THE TRADITIONAL TASTE OF INNOVATION: THE EXAMPLE OF THE VENETO REGION

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I. INTRODUCTION

In recent years consumers' interest in local, traditional and "short supply chain" products has considerably grown, probably due to the diffusion of the "One Health" approach, which has in its objectives also the rediscovery of small production realities and the improvement of the connection between human activities and nature, increasing the value of outdoor activities and preferring local foods, with the added benefit of avoiding long unsustainable transports. In the Veneto region these peculiar productive units, called Piccole Produzioni Locali (PPL), have been regulated by a specific legislation[1] and promoted by a dedicated website[2]. The increased consumption of traditional and low processed foods may have some downsides related to increased health risks, especially due to potential foodborne pathogens contaminations. In 2009, Veneto region and Istituto Zooprofilattico Sperimentale delle Venezie (IZSVe) started a joint project aimed at evaluating PPL realities, with a plan of controls to ensure the safety of their products and to support producers in promoting their local specialties. Participating in this specific sampling plan, the producers collaborated with the competent authorities (CA) to assess the microbiological risks of their products due to: the inhomogeneity of the raw materials, the great diversification of the productions, the limited use of additives and the traditional production techniques used. The aim of the present work is to describe the main results obtained within this project over the period 2010 – 2021 in pork products. This is an example of valuable integration between CA and small food producers to promote the distribution of safe local products.

II. MATERIALS AND METHODS

Annually, in the framework of the PPL project, IZSVe performed a risk assessment analysis in order to define the sampling plan for the products included in the project. In particular, as regards pork meat products, food operators had to collect data about specific process parameters, such as temperature and humidity of the seasoning rooms and products weight loss. Furthermore, CA collected samples of raw mixture for every production batch and sent them to IZSVe to be tested for detection of *Salmonella* spp. and *Listeria monocytogenes (Lm)* and, in case of positivity, its quantification. If one of these pathogens was detected, a new sample was taken after the batch was seasoned up to achieve a weight loss of at least 25%, which indicatively corresponds to an a_w value lower than 0.92. If the pathogen was no more detected, the batch was considered suitable for selling, otherwise seasoning proceeded until the product became negative according to additional microbiological tests. Table 1 describes, as an example, the sampling plan applied.

III. RESULTS AND DISCUSSION

At the beginning of the project, sampled pork products (e.g. salami and soppresse) were tested for an extensive panel of microorganisms, along with the monitoring of pH and a_w during all the phases of production, drying and seasoning of pork products. After the statistical evaluation of the first results (data not shown), it was concluded that the most informative parameters to define the compliance of pork products were *Salmonella* spp. and *Lm*, so the further analyses included the last microorganisms. Figure 1 and 2 show the results of *Salmonella* spp. and *Lm* detection in raw mixtures tested over the period 2010 – 2021. In most cases, after two months of seasoning, positive raw mixtures had an a_w

value lower than 0.92 and the pathogen was no longer detectable. The favorable outcome of the analysis gave the opportunity to the producers to sell safely their products in the local market. In sporadic cases, the presence of the pathogens was still found after months of seasoning, so for these specific cases the positive batches were destroyed. Overall, the results of this extensive project demonstrated that, if properly managed, PPL products have a microbiological risk comparable to analogous industrial products and the intensive sampling activity implemented in the framework of the current project guarantees that every commercialized batch is suitable for consumption.

Table 1: example of the sampling plan carried out by the CA for pork product

Matrix	Sampling	Analytical tests	Notes
Raw mixture (fresh salami)	1 representative sample (about 200 g) for every production batch	• *Salmonella* spp. detection • *Lm* detection • *Lm* quantification (only if presence)	If positive, the product is seasoned and additional samples are collected
Seasoned product	1 sample for every positive batch produced with positive raw material	• Detection of the pathogen previously identified in raw materials • a_w	If positive, the batch continues seasoning and new samples are collected along the seasoning period

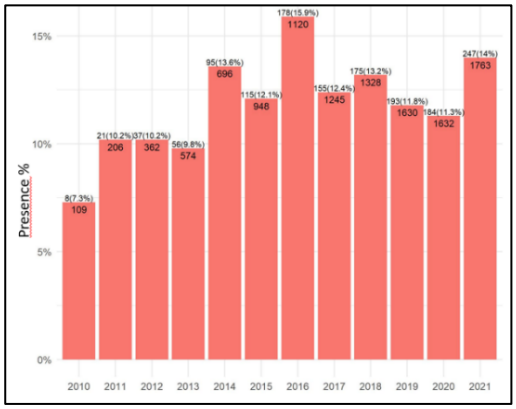

Figure 1: Number of tested and *Lm* positive (number and %) raw material samples (2010 – 2021)

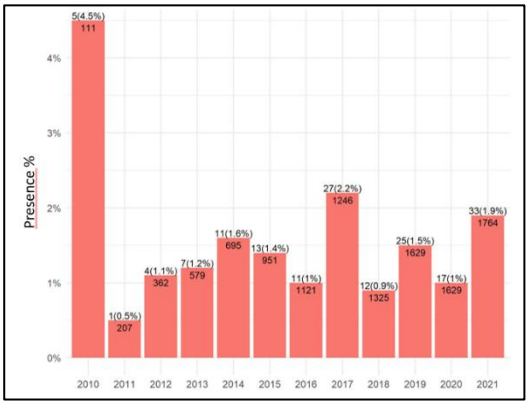

Figure 2: Number of tested and *Salmonella* positive (number and %) raw material samples (2010 – 2021)

IV. CONCLUSION

The PPL project made possible to reach a high level of food safety in local productions distributed in the Veneto Region. The amount of positivity for *Lm* and *Salmonella* spp. in raw pork materials stood at around, respectively, 11.8% and 1.5% during the years 2010 – 2021. Nevertheless, all the positive products were identified before being placed on the market and positive batches were marketed only after further verification of their negativity as a result of prolonged seasoning. To date, there have been no reports of episodes of foodborne illnesses linked to the consumption of PPL products occurred during this period in the Veneto region. At the beginning of the project, only pork and derived products were included in the sampling plans, and animal faeces at farm level and food contact surfaces were analysed to obtain a thorough screening of microbiological safety along the entire production chain of the local products of interest. In the following years, the project was extended to other typical products such as jams, fruit juices, vegetable preparations and dairy products. In 2022 a national law[3] based on the Veneto region experience was approved, in order to define PPL and to regulate their trade at national level. Since PPL are gaining importance for the consumers, this law could give PPL project implemented by the Veneto region the opportunity to become a repeatable and validated model for similar products distributed in other geographic areas.

REFERENCES

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