

INFLUENCE OF DAIRY PRODUCTION SYSTEMS ON MILK FATTY ACID AND MINERAL PROFILES

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INTRODUCTION & AIM

In recent years, there has been a diversification of dairy production systems, with the emergence of practices such as robotic milking, pasture-based milk, and organic production. The objective of this study is to evaluate how different dairy production systems affect the fatty acid and mineral profiles of milk.

METHOD

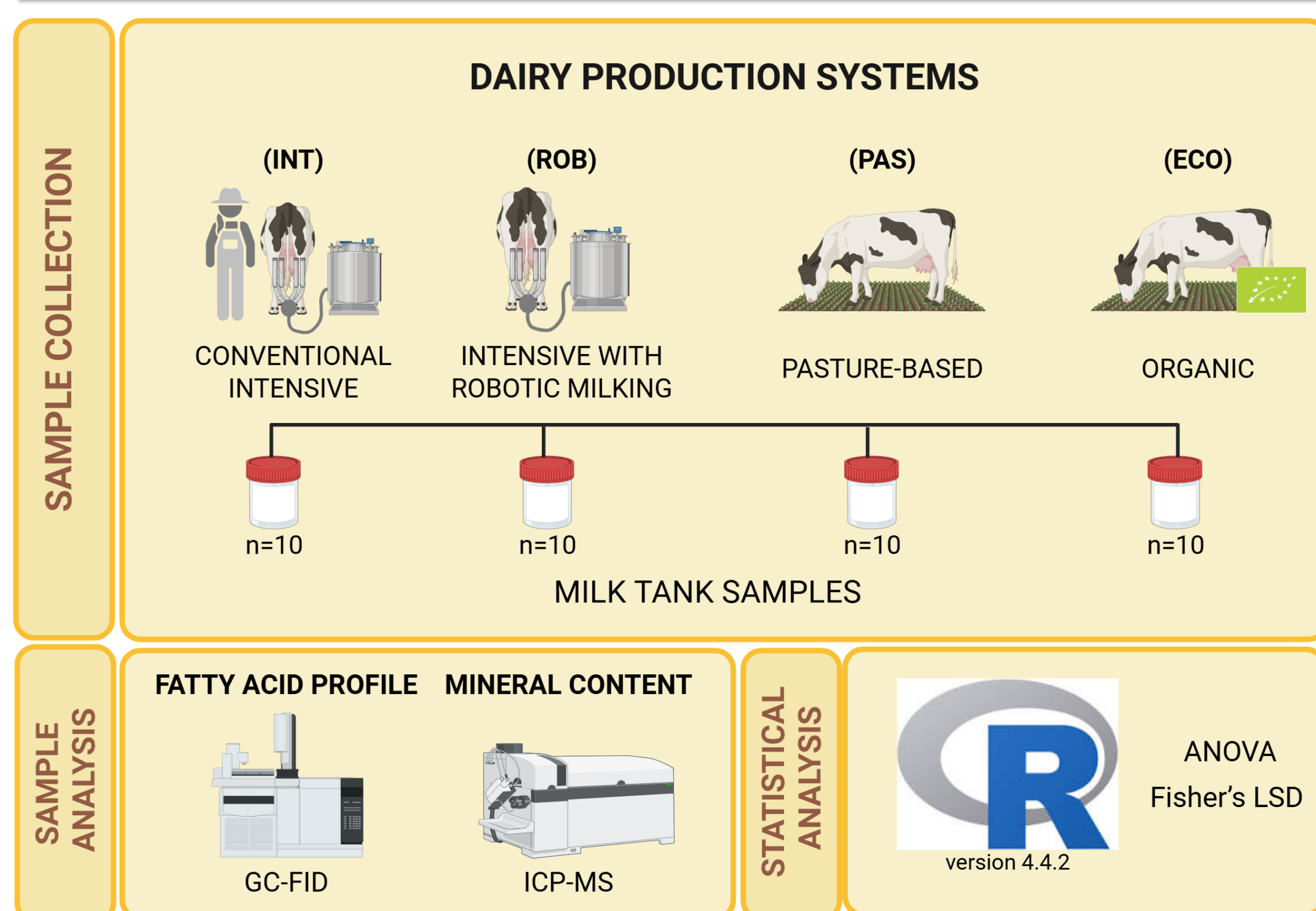


Figure 1. Sample selection and analysis

RESULTS & DISCUSSION

FATTY ACID PROFILE

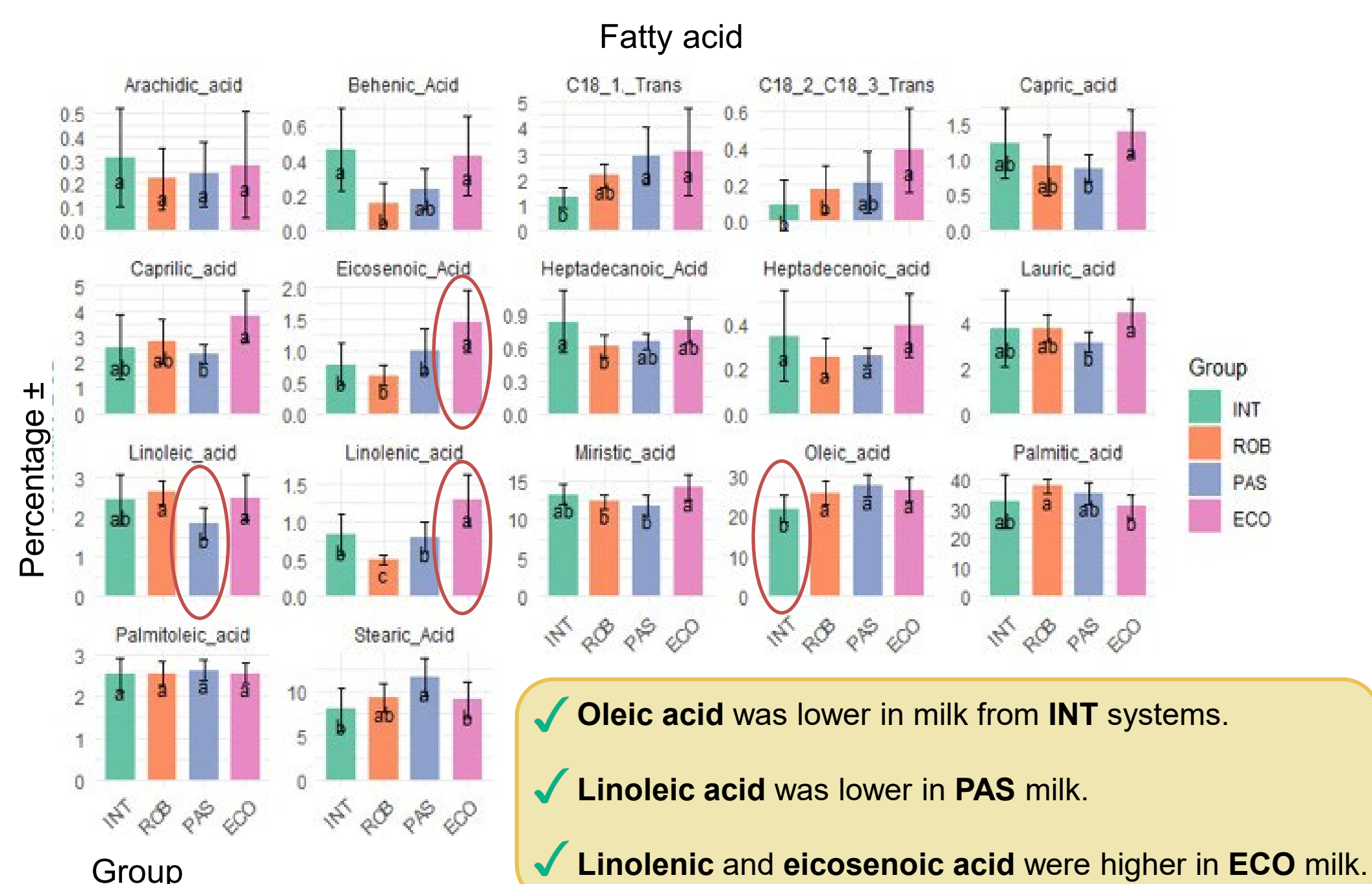


Figure 2. Fatty acid profile

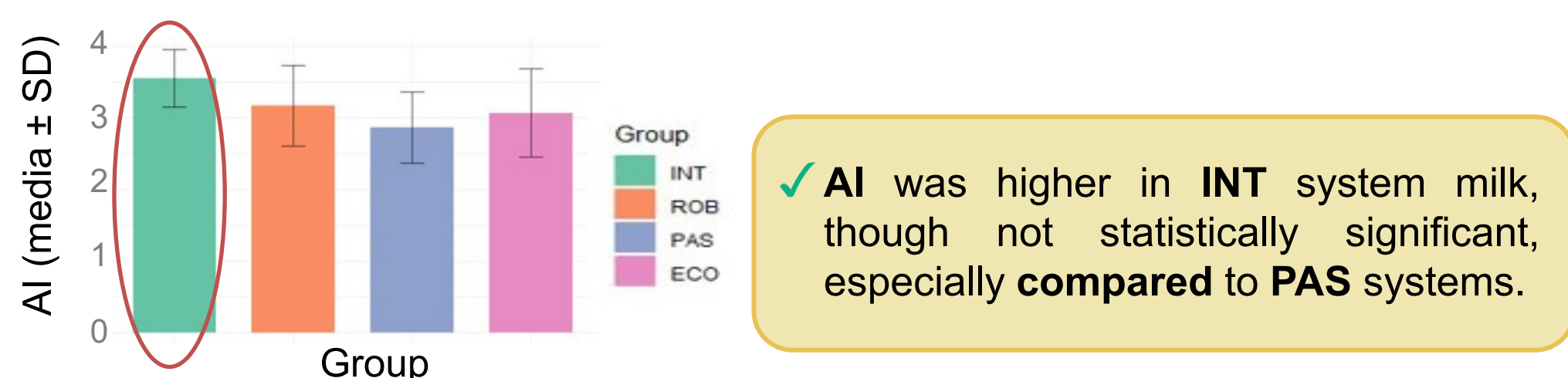


Figure 3. Atherogenic Index by group

RESULTS & DISCUSSION

MINERAL CONTENT

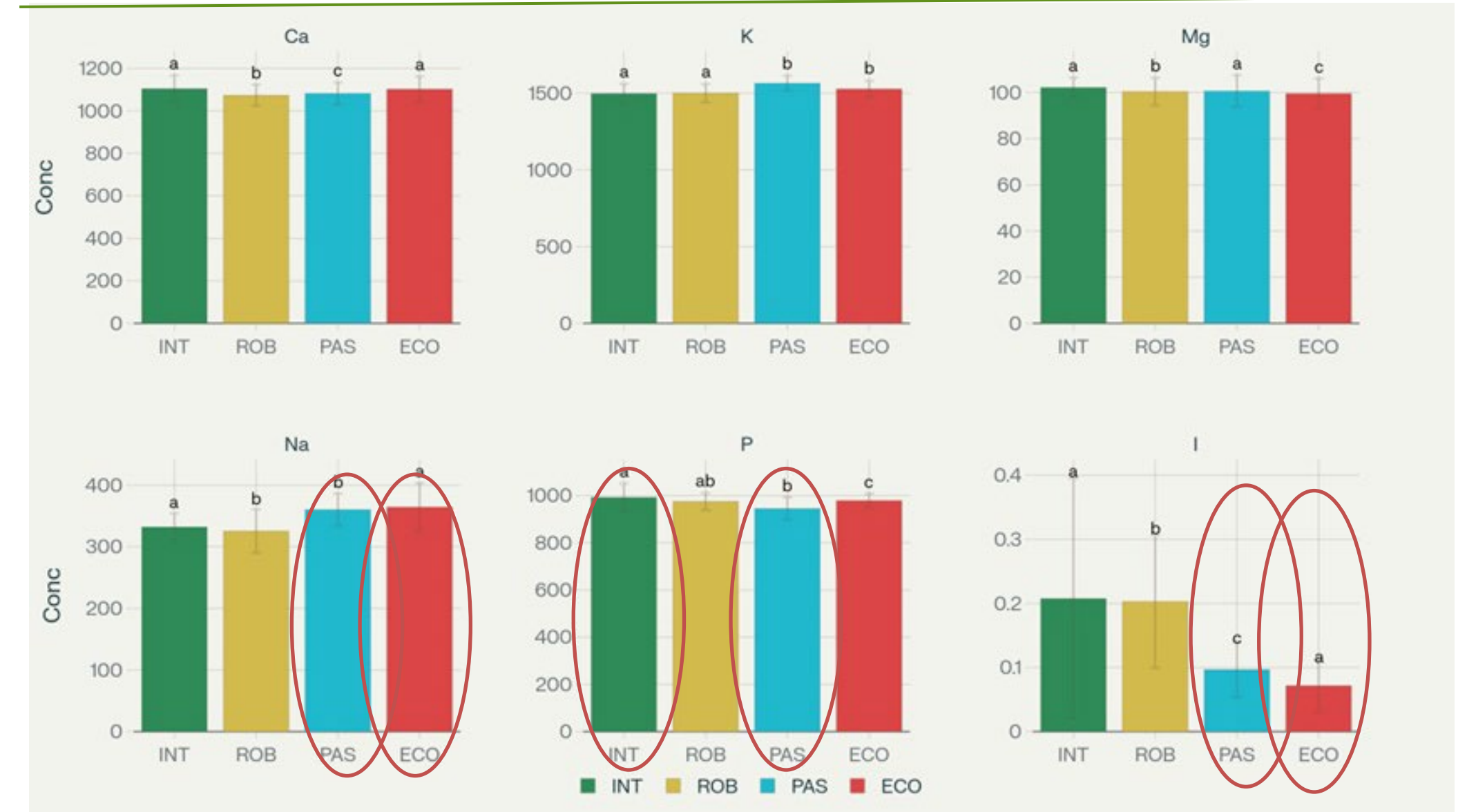


Figure 4. Mineral content by group

- ✓ Sodium was significantly higher in ECO (364.51 ± 38.73) and PAS milk (360.42 ± 25.87 mg/kg).
- ✓ Phosphorus was lower in PAS milk (945.09 ± 47.92) compared to INT (991.95 ± 58.56 mg/kg).
- ✓ Iodine was significantly lower in ECO milk (0.07 ± 0.04) and PAS milk (0.10 ± 0.04 mg/kg).



Figure 5. PCA biplot milk systems

CONCLUSION

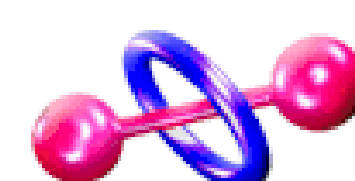
The type of dairy production system has a clear impact on the nutritional profile of milk. Identifying the optimal production conditions to achieve the best nutritional profile may help improve consumer health.

FUTURE WORK / REFERENCES

Future work could explore how seasonal changes and feeding practices affect milk composition across systems. Linking these biochemical differences to sensory quality and consumer preferences would also add valuable insight.

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