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Rate of carcass and offal condemnation in animals slaughtered at Yazd Slaughterhouse, central Iran

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PEER REVIEW

Peer reviewer

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Comments

In this valuable survey work authors have recorded the rate of carcass and offal condemnation in large and small animals slaughtered at Yazd Slaughterhouse, central Iran which is very useful for public and safety purpose.
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ABSTRACT

Objective: To determine the rate of carcass and offal condemnation in the animals slaughtered at Yazd slaughterhouse, Yazd, Iran.
Methods: In a nine-month retrospective survey from June 2011 to March 2012, all the carcasses and offal condemnations for large animals (cattle and camels) and small animals (sheep and goats) in Yazd Slaughterhouse were carefully recorded daily.
Results: In total, 2741 large animals (cattle and camels) and 77515 small animals (sheep and goats) were slaughtered during the period of this survey. Six carcasses (0.21%) of the large animals and 18 carcasses (0.02%) of the small animals were condemned. For large animals, condemnations in summer and autumn were significantly greater than winter ($P<0.05$). Condemnation rate of liver, lungs and kidneys for the large animals were 5.36%, 21.23% and 3.68% respectively and for the small animals were 4.37%, 5.46% and 0.51% respectively. The main recorded reasons for carcass condemnations in both large and small animals were icterus and cachexia. The most prevalent lesion resulting in offal condemnation was due to parasitic infection specially metacestods.
Conclusions: This study aimed to show the efficiency of documentation records during meat inspection at slaughterhouses to monitor the amount of condemnation and possible approaches to better awareness about the future preventive programs. Considering the percentage of condemnation of carcass and offal in the present study and their price in Iranian markets, the overall economic losses seems to be notable at Yazd slaughterhouse.

KEYWORDS
Carcass, Offal, Condemnation, Slaughterhouse, Yazd, Iran

1. Introduction

Meat is a nutritious food that has an important role in balanced human diet. Besides of the high biological value of meat, it also increases the resistance of human body against virulent pathogens. Therefore, there is a demand to increase the rate of meat production and consumption throughout the world. Meat consumption is often a sign of social status and financial condition because it is a relatively expensive food especially in

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some developing countries such as Iran. So, per capita consumption of meat is more in developed countries compared to the undeveloped or developing ones[1,2].

Safety and hygiene of meat and meat products is the most important concern of consumers and producers of these products. Some microbial pathogens have severe complication. Some infections may infect small number of people, but in some cases, more will be infected and the results is a serious problem in the public health. Moreover, the persistence of residual veterinary drug substances such as antibiotics, anti-parasitics and hormones could endanger human health. Therefore, comprehensive and perfect inspection of carcass and offal in slaughterhouses is very vital[3].

Having a proper record of the condemnation rate of the slaughtered animals is the first stage in planning of the preventive measures for hygienic risks and financial losses in meat industry. In addition, the data achieved from meat inspection records in slaughterhouses are efficient for estimation of the epidemiological aspects of some zoonotic illnesses. Thus, the main purpose of this survey was to determine the rate of carcass and offal condemnation in the animals slaughtered at Yazd slaughterhouse, Yazd, Iran.

2. Materials and methods

A nine-month retrospective survey was done in Yazd slaughterhouse, Yazd, Iran from June 2011 to March 2012. Yazd is the capital of Yazd Province located in central part of Iran with dry and hot climate. All carcass and offal (liver, lung and kidney) condemnations for large animals (cattle and camels) and small animals (sheep and goats), slaughtered at Yazd slaughterhouse, were recorded daily by the slaughterhouse authorities. As a part of routine meat inspection, each slaughtered animal was examined by a trained meat inspector assigned by Iran Veterinary Organization. Diagnosis of lesions in carcasses and offal and consequent condemnation (total or partial) was carried out by visual inspection, palpation or if necessary, incision of the suspected cases according to the national standards of the Iranian Veterinary Organization.

Statistical analysis was performed by SPSS software (version 18). P values less than 0.05 was considered as significant.

3. Results

In total, 2 741 large animals (cattle and camels) and 77 515 small animals (sheep and goat) were slaughtered during the period of this survey. Six carcasses (0.21%) of the large animals and 18 carcasses (0.02%) of the small animals were condemned (Table 1). For large animals, condemnations in summer and autumn were significantly greater than winter ($P<0.05$). Condemnation rate of liver, lungs and kidneys for the large animals were 5.36%, 21.23% and 3.68% respectively and for the small animals were 4.37%, 5.46% and 0.51% respectively (Table 2). The main recorded reasons for carcass condemnations in both large and small animals were icterus and cachexia. The most prevalent lesion resulting in offal condemnation was due to parasitic infection specially metacestods.

Table 1

Rate of carcass condemnation in animals slaughtered at Yazd slaughterhouse, Yazd, Iran.

Animals	Number of slaughtered animals				Number of condemned carcasses			
	Summer	Autumn	Winter	Total	Summer	Autumn	Winter	Total
Large animals	722	836	1 183	2 741	4	2	0	6
Small animals	27 874	26 357	23 284	77 515	3	8	7	18

Table 2

Rate of offal condemnation in animals slaughtered at Yazd slaughterhouse, Yazd, Iran.

Animals	Number of condemned liver			Number of condemned lung			Number of condemned kidney		
	Summer	Autumn	Winter	Summer	Autumn	Winter	Summer	Autumn	Winter
Large animals (n=2741)	43	47	57	198	184	200	42	20	39
Small animals (n=77515)	1 087	1 133	1 169	1 536	1 443	1 261	100	142	159

4. Discussion

Slaughterhouses could present valuable information about the epidemiology of animal diseases, and estimate the public health risks and economical losses due to condemnation of carcasses and offal. Inspection of carcass and offal should be carefully done in slaughterhouses to ensure meat safety and hygiene. On the other hands, carcass or offal that has been infected to non pathogenic agents, are also condemned due to aesthetic aspects.

In the present survey, condemnation rate of liver, lung and kidney for the small animals were 4.37%, 5.46% and 0.51% respectively and for the large animals were 5.36%, 21.23% and 3.68% respectively, which are comparable with the previous investigations in Iran and other countries. In a ten-year period study done in Ahwaz, Iran, among a total of 3 583 417 slaughtered animals including sheep,