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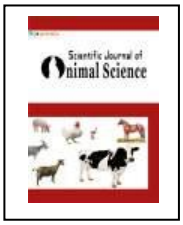

Original article

Determination carcass condemnation causes of broiler chickens (*Gallus Domesticus*) at industrial slaughter house of Shazand, Markazi province of Iran

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ABSTRACT

An experiment was carried out to evaluate the main causes of broiler carcass condemnations in shazand industrial slaughter during the first six months of 2009. Poultry industry occupies a major position in the livestock sector of agricultural production because birds reproduce much quicker to produce meats and eggs for human consumption. Several of the post-mortem inspection conditions that are currently recorded have been identified as potential indicators of on-farm management problems. The data was taken within six months period and carcass condemnation causes were separately recorded based on monthly. In this study six different cause of carcass condemnation were revealed that included septicemia, excessive atrophy, toxicosis, trauma, respiratory infection and peritonitis ascites. Base d on this result excessive atrophy, trauma and septicemia with 32, 23 and 13 percentage of total condemnation frequency respectively was main cause of carcass condemnation and toxicosis with 9 percentage of total carcass condemnation was least

importance of ones.Result of statistical comparison revealed that in different months of experiment about probability of different cause of condemnation was least significantly ($p<0.05$) in May except excessive atrophy and trauma. There were no significant differences ($p>0.05$) between frequency of each cause of carcass condemnation in different month of experiment except May. In our study there was significant difference between seasons (spring and summer), the peritonitis ascites, toxicosis, respiratory infections and septicemia have higher frequency rate at summer but trauma and excessive atrophy has higher frequency rate at spring. This difference may occur because of environment conditions that were high in temperature at summer months. On the basis of the results of this study, it was concluded that that excessive atrophy, trauma and septicemia were main cause of condemned carcass of bird in shazand industrial slaughter house within one year of experimentation and this is obligatory to recognize cause of septicemia, excessive atrophy and, trauma in this geographically region for alleviating the efficiency of broiler production. With promoting and guide programs for local producers about these reasons may reduce carcass condemnation rate in industrial slaughter houses.

1. Introduction

In a developing country there is an inadequate supply of animal protein sources. Sanni and Ogundipe (2005) reported that poultry industry occupies a major position in the livestock sector of agricultural production because birds reproduce much quicker to produce meats and eggs for human consumption within the shortest possible time. FAO (1995) reported that the best logical solution to meat scarcity is to increase broiler chicken production. Poultry meatand eggs will continue to be an abundant source of relatively inexpensive protein. There will no change to the procedures for carrying out post-mortem inspections in the slaughterhouse. Therefore, information gathered on animals slaughtered at an abattoir can be a convenient and inexpensive source of information. Several of the post-mortem inspection conditions that are currently recorded have been identified as potential indicators of on-farm management problems.For this reasons hygienic carcass inspection in slaughter house can use as indicator of meat quality and in other hand for monitoring managements of production and slaughtering process. some study was revealed that septicemia is main cause of carcass condemnation at industrial slaughtery in Gonbadkavous within one year of experiment(Gholamian, et al. 2008).in different study Azizpour, (2012) mentioned that septicemia, ascytes and peritonitis was main cause for condemnation of carcass in Namin province within 2009. Skin diseases are the main reason for condemnation of carcasses in slaughtered broilers (Bergmann et al., 1995). Cellulite can be regarded as one of the most important causes of condemnation of meat chickens Worldwide (Ângela Patrícia et al 2008). This study is aimed at evaluating the main causes of broiler carcass condemnations in shazand industrial slaughter during the first six months of 2009 so with findings of this study producers could take proper managementaldecisions at their farms.

2. Materials and methods

2.1. Experimental site

The study was conducted at the industrial slaughter house of shazand city,markazi province, Iran in 2009.

2.2. Data collection and statistical analysis

The data was taken within six months period and carcass condemnation causes were separately recorded based on monthly. Carcass condemnation causes were classified based on gross inspection, traits and organs lesions that were accordance with the traditional manual of poultry meat inspection. The differences between frequency of different condemnation causes in specific months and seasons was analyzed with statistical software SAS by Chi-square method with5% level of significance.

3. Results

In this study six different cause of carcass condemnation were revealed that included septicemia, excessive atrophy, toxicosis, trauma, respiratory infection and peritonitic ascites. Based on result of this study at shazand slaughter house total number of condemned carcass during spring and summer were 16487 birds which was separated base on season, 48 percentage (7936 bird) was happened in the spring and 51 percentage (8551 bird)in the summer. The frequency of condemnation and different cause of condemnation in each month is presented on Table 1. Base d on this result excessive atrophy, trauma and septicemia with 32, 23 and 13 percentage of total condemnation frequency respectively was main cause of carcass condemnation and toxicosis with 9 percentage of total carcass condemnation was least importance of ones. Result of statistical comparison revealed that in different months of experiment about probability of different cause of condemnation was least significantly ($p<0.05$) in May except excessive atrophy and trauma. There were no significant differences ($p>0.05$) between frequency of each cause of carcass condemnation in different month of experiment except May. Among May and other months there were significant differences ($p<0.05$) in septicemia,, toxicosis and respiratory infection that had least frequency in this month when compared with other months but trauma has high frequency in compared with other months.

