Retrospective analysis of broiler carcass condemnations in Portuguese abattoirs (2014- 2019)

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Introduction and Objectives

Meat inspection is one of the most widely implemented and longest running systems of surveillance. It was primarily introduced to identify specific characteristics in the meat of animals that are not fit for human consumption and to remove their carcasses and offal from the food chain. In the poultry production industry, various diseases and many pathological changes can affect these carcass characteristics. This leads to economic losses due to total or partial condemnation of carcasses or viscera following veterinary evaluation at the time of slaughter.

Materials and Methods

The aim of this retrospective analysis was to determine the economic losses of broiler carcass condemnation during a 9-year period in Portugal, based on the Portuguese Official published data related to slaughtered poultry from January 2014 to December 2019. The data, including the total number of broilers slaughtered, total condemnation rate (TCR) and number of those condemned for specific conditions were used as a source for this analysis. The direct financial losses (DFL) due to poultry carcass condemnation were calculated using the following formula: DFL= C × P × W, where C - number of condemned poultry carcass; P - average poultry carcass price (€/Kg); W - average poultry weight (Kg). The annual average sell price (P) for each kilogram of poultry carcass was calculated by taking the average of the values officially published each week.

Results

Table 1 resumes the results found. A total number of 1 167 995 335 broilers were slaughtered in Portuguese abattoirs in the considered period and the total rate of carcass condemnation was 1.05% (12 310 212 broilers). The five most common reasons (Figure1) for carcass condemnation (excluding those attributable to the slaughter operations) were cachexia (25.4%), septicemia/febrile state (20.4%), cellulitis (11.4%), airsacculitis (7.7%), ascites/hydroemia (6.9%). The estimate averages of total DFL due to the five main causes were: 7.9M€ due do cachexia, 6.9M€ to septicemia/febrile state, 3.8M€ to airsacculitis and almost 2.4€ to ascites/hydroemia, out of a grand total of 37.7M€ due to all causes of broiler carcass condemnation.

	Cachexia	Febrile state	Cellulitis	Airsacculitis	Ascites/ Hidroemia
2014	1 305 815.73 €	1 301 225.68 €	562 223.96 €	227 171.11 €	326 940.25 €
2015	1 049 153.98 €	1 266 238.09 €	652 278.56 €	419 579.88 €	360 773.21 €
2016	1 167 477.96 €	1 417 257.51 €	721 057.55 €	203 854.07 €	430 743.82 €
2017	1 399 310.19 €	1 032 758.95 €	620 697.49 €	559 536.43 €	498 722.88 €
2018	1 565 696.17 €	957 595.69 €	718 140.95 €	579 398.03 €	441 513.28 €
2019	1 412 970.03 €	927 601.69 €	584 686.25 €	447 057.45 €	339 121.12 €
Total	7 900 424,06 €	6 902 677,61 €	3 859 084,75 €	2 436 596,98 €	2 397 814,56 €

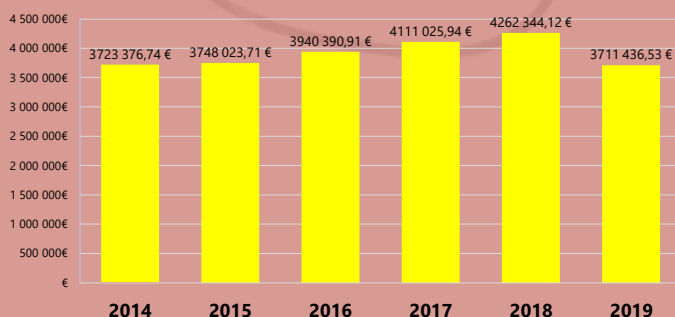**Table 1.** The estimate averages of total direct financial losses were

Chart 1. Overall economic losses in the period under review (2014-2019) of the five most common reasons for carcass condemnation
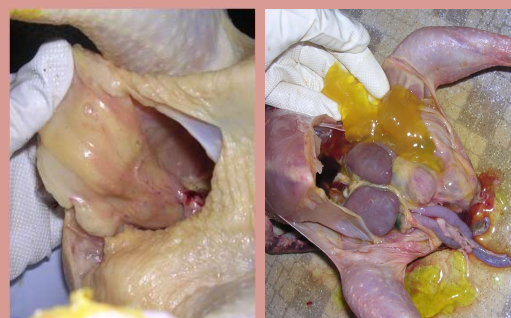
Figure 1. The five most common reasons for carcass condemnation:
A - Cachexia, B – Febrile state; C-Cellulitis;
D – Airsacculitis; E – Ascites/Hidroemia

Conclusions

These results allow a more detailed analysis of the economic importance associated with the post-mortem condemnation of broilers, and can assist and inspire food business operators to prioritize the application of tailor-made and effective control measures.

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