

INNOVATIONS IN FOOD LOSS AND WASTE MANAGEMENT Ancona, 23-25 January 2024



Food waste quantification in Portuguese meat plants

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Results that will be present

These are part of a larger study on the reduction and recovery of food waste in **four sectors** of the Portuguese agrifood industry:

- **meat products,**
 - fruit and vegetables,
 - bakery industry,
 - dairy products.
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- **Aim: to obtain a diagnosis of the agrifood sector in Portugal**



Methodology

- Results were obtained through face-to-face surveys.
- Surveys were carried out in 11 companies.
- Enterprises activities:
 - Meat products plant (6), Raw meat products and meat products plant (3),
Raw meat products plant (1), Slaughterhouse (1).
- The results refer to the situation of the companies in 2020.

Objectives of the surveys

- Quantify waste
- Identify the destination of waste
- Record procedures for reducing and recovering waste
- Quantify the reduction and recovery of waste

Table 1 - Total Sales and N° of Employees in 2020

Enterprise	Sales (€)	Employees
1 (MPP)	350.000	7
2 (MPP)	4.179.920	45
3 (MPP)	5.471.393	42
4 (MPP)	1.491.638	16
5 (SH)	21.997.428	32
6 (RMP)	20.216.007	14
7 (RMP+MPP)	1.282.651	35
8 (RMP+MPP)	10.897.000	82
9 (MPP)	23.686.153	250
10 (RMP+MPP)	10.806.230	130
11 (MPP)	156.056	4

MPP – Meat Products Plant
RMP - Raw meat products plant
SH - Slaughterhouse

Table 2 – Waste Production (t) in Portuguese Meat Industry

Company	Production (t)	Waste During Production			Waste During Marketing		
		Identification	Amount	Destination	Identification	Amount	Destination
1	55,0	Casing damage	NQ	Donation	Loss of packaging vacuum.	NQ	Destruction
2	260,5	Losses during curing and slicing	0,694	Animal feed (M3)	Sausages devolutions	0,149	Destruction
3	2.147,0	Out standard products	Very few	Donation	Loss of packaging vacuum	1,039	Animal feed (M3)
4	188,5	Bones, pork skin	6,4	Animal feed (M3)	-	No significant	-
5		Slaughter products	2.098	Destruction (M2) and animal feed (M3)	-	-	-

NQ – Not Quantified

Table 2 – Waste Production (t) in Portuguese Meat Industry

Company	Production (t)	Waste During Production			Waste During Marketing		
		Identification	Amount	Destination	Identification	Amount	Destination
6	200,1	Bones and fat	NQ	Animal feed (M3)	Loss of packaging vacuum	NQ	Destruction and animal feed (M3)
7	195,5	Losses during slicing	NQ	Animal feed (M3)	-	NQ	-
8	1.172,3	Bones, losses during slicing	82	Animal feed (M3)	Loss of packaging vacuum	0,35	Destruction
9	9.003,3	Losses during slicing	NQ	Animal feed (M3)	Loss of packaging vacuum; wrong label; expiration date	NQ	Animal feed (M3)
10	1.546,3	Leather, fat, bones	319,5	Cosmetics, biodiesel	Packaging damage	0,495	Destruction
11	41,5	Fat, bones	0,40	Animal feed (M3)	Devolutions	0,030	Re-use

NQ – Not Quantified

Final Notes

- Main losses destinations: animal feed and destruction.
- Product devolutions are often destroyed by the customer; it is more expensive to return to the factory.
- There is more waste when sausages or cured-hams are sliced.
- During marketing, “loss of packaging vacuum” represent a significative cause.
- Companies with quality and/or food safety management systems certification are more concerned about waste accounting.
- Losses represent (0,05% - 20,7%) of the production.
- There are a very few data concerning food waste quantification.

Reducing food waste

- Better production management (1, 2, 3, 6 and 9)
- Investment in more efficient packaging equipment (7 and 8)
- Introducing technological improvements to the manufacturing process (9 and 10)

The valorisation of food waste

- New food uses for residues from slicing activities (2, 6, 7, 8, 9, 10 and 11)
- Sale to other markets, e.g. bones for soup on the Chinese market (5)
- Donations to employees or social organisations (1, 2 and 4)

I thank you for your attention

