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Prevalence and predisposing factors of breast inflammation (Mastitis) in dairy cows in gardez

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Abstract
Breast inflammation (Mastitis) is a universal disease in the dairy industry, in this study; mastitis was investigated in dairy cows of Gardez city, and hygienic condition of stable, cow milking, calving and its health measures and treatment measures of mastitis are the cases that have been investigated. During the year 2016, a total number of 106 bovine animals were observed, from the study it shows that, 8 bovine animals had clinical breast inflammation and 98 other do not showed clear symptoms of clinical breast inflammation, meanwhile milk of these cows were tested by "California mastitis test, white side test and Cup test" for sub clinical mastitis. From the result of the study it shows that, 12 others had sub clinical mastitis symptoms. In addition to these factors of mastitis there were some more environmental shortcomings such as: weakness in the implementation of sanitation in stable, traditional raising of dairy cattle, lack of preventive measures of mastitis, weakness in the implementation of hygiene conditions in cow milking and Calve, weakness in the feeding of cattle, local and traditional treatment of ill cows and lack and weakness of hygienic implementation of suitable bed for cows. hygiene adjustment in stable, washing and drying of cows udders, hygienic adjustment of milking equipment's, breast-protecting treatment and disinfecting of udders after the milking and suitable nutrition for cows are those cases which suggested to formers for preventive of dairy cows mastitis.

Keywords: milking, inflammation, Mastitis, disease

Introduction
Mastitis (from the Greek word mastos meaning breast and the suffix itis meaning inflammation) is a disease which occurs due to inflammation of secretory tissue udder and is characterized by physical, chemical and bacteriological change in milk. Mastitis is considered one of the most important dairy cattle diseases and is one of the major causes of antibiotics use in dairy cows, Breast inflammation (Mastitis) known to be a complex and costly disease of dairy cows that results from the interaction of the cow and the environment including the milking (Cockroft *et al*., 2003), (Gillespie *et al*., 2006) [3].

The internal environment of a normal mammary gland is ideally sterile, but saprophytic bacteria may be found as commensals in some normal mammary glands. Mastitis begins with penetration of pathogenic bacteria through the streak canal into the interior of the mammary gland. If the internal environment of the gland is favorable to survival and multiplication of the invading bacteria, the by-products of bacterial growth and metabolism may irritate the delicate mammary tissue and induce an inflammatory reaction

Milk production in dairy cows are not satisfied without hygienic conditions, thus Dairy farmers want to increase milk production and its quality to improve their economic incomes.

Over one hundred and thirty-five different agents have been isolated from bovine mastitis, but the majority of infections are caused by bacteria such as staphylococci, streptococci and gram-negativebacteria (Hawari, and Aldabbas., 2008). Mastitis or Breast inflammation is considered to be the most frequent disease of Dairy cows In Gardez city, Paktia-Afghanistan, and has received more veterinary attention as a disease of Cattle and as a serious economic problem.

There is three important factors are involved in the incidence of the dairy cows mastitis such as Place of living, Microorganism and cattle as a host (Schroeder., 2007) [6], (Sawant *et al*., 2009) [8]. Therefor comprehensive studies should be conducted to suggest a way of controlling the mastitis in Gardez city.

Methods and Materials
Totally 92 farmer selected randomly by this survey from 8 villages (Karmashi, Kochikhil, Malikkhil, Sadaat, Bagh-e-pir, Hasankye, Dabar and Ahengaran) of Gardez city- Paktia province and 106 cows had been examined for clinical and sub clinical mastitis, California Mastitis Test reagent (CMT) and White side Test reagent were the substances to Diagnosed the subclinical mastitis into the cows. Beside the observation of cows the questionaries' and registration books of veterinarian in Gardez city used forincidence of clinical mastitis.

Results and Discussion
From result of this investigation and observation of veterinarian of dairy cows in Gardez city it is noticed that the mastitis is incidence in both types (clinical and subclinical) in dairy cows. From 106 cows only 8 cows were suffered clinical mastitis with two stages (Acute clinical mastitis and sub-acute clinical mastitis); the cows with acute clinical mastitis had swollen of udder, fever, anorexia, anxiety, redness and warmth on udder and disallow the calf for sucking and milking for pain on udder and teat, the

survey study and veterinarian observation which was registered with Afghanistan Veterinarian Association (AVA) and Dutch Committee for Afghanistan (DCA) showed 4% prevalence of acute clinical mastitis in Gardez dairy cows, these dairy cows needed the veterinary attention and medicine for treatments, table (1).

The sub-acute mastitis were happened in new parturition cows which have showed inflammation in one or two teats, The severity of the sub-acute mastitis has not worsened in its acute form, this survey find out over 4% other dairy cows which suffered sub-acute mastitis.

Mostly those cows which suffered sub-acute mastitis get health itself or became healthy by local treatment with farmers. Other 98 dairy cows that did not showed the symptom of clinical mastitis were subjected to sub clinical mastitis examination; milk samples are collected and tested by California mastitis test (CMT) and White side test (WST), the 12 (11.76%) cow's milk showed sub clinical mastitis in its samples.

According to the information and researches the high producer milky cows are very susceptible to mastitis then low producer, so the survey in Gardez city showed; from every 5 ill cows with mastitis 4 of them were cross breed cows that produced more milk then local cows, thus, the cross breed cows are susceptible to mastitis then local cows and on the other hand, self- sufficiency in local cowsis much higher than cross breed cows the issue that (Joshi., 2006) [5] and (Chishti., 1999) [1] have also mentioned in their investigations.

The occurrence of mastitis were varies according to the physiological state of cows and season of year in Gardez city.

Table 1: Apparent for the treatment of mastitis and other diseases according to the Veterinarian Registry Books

No	Veterinary Clinics	Mastitis Case Treatments	Other Disease Treatments	Percentage of Mastitis
1	First Clinics	206	4538	4.5
2	Second Clinics	90	3171	2.8
3	Third Clinics	60	1800	3.3
4	Forth Clinics	84	2520	3.3
5	Fifth Clinics	92	3250	2.8
6	Sixed Clinics	108	3070	3.5
7	Seventh Clinics	110	2940	3.7
8	Eighth Clinics	169	3500	4.8
9	Total	919	24789	28.7
10	Average Percentage of Mastitis	=4		

This survey studied hygiene, moisture, land and walls of stable, feeding system of the dairy cows and other essential part of cow rearing system in Gardez city. Totally 92 cow rearing system of farmer was observed with the survey that

From 92 farmers just 18 farmers had paid particular attention to raising their cows and these farmers had cemented the surface of the stable for easily washed, these number of farmers used cereal, feed cakes, molasses, tubers and urea treatments for their dairy cows as feeds and were paying attention to vaccination and deworming of cows and different season of year. These farmers at the time of diseases they would go to the veterinarians as soon as possible, and when needed, they took the cow's blood and milk to the lab with them. The mentioned farmers were diligent in their cows breeding and them always using artificial insemination programming for fertilization of their cows.

The rest of the 74 other farmers are traditionally farmed and kept their cows, the stable system of the cows were simple and there was a weakness in adapting to the conditions of sanitation, no special attention was paid to ventilation systems, moisture control and other necessities. The correct milking method (washing and drying of udders) before of cow milking, weaknesses in stable sanitation and milking properties, Preventive treatment, Teat dipping after cow milking was the points that were no implemented by Gardez city cow owners. Local cow milkingand much sucking of the teat by the calf and even chewing andhitting to udder by calf, in the absence of milk into the udderare the causesof lesion to udder and can provide basis for microorganism growth in udders. The shortcomings of sanitation in cow's stables included: Lack of ventilation system, lack of the sunshine into the stable floor, lack of moisture control in stable, lack of disinfection usages in stable and other hygienic shortcomings in cow parturition time, the aforementioned sanitation cases are correspond to the findings of (Schroeder., 2007) [6] research.

Conclusion and Suggestions

Lack of hygienic condition and locale dairy cows rearing were two major cases of the mastitis are known at the Gardez city dairy cows. According to the investigation, 8 percent of the Gardez dairy cows suffering clinical mastitis and over more than 12 percent of cows suffering sub-clinical mastitis. Therefor according to the research, mastitis was one of the common diseases of dairy cows in Gardez city. So the recommended preventive and control measures against mastitis should include application of good sanitary and hygienic measures. In addition to the regular monitoring of the prevalence and the distribution of mastitis causing pathogens provides, however, valuable knowledge about the effectiveness of proposed control strategies and helps in prioritizing specific mastitis control efforts.

The majority of preventive measures against mastitis need to start in the cow's dry period of milking. Some importance key points to consider on how to minimize mastitis in dairy cows ore bellow:

- Preventive and management advice about mastitis should always be given to the farmers.
- A clean environment will optimize prevention of environmental mastitis pathogens in addition clean comfortable bedding can make a significant difference in mastitis prevention.
- Adding the suggested amount and type of minerals such as (selenium), and vitamins such as (Vitamin A and E) to dairy cows feed can help boost their immunity system and help cow's body to fight off the mastitis pathogens. Proper amount of energy and protein are also needed for strong immune system.
- The use of dry cow antibiotic therapy and internal teat sealants help prevent fresh cowmastitis by helping to cure previous infection, while also helping to prevent new ones.
- The cow's udder should be washed with the detergent or hot water (76.6 C^0) than cleaned and dry before milking, after the milking teat dripping into the germicide is more effective for preventive of mastitis.

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