Investigations on the use of trace elements for authentication of the origin of poultry and dried beef meat

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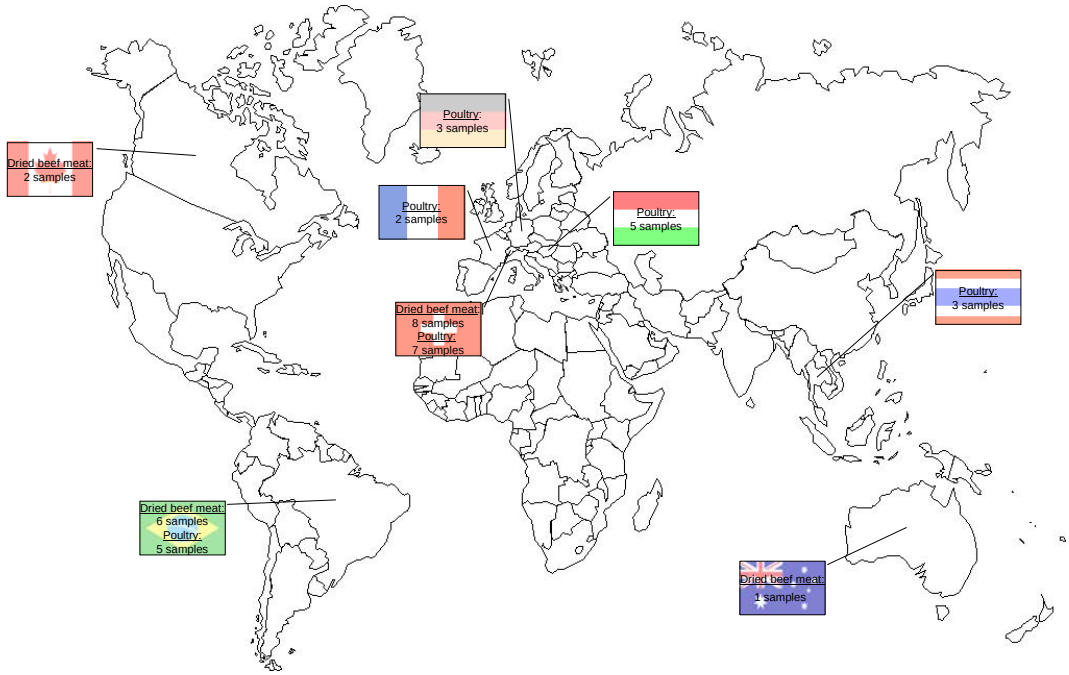
Aim of the investigations: to determine the geographic origin of poultry and dried beef meat by analysing their trace element profile



Method:
- micro-wave assisted pressure digestion with nitric acid
- analysing with a sector field ICP-MS (Element 2, Finnigan MAT, Bremen, D)
  → 75 elements/isotopes analysed in different resolutions
- measurements validated with certified reference material (lyophilized bovine muscle: BCR-CRM 184, NIST-RM 8414)

Results:
- differentiation between Swiss and foreign samples possible by analysing trace elements
- poultry: Ca, Tl
- dried beef: differentiation according to origin of raw meat: Li, Rb, Tl

Conclusion:
- relatively good differentiation in both commodities, which could be improved by combination with other analytical methods and by analysing more samples

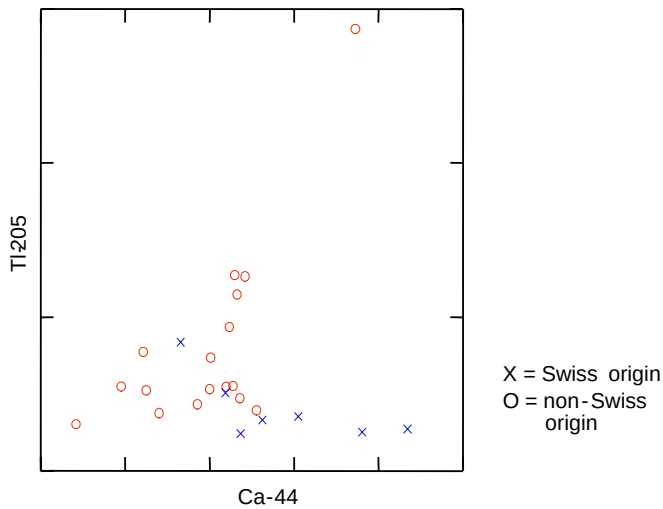


Figure 1: Differentiation of poultry by its geographic origin using trace elements

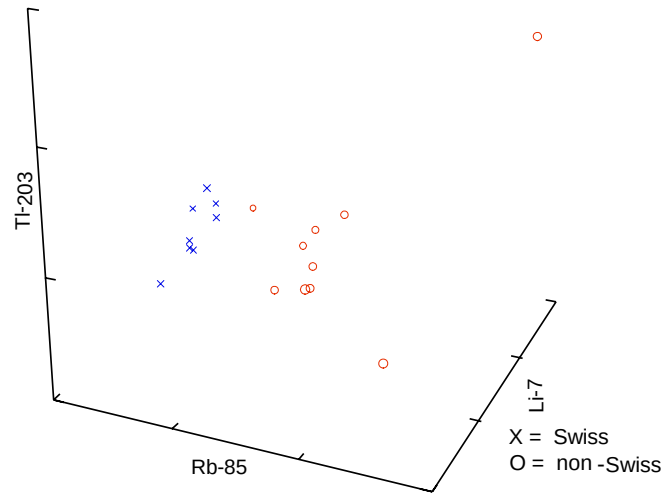


Figure 2: Differentiation of dried beef by its origin of raw meat using trace elements

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