Scholars Journal of Agriculture and Veterinary Sciences **e-ISSN 2348–1854**
Sch J Agric Vet Sci 2014; 1(4):153-155 **p-ISSN 2348–8883**

An International Publisher for Academic and Scientific Resources) DOI: 10.36347/sjavs.2014.v01i04.001

Prevalence of subclinical Candidiasis in broiler flocks Urmia, Iran

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Abstract: Candidiasis is one of avian fungal diseases that can affect poultry flocks. Candida albicans is considered as normal flora of birds which can be pathogen under certain circumstances. Hence the prevalence of subclinical disease causes delayed growth and loss of weight gain. In present study, 600 broilers were sampled randomly from 10 poultry farms. Each broiler was weighted and tracheal samples were caught by swab dropping technique. Samples were cultured on 37 degree of centigrade. Further tests were applied for positive samples. 47 out of 600 samples were positive. Prevalence of subclinical candidiasis in broiler flocks around Urmia was 7.83%. Based on chi square, the prevalence of subclinical candidiasis and mean flocks weight has significant correlation ($\alpha \leq 0.05$). Prevalence of subclinical candidiasis instead of economic significance, May reflects different problems such as irresponsible use of antimicrobial agents, presence of immunosuppressive factors and etc.
Keywords: candidiasis, broiler flocks, Candida albicans, Urmia.

INTRODUCTION

Nowadays, with the expansion of the poultry industry, breeding units than necessary to comply with health issues and raise efficiency are more productive herds. In this regard, the disease is less common than previously considered.

Candidiasis is a fungal disease of birds, including poultry industries that have global expansion [1]. The organism under certain conditions, including: Lack of adequate health care, long-term treatment with antibiotics, severe parasitic infection, vitamin deficiency, carbohydrate-rich rations and a weakened immune system can develop its activities and the development of the clinical protests[2-3]. The general symptoms of the disease in the herd, mainly asthenia, anorexia, developmental delay and disarray are Feathers [2]. This is not specific symptoms, so laboratory confirmation by culture, direct observation and histopathological studies are needed to prepare deployments. Because candidiasis can be one of the factors in clinical developmental delay and failure to achieve adequate weight in broiler flocks may be considered in the present study it has been attempted to determine the prevalence of subclinical disease in poultry meat is the city of Urmia.

MATERIALS AND METHODS

In this study, broiler farms were sampled around the city of Urmia. 10 farms were randomly selected from the 8 bit segment and 2 poultry farms of 5000 were 10,000 a piece. Sampling of chicken cross the hall as a percentage of the total herd included A total of 600 samples were collected from farms.

After recording the age of the flock, the birds were randomly selected and weighed. The method (swab dropping) chosen from avian bronchial biopsies were performed [4]. The method Draping swab, sterile swab into the trachea early birds were selected and then click on Subaru dextrose agar medium sabouraud dextrose agar) were killed. Were incubated at 27 ° C in medium [5].). Cream-colored slimy colonies grown after 24 h were studied. More than 75% of the plate with cream-colored slimy colonies had grown suspicious of the candidate, as was often viewed with suspicion and complementary experiments [1]. In order to confirm the diagnosis and ensure the continued pollution than normal, creating a germ tube test (germ tube) or phenomena Reynolds (Braude Phenomenon Reynolds) was used[4,6]. In this method, yeast colonies with 5/0 cc human serum was mixed. The resulting suspension incubated for 3 h at 37 ° C was placed. After

a drop of the suspension during the time between slide and cover slip were placed in incubation or germ tube and germ tubes were observed under light microscopy [4,6].

RESULTS

Within a month of the 600 samples, 47 samples were positive. The overall incidence of Candida in samples taken from birds tested 83/7 percent (05/0 ≥ α). The classification was carried out, at the rate of 40 days following the birds 2/11%, and the birds above 40 days, 77/5%, respectively. On the other hand outbreaks in birds under 2 pounds 42/5% of the birds above 2 kg 2/11%, respectively (Table 1 and Figures 1 and 2). Results regarding the relationship between the incidence of candidiasis and age factors, and the weighted average density of birds in the flock were examined using chi-square test. The relationship between the incidence of candidiasis and the average age was statistically significant. (05/0 ≥ α)

Table 1: Specifications of the flocks sampled, with results

Row	Average weight (g)	sample	capacity poultry	Age (days)	positive samples	negative samples
1	1.900	100	10000	38	5	95
2	2.150	100	10000	39	7	93
3	1.980	50	5000	39	2	48
4	1.800	50	5000	35	1	49
5	1.950	50	5000	39	3	47
6	2.300	50	5000	43	7	43
7	2.250	50	5000	41	6	44
8	1.900	50	5000	38	4	46
9	2.450	50	5000	45	8	42
10	1.975	50	5000	39	4	46