When the reasons of carcass condemnation were compared between seasons was revealed that excessive atrophy and trauma had high frequency at spring but septicemia, respiratory infection, toxicosis and peritonitis ascites have high frequency at summer.

Table 1
Data of condemned carcass based on different months and causes (number).

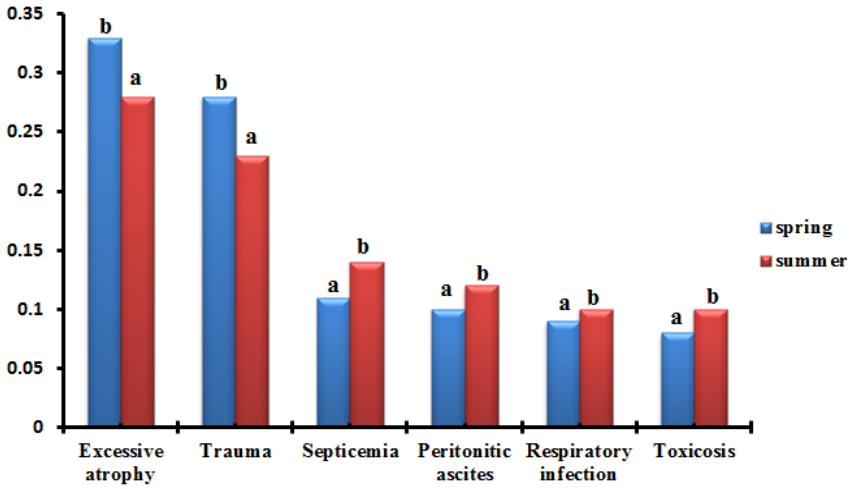
causes	March 15 -15	April 15 -15	May 15 -15	June 15 -15	July 15 -15	August 15 -15	Total based on cause
Septicemia	395	384	206	333	504	369	2191
Excessive atrophy	870	1105	828	708	1060	709	5280
Toxicosis	266	295	185	253	328	288	1615
Trauma	683	282	837	631	835	573	3841
Respiratory infection	263	319	172	249	346	271	1620
Peritonitic ascites	308	307	231	264	492	338	1940
Total based on month	2785	2692	2459	2438	3565	2548	16487

Table 2
comparisions of frequency rate of condemned carcass causes in different months.

causes	March 15 -15	April 15 -15	May 15 -15	June 15 -15	July 15 -15	August 15 -15
Septicemia	14^{a}	12^{a}	8^{b}	12^{a}	14^{a}	14^{a}
Excessive atrophy	31^{b}	35^{a}	32^{ab}	29^{a}	29^{b}	27^{b}
Toxicosis	9^{a}	9^{a}	7^{b}	10^{a}	9^{a}	11^{a}
Trauma	24^{bd}	26^{b}	34^{a}	25^{bc}	22^{be}	22^{cde}
Respiratory infection	9^{a}	10^{a}	6^{b}	10^{a}	9^{a}	10^{a}
Peritonitic ascites	11^{a}	9^{b}	9^{a}	10^{ab}	12^{a}	12^{a}

4. Discussion

Monitoring the cause of different carcass condemnation and revealing the main ones at slaughter house can help the producers and scientists for determination of fault management at production, pre-mortem and postmortem operations. Gholamian 2008 in same study at industrial slaughter houses of gonbad -e- kavous reported that total condemned carcass during one year (2005-2006) was 845 birds that was lower in rate in compared with this study. He revealed that septicemia and excessive atrophywith frequiency of 46.87 and 28.28 % were main cause of condemnatation and peritonitis ascites with frequency of 0.35 % was least cause of its (1). In our study septicemia and excessive atrophy were main cause of condemnation but toxicosis had lower frequency rate that was not agree with gholamian 1387. In other study azizpour 1390 that monitored the cause of condemnation in Namin city within 2008. He resulted that number of total condemned carcass was 20479 birds (2). Azizpour was showed that septicemia (33.57 %), and peritonitis ascites (32.61 %) have highest rate and tumor (0.03 %) has lowest frequency rate this results were not same with our study in main causes and frequency rate of its. In Fars province during 2002- 2006 in 11 industrial slaughter house excessive atrophy and infections was main cause of carcass condemnation that involved 62 percentage of total condemnation frequency rate (3). Radkowski et al 1996 showed that within 1986-1991, marek disease, salmonella, coccidiose and respiratory diseases were the main cause of condemnation in Poland (4). Different result from same studies may resulted by different geographical conditions, level of management of production and slaughtering process. In our study there was significant difference between seasons (spring and summer), the peritonitis ascites, toxicosis, respiratory infections and septicemia have higher frequency rate at summer but trauma andexcessive atrophy has higher frequency rate at spring (figure 1). This difference may occur because of environment conditions that were high in temperature at summer months.



Fi.1. Comparisons of frequency rate of condemned carcass causes in different seasons.

5. Conclusion

On the basis of the results of this study, it was concluded that that excessive atrophy, trauma and septicemia were main cause of condemned carcass of bird in shazand industrial slaughter house within one year of experimentation and this is obligatory to recognize cause of septicemia, excessive atrophy and , trauma in this geographically region for alleviating the efficiency of broiler production. With promoting and guide programs for local producers about these reasons may reduce carcass condemnation rate in industrial slaughter houses. Effect of season on frequency rate of condemnation causes was significant so in each season especially spring and summer broiler production management must be specific based on more important cause of condemnation in these seasons or months.

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