**CHAPTER IV**

**RESULTS**

**4 .1 Proportions of investigated areas and species of animals:**

The present study was designed to explore the prevalence of various disorders of hooves of cow causing poor production and health hazards and identification of risk factors associated, at different regions of Bangladesh. In Bangladesh, the highest (472) and lowest (3) number of cases were recorded from Thakurgaon sadar area, Birgonj upazila of Dinajpur. Chittagong Metropolitan Area (CMA), there is 400 cases are found. Most of the cases found on commercial dairy farm.

**Figure 13: Frequency of patients with hoof problems from study areas.**

**4. 2. Prevalence of different hoof problems:**

During the whole survey period a total of 500 cases were identified having hoof diseases. Among the animals the most and least common disorders recorded were fissure (37%) and crack (19%) accordingly. The comparative prevalence of different hoof diseases are shown in the Figure 2.

**Figure 14: Proportion of different hoof problems recorded in the study population.**

The surveyed data were processed and analyzed to observe the strength of correlation between the outcome and explanatory variables. It was found that only rearing system of cows was significantly associated (p<0.05) with the different hoof disorders. The details of the other relationship with their p values are illustrated in the Table 1.

**Table 1: Different explanatory variables with different types of hoof problems tested (using Chi square test)**

|  |  |  |  |
| --- | --- | --- | --- |
| Variables | Level | Hoof problems | *p*-value |
| **Crack****N (%)** | **Partially Brocken****N (%)** | **Fissure****N (%)** | **Swollen****N (%)** | **Multiple problems****N (%)** |
| Farm type | Backyard | 21 (19) | 21 (19) | 40 (37) | 17 (16) | 10 (9) | 0.82 |
| Commercial | 66 (17) | 76 (20) | 143 (37) | 76 (20) | 27 (6) |
| Season | Autumn | 37 (17) | 41 (19) | 79 (37) | 40 (19) | 16 (8) | 0.99 |
| Rainy  | 18 (18) | 19 (19) | 38 (38) | 19 (19) | 6 (6) |
| Winter | 32 (17) | 37 (20) | 66 (36) | 34 (18) | 15 (8) |
| Rearing system | Intensive | 85 (17) | 91 (19) | 182 (37) | 92 (19) | 37 (8) | **0.01** |
| Semi-intensive | 2 (20) | 6 (60) | 1 (10) | 1 (10) | 0 |
| Type of floor | Brick | 13 (20) | 13 (20) | 26 (39) | 12 (18) | 2 (3) | 0.29 |
| Concrete | 53 (16) | 72 (21) | 129 (38) | 60 (18) | 26 (8) |
| Combined | 21 (23) | 12 (13) | 28 (31) | 21 (23) | 9 (10) |
| Floor washing | BID | 55 (19) | 54 (19) | 111 (38) | 50 (17) | 19 (7) | 0.86 |
| SID | 8 (15) | 10 (19) | 19 (35) | 13 (24) | 4 (7) |
| TID | 24 (16) | 33 (21) | 53 (34) | 30 (19) | 14 (9) |
| Age (years) | ≤ 5 years  | 10 (12) | 19 (23) | 30 (37) | 18 (22) | 4 (5) | 0.19 |
| 6 to 8 years | 58 (17) | 66 (19) | 129 (37) | 68 (19) | 29 (8) |
| > 8 years | 19 (29) | 12 (18) | 24 (36) | 7 (11) | 4 (6) |
| Milk yield (liter) | < 10 Litres | 11 (12) | 20 (21) | 38 (40) | 17 (18) | 9 (10) | 0.76 |
| 10 to 14 Litres | 68 (19) | 68 (19) | 133 (37) | 66 (18) | 25 (7) |
| > 14 Litres | 8 (19) | 9 (21) | 12 (29) | 10 (24) | 3 (7) |

**4. 3. 1 Comparative prevalence of hoof disorders with farming system:**

From the study, it was observed that commercially reared cows (22%) showed more prone to hoof problem compared to backyard farming system (78%). Among those disorders, fissure and swelling of hoof are comparatively higher and common in both two types of cows. Therefore the overall prevalence of hoof disorders in different observation that was little difference reported between backyard and commercial farming (P>0.05) (Figure 3).

**Fig 15: Prevalence of hoof diseases in backyard and commercial dairy cows**

**4. 3. 2 Prevalence of hoof disorders according to season:**

The hoof disorders are more or less equally prevailed throughout the year. Among the three consecutive periods autumn, rainy and winter, the hoof diseases were found highest (42%) in autumn season and lowest (20%) in rainy season though the result was found statistically not significant (p>0.05) (Figure 4).

**Fig 16: Season specific prevalence of hoof diseases.**

 **4. 3. 3 Prevalence of hoof disorders according to rearing system:**

The study revealed that the prevalence of disorders was maximum in cows reared under intensive housing (98%) compared to semi-intensive (2%). Moreover, partially broken (60%) hooves mostly found in semi-intensive cows whereas fissured (37%) hooves found in intensive cows and the results were found statistically significant (p<0.05) (Figure 5).

**Fig 17: Prevalence of hoof disorders based on rearing system.**

**4. 3. 4 Prevalence of hoof disorders according to type of floor:**

According to the study, hoof disorders are highly related to the floor design. Fissured and cracked hooves are mostly observed in brick and concrete floor whereas rubber bedded cows showed lowest (P>0.05) (Figure 6).

**Fig 18: Floor specific prevalence of hoof disorders.**

**4. 3. 5 Prevalence of hoof disorders with frequency of floor washing:**

It was observed that the floor washing is less related for hoof disorders. The cows reared under twice washing of floor (BID) per day showed highest (58%) disorders while lowest (11%) in once (SID) though the findings were statistically non significant (P>0.05) (Figure 7).

**Figure19: prevalence of hoof disorders with frequency of floor washing**

**4. 3. 6 Prevalence of hoof disorders according to age:**

The survey revealed that the diseases of hooves were mostly prevailed in the cows of 6 to 8 years old. Fissured hooves were found more regardless of the age where cracked hooves were reported mostly in older animal though the results were not significant (p>0.05) (Figure 08).



**Fig 20: Age specific prevalence of hoof disorders.**

**4. 3.7 Prevalence of hoof disorders according to milk yield:**

The study finding also exposed that the hoof disorders were mostly found in the moderately high yielding dairy cows where the highest (72%) hoof disorders observed in the cows having 10 to 14 liter of milk yield per day (P>0.05) (Figure 9).



**Fig 21: Prevalence of hoof disorders based on milk yield.**