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Salmonella spp detection in soybean meal samples from crushing plants in Brazil

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Introduction

Salmonella spp presence in raw vegetables materials used in animal feed can occur from contaminated environments, as the water and soil². Excrements of animals also represent a source of contamination for the agricultural products^{2,3,4}. Among the vegetables matrices that *Salmonella* can be found soya and its by-products deserve highlight, due to the economic importance and broad utilization in the nutritional management of animals.

In this study, *Salmonella* spp presence was analysed in soya meal from three Brazilian crushing plants.

Material and methods

Sampling of soya meal was done in a weekly base. Every week each soya meal plant sent samples collected from different points of the three processing plants (crushing Plant A, B and C) including sampling from expedition, transportation in the trucks and during the storage in the port of exportation (Figure 1). For the analysis was used the Modified Semisolid Rappaport Vassiliadis method (MSRV), Draft Annex D of ISO 6579:2002¹.

The presuntive *Salmonella* spp obtained in selective plates (XLD and BGA) was submitted to biochemical tests including API 20E and then positives strains, sent to Brazilian Institute (FIOCRUZ) for serotyping.



Figure 1: Sampling and Analysis for *Salmonella* in Brazil

Results and Discussion

The results show the presence of *Salmonella* spp in 72 (11.2%) of the 642 samples of soybean meal collected at crushing plants (Figure 2). Eighteen *Salmonella* serotyping were identified (Figure 3). All the positives samples were collected at the processing plants, in the warehouse area, expedition and during storage at the exportation port. Warehouse (shovel loader), Expedition (floor - the load line) and Expedition (floor loading platform) were the points where *Salmonella* spp was more frequently isolated at Crushing Plant A and Crushing Plant C, respectively.

Some improvements must be taken to ensure the quality of Brazilian products

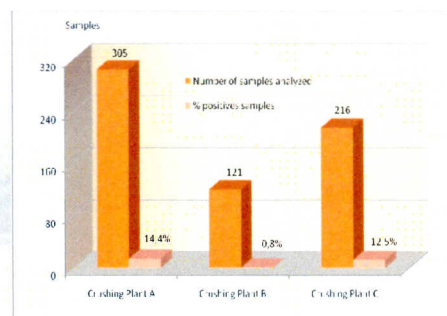


Figure 2 – Positives samples for *Salmonella* spp per crushing plants.

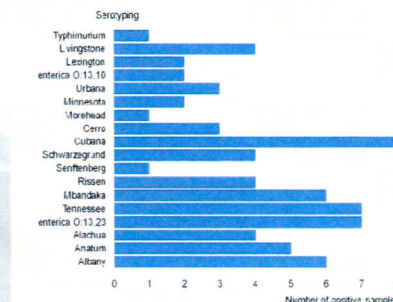


Figure 3 - *Salmonella* serotyping isolated from soybean meal samples collected from crushing plants located in Brazil, 2009

References

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