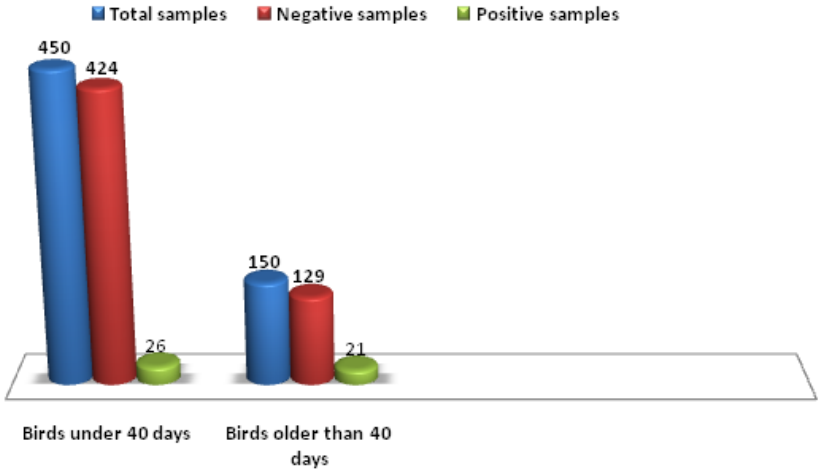

Fig-1: Distribution of samples in different age groups

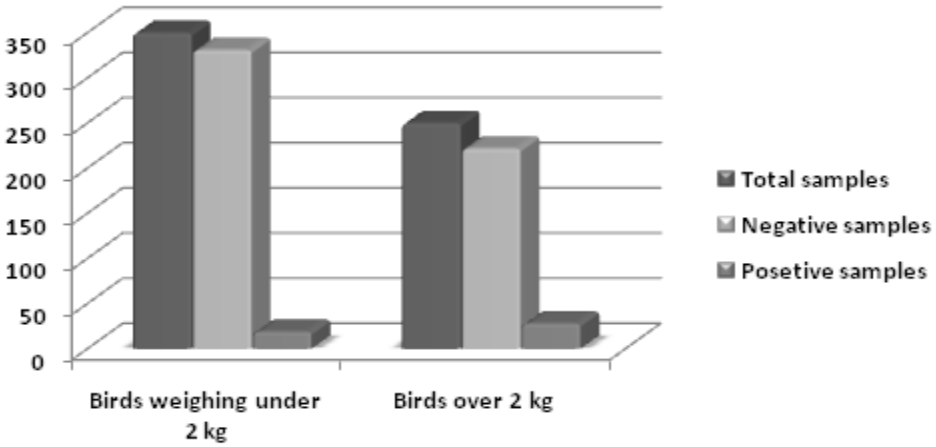

Fig-2: Distribution of samples in different weight groups

DISCUSSION

Gierke like thrush outbreak in turkeys in 1932, California reported [7]. Holt 1947 outbreak in turkeys and other birds in New South Wales reported [8]. Ramani 1998, Candidiasis outbreaks in turkey flocks with mortality of 40% was reported in Italy [3]. Fienchman 5 Blaks Maryland and serious outbreaks of candidiasis in young turkeys were reported [9]. Jungherr outbreaks with losses 10,000 50,000 pieces of day-old chicks less than 60 days was reported [10]. Hynsha the incidence of candidiasis in 12 flocks of broiler turkeys with symptoms similar to that reported [11]. According to the results of other researchers and the results of this study diseases can be expressed as one of the strengths of this study. Spread 2/11 % clinical forms of candidiasis in broilers following 40 days of Disneyland and Jungherr Blaks results are quite similar. Most outbreaks in birds weighing more than 2 kg , although the difference was not significant relationship can be expressed , but probably older equals more chances of exposure to the underlying factors . As already mentioned, the bird is associated micro flora and the presence of high levels of Candida albicans, followed by pathogenic microorganisms suggests that other predisposing factors. Among the factors that may underlie the prevalence of poor hygiene, inadequate rations and any illnesses that may impair the absorption of nutrients in the digestive tract, of the disease or viral immunosuppressive Finally One toxins fungal reason, long-term antibiotic therapy and irresponsible cited.

CONCLUSION

The results of this study and comparison with other published research, outbreaks 83/7% candidiasis Broiler flocks around the city of Urmia, the figure is considerably more attention than the vets and herd management to address the main factors underlying demand.

Acknowledgments

This study was supported by Islamic Azad University, Urmia branch. Regarded from Mr. Delshad for support and helps.

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