Critical points in small-scale facilities producing traditional fermented dry sausages

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Context
- Small producers experience technical and financial difficulties in complying with official food safety regulations. For example, hygienic standards, generally defined for large processing plants, are not always compatible with such small production units.
- Fermentation of traditional sausage is usually not controlled. It relies on natural contamination by environmental flora. Each small-scale facility has a specific house flora composed of useful microorganisms for the fermentation and flavor of sausage. But spoilage and pathogenic flora are also present.
- Data available on the description of traditional dry-sausages manufacturing processes and of traditional workshops diversity in the European regions are limited.

Objectives
- Quality instead of quantity is now a priority for Europe. In the White Paper on Food Safety (2000), a set of proposals put the primary responsibility for food safety with food business operators right through the food chain was defined. This project is a part of the European project "TRADISAUSAGE".
- The major objectives of this project are:
  1. To evaluate and improve safety of traditional dry sausages from the producers to the consumers while preserving their typical sensory quality.
  2. To identify the hazards associated with traditional sausages and to evaluate information on process conditions leading to safety risks in order to define the critical control points (CCPs) in a HACCP plan.

Methods

Results

According to criteria attributed to each item in the questionnaire, the maximum score that can be obtained is:
- Part I: 61 points. Workshop exhibiting score below 30 are classified as "insufficient".
- Part II: 50 points. Workshop exhibiting score below 30 are classified as "insufficient".
The obtained results have been used to evaluate information on process condition leading on safety risks in order to classify the workshops.

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Part I: 80% of studied workshops had the adequate infrastructures for the implementation of an auto control system. Part II: 80% had an efficient hygienic program on the equipment workshops.

Microbial analysis
50% of workshops have between 3 to 6 log CFU/100cm² of Enterobacteriaceae. These contaminations were mainly localised in majority on cutting table, knives and stuffing machine.
In the hygienic evaluation of dry sausages, 10% of workshop presented a level of pathogens above the limit (L.monocytogenes < 100 CFU/g or S.aureus < 10000CFU/g).

Conclusion

Despite the authority approved the plan, and the correct premises and equipments, hazards exist regarding:
- the hygiene practices of personnel, the respect of no cross lines
- the cleaning-disinfectant plan
- the control of process temperature and RH but also the length of some steps (ex: desalting of casing)
These points have to be improved in order to reduce cross-contaminations and development of alteration or pathogen flora.

Perspectives

Concerning the other European workshops, a statistical analysis of all the result is in progress in order to identify the safety hazards associated with traditional sausages manufacturing. The data from this project will be useful to establish clear recommendations to traditional producers. They will strengthen the viability and competitiveness of the agricultural sector in UE and improve the living conditions and economic opportunities in rural areas.