle size of TRM mixtures increased for **13.3 to 15.7%** compared to the size of TRM particles, whereas the zeta-potential of TRM/VA increased for **6.6%** compared to that of TRM. TCNs did not follow this trend. The measurement of CNs particle size distribution showed the presence of significantly different sizes (coefficient of variation >30%), whereas the zeta-potential measurements were stable.



4. CONCLUSION

The best results were obtained with the **RM and TRM mixtures**. It can be concluded that changes of particle size and electric charge of the micellar surface occurring in goat milk after heating have a **positive impact** on carrier properties. These results imply that the **measurements of zeta-potential cannot be interpreted without the particle size data**.

5. REFERENCES

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