

INCIDENCE OF LIVESTOCK DISEASES IN NOMAL AND NALTAR VALLEYS GILGIT, PAKISTAN

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ABSTRACT:-A research project was undertaken to study the incidence of livestock diseases in Nomal and Naltar valleys, Gilgit. The data on cattle, goat, sheep and donkey were collected from the Animal Husbandry Department from 2003 to 2007. In total 19259 animals were found affected with various diseases. The disorders reported in the area were digestive diseases, infections, mastitis, reproductive diseases, endoparasites, ectoparasites, wounds, hematuria, respiratory diseases, emaciation, hemorrhagic septicemia, tumour, blue tongue, cow pox, enterotoxaemia, tetanus, paralysis and arthritis. In precise, endoparasites were found in 25.3% animals followed by respiratory diseases (24.74%). Most of the cattle (2053) and sheep (926) were found affected with endoparasites, whereas most of the goats (3960) were suffering from respiratory disorders. The seasonal data indicated that the incidence of diseases prevailed was high (33.94%) in winter while it was as low as 14.18% in summer.

Key Words: Nomal; Naltar; Livestock; Cattle; Goat; Sheep; Diseases; Endoparasites; Digestive System Disorders; Infections; Mastitis; Foot and Mouth Disease; Pakistan.

INTRODUCTION

Pakistan is endowed with diverse livestock genetic resources. Analysis of livestock population trends show that cattle population increased by 219%, sheep by 299% and goats by 650% in the last 45 years (Afzal and Naqvi, 2004).

Nomal Valley is located in district of Gilgit on the left of River Hunza about 25 km from Gilgit and has a covered area of 9 miles. On its east across the river is Hunza, Jutal village and in the west is Hichini Pasture. In its North across the River is Gouaches Village and Goro/Juglote, whereas Faiz Abad (Chilmis) and Karakorum International University, Gilgit-Baltistan are on the South and Naltar valley is in Northwest. The valley is inhabited by 6000 people.

People of Nomal valley are mostly employed in public and private sector

including self-employed businessmen. About 20% of population depends on the agriculture and very few on livestock for their livelihood. Agricultural land of this valley is mostly plain, fertile and suitable for all kinds of crops, vegetables and fruits.

Naltar is another beautiful valley, 35km from Gilgit. It is a forested (pine) village known for its wildlife and magnificent mountain scenery. Naltar is divided into two villages; Naltar Pine and Naltar Bala. Naltar Bala is bounded by Iskhkomen Harai and Pallo Peaks. Naltar valley has high vegetative growth and pastures for grazing of livestock.

Livestock are kept by the vast majority of households and household characteristics are typical of small-holder farming systems with relatively small land holdings

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supporting a mixed-species herd (Wardeh, 1989). Livestock are kept for (in approximate order of importance) milk, dung, butter, meat, transport, income, fiber, draught, tradition (Wright et al., 2003).

The livestock in valley is mainly owed by the Gujar tribe people. A considerable population of the Gujars lives in Naltar Bala. They subsist on both livestock and agriculture. Potato is the main crop of the valley. Gujars are not the original settlers of the Naltar valley. They came to settle in the valley over a century ago in search of pastures for their livestock.

There is scanty published information on diseases and health disorders which affect the livestock of Nomal and Naltar valleys. The principal objective of this research exercise was to document the incidence of diseases of livestock in Nomal and Naltar valleys of Gilgit.

MATERIALS AND METHOD

A study was undertaken on livestock diseases in Nomal and Naltar valleys of Gilgit. Primary data regarding the diseased animals were collected from the Veterinary Dispensary Nomal from January 2003 to June 2007. Cattle, goat, sheep and donkey were studied for the incidence of various diseases. Data was analyzed to see the incidence of various diseases and year, month, season wise trends of disease prevalence.

RESULTS AND DISCUSSION

The overall data on livestock diseases in Nomal valley during 2003-2007 indicated that 19259 animals were affected by various diseases / disorders. The highest number of animals were affected in 2004 (28.40%)

followed by 2005(28.13%), 2006 (23.18%), 2003 (12.26%) and 2007 (8.02%) (Figure 1). The overall affected animals in 2003 were 2361 which included 669 cattle, 386 sheep, 1212 goats, and 94 donkeys. In 2004 the overall affected animals were 5470, which included 1494 cattle, 3147 goats and 82 donkeys. In 2005 the affected animals were 5417, which included 1557 cattle, 505 sheep, 3319 goats, and 37 donkeys. In 2006 overall affected animal were 4465, that included 1546 cattle, 397 sheep, 2494 goats and 28 donkeys. Uptil April 2007, there were 1545 affected animals including 278 cattle; 154 sheep; 1103 goat and 10 donkeys.

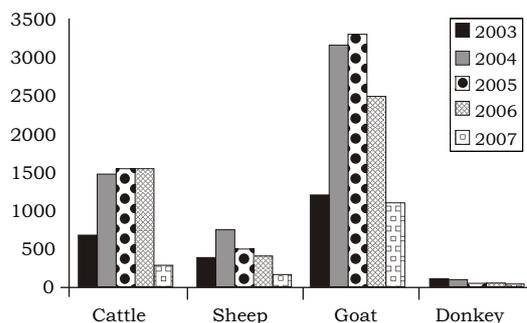


Figure 1. Year-wise livestock diseases in Nomal and Naltar Valleys

Season-wise analysis of livestock diseases indicated that the highest number of diseases (33.94%) occurred in winter (December, January, and February) followed by spring (29.53%), autumn (22.35%) and summer (14.19%). In winter the overall affected animals were 6536, which included 1373 cattle, 1057 sheep, 4053 goat and 53 donkeys. In spring (March, April, May), 5687 affected animals included 1283 cattle, 625 sheep, 3737 goats, and 52 donkeys. In summer (June, July, August) 2732 animals were found affected, which included 1161 cattle, 115 sheep, 1356 goat and 100

donkeys. In autumn 4304 animals were found affected, which included 1728 cattle, 401 sheep, 2129 goat and 46 donkeys (Figure 2).

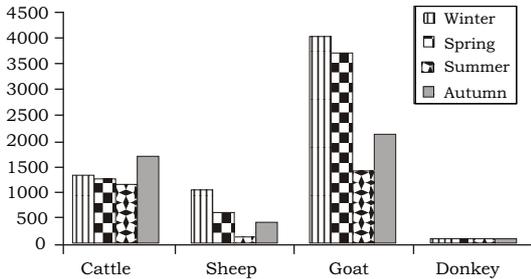


Figure 2. Season-wise livestock diseases in Nomal and Naltar Valleys

The data on month-wise livestock diseases indicated that the highest number of animals contracted diseases in April (13.28%) followed by 12.46% in December (Figure 3). The overall affected animals in April were 2549, of which 434 were cattle, 224 sheep, 1874 goat, and 17 donkeys. In December, the affected animals totaled 2400 of which 639 were cattle, 343 sheep, 1406 goat and 12 donkeys. In June, the incidence of diseases was low as overall affected animals were 788, which included 287 cattle, 21 sheep, 459 goat and 21 donkeys.

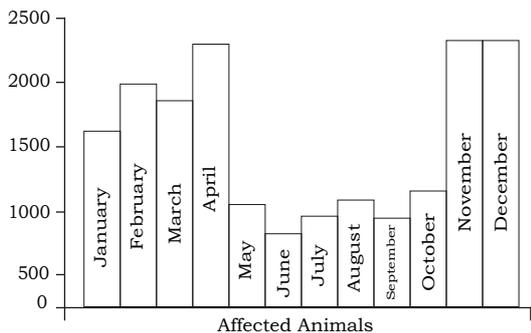


Figure 3. Month-wise livestock diseases in Nomal and Naltar Valleys

The highest number of affected animals (25.30%) was found with endoparasites (Table1). Endo-

parasites included liver fluke, worms, helminthes, worm infestation and acute fosciliosis.

The location-wise disease data indicated that there are total 15 places and overall 19259 animals were affected (Table 2). Most of the affected animals were found in the Sigal valley i.e., 4277 out of which 2091 were cattle, 274 sheep, 1865 goat, and 46 donkeys, this valley includes Khaltharote, Kamal Abad Khai and Jaffaria. Following the Sigal most of the affected animals were found in Naltar i.e., 3146 of which 23 were cattle, 515 sheep, 2605 goat and three donkeys. In Majinee mohalla overall 2145 affected animals were found, of which 708 were cattle, 359 sheep, 960 goat and 118 donkeys. In Jutal overall 1141 animals were found affected, which included 215 cattle, 29 sheep, 896 goats and one donkey. In Amin Abad, Ishpash, Batote and Sajjadia 1828 animals were found affected out of which 817 were cattle, 219 sheep, 771 goat and 21 donkeys. In Momin Abad affected animals were 1105, which included 476 cattle, 98 sheep, 513 goat and 18 donkeys. In Nomal Dass and Sadruddin Abad, the overall affected animals were 2335, which included 496 cattle, 467 sheep, 1371 goat and one donkey. In Jagot and Sadat Colony total affected animals were 411 which included 170 cattle, 51 sheep, 160 goat and 30 donkeys. The total affected animals in Gawach were 1512, which included 38 cattle, 70 sheep and 1404 goats. In Oshikhan Dass and Khan Abad the overall affected animals were 561 including 304 cattle, 45 sheep, 209 goat and 3 donkeys. In Damote, Dumial, Hussain Abad, Tormoi and Mehdi Abad there were overall 249

affected animal which included 108 cattle, 21 sheep, 110 goat and 10 donkeys. In Faiz Abad the overall affected animals were 96, which included 63 cattle and 33 goats. In Bar, Danyour, Haramosh, Juglote and Gilgit the overall affected animals were 412 which included 15 cattle, 40 sheep and 357 goats. In Nilt 15

affected cattle and 20 goats were brought to the veterinary hospital during the period under study. Few affected animals (7) were found in Rahim Abab, which included 6 cattle and 1 goat.

Zahid et al. (2005) investigated incidence of endoparasites in 100 and 157 young stock of Holstein-

Table 1. Frequency distribution of diseases/ disorders of livestock in Nomal and Naltar valleys, Gilgit during 2003-2007

| Disease | Cattle | Sheep | Goat | Donkey | Overall | Percentage |
|---|--------|-------|-------|--------|---------|------------|
| Digestive system Disorders ¹ | 837 | 260 | 1359 | 31 | 2487 | 12.91 |
| Infections ² | 519 | 42 | 429 | 16 | 1006 | 5.223 |
| Mastitis | 208 | 6 | 166 | 1 | 381 | 1.978 |
| Foot and Mouth disease | 135 | - | 43 | - | 178 | 0.924 |
| Reproductive Disorders ³ | 73 | 3 | 64 | 4 | 144 | 0.747 |
| Black quarter | 186 | 1 | 12 | - | 199 | 1.033 |
| Endoparasites ⁴ | 2053 | 926 | 1891 | 3 | 4873 | 25.302 |
| Ectoparasites ⁵ | 298 | 664 | 2928 | 3 | 3893 | 20.213 |
| Wound | 206 | 31 | 92 | 174 | 503 | 2.611 |
| Hematuria | 38 | 1 | 4 | - | 43 | 0.223 |
| Castration | 57 | 16 | 118 | - | 191 | 0.991 |
| Corneal opacity | 34 | - | 73 | 5 | 112 | 0.581 |
| Respiratory disorders ⁶ | 576 | 223 | 3960 | 5 | 4764 | 24.743 |
| Ketosis | 124 | 1 | 2 | - | 127 | 0.659 |
| Hemorrhagic septicemia | 136 | 2 | 16 | - | 154 | 0.799 |
| Tumors | 13 | - | 3 | 9 | 25 | 0.129 |
| Blue tongue | 1 | - | 1 | - | 2 | 0.010 |
| Cow pox | 12 | 10 | 90 | - | 112 | 0.581 |
| Enterotoxaemia | - | - | 11 | - | 11 | 0.057 |
| Tetanus | 1 | - | 1 | - | 2 | 0.010 |
| Muscular dystrophy | 4 | - | 2 | - | 6 | 0.031 |
| Arthritis | 4 | 2 | 10 | - | 16 | 0.083 |
| Stress | 30 | - | - | - | 30 | 0.155 |
| Overall | 5545 | 2188 | 11275 | 251 | 19259 | |

1. Digestive System Disorders: Diarrhea, Constipation, Over feeding, Indigestion, Swollen belly, Vomiting, Colic, Dyspepsia, Dysentery, Salivation, Cholera, Acidity, Anorexia, Tympany, Spasmodic coli, Bloat, Mouth ulcer, Rumen impaction, Hernia, Stomatitis
2. Infections: Ring worm, Dermatitis, Leg inflammation, Foreign body disorder, B.U. Dermatitis, Skin infection, Neck infection, I. infection, Retie infection, Ear sac, Jaw swelling, Swelling, Impaction, Physical impaction, Hoof flexion, Infection of hoof, Odema, Ulcer, abscess, Otitis, Pustules on body, H. sensitivity, Conjectivity, Fever, Nematode infection
3. Reproductive System Disorders: Ovarian cyst, Abortion, Phemosis, Vaginal Prolaps, U.prolaps, Anal prolaps, Vaginal dermatitis, Uterine infection, Vaginal secretion, Dystokia, Post partum bleeding, Bleeding, Bleeding after parcholation, Retention of placenta, Pyometra.
4. Endoparasite: Liver fluke, Worm, Helminthes, Worm infestation, Acute Foscioliosis.
5. Ectoparasites: Ticks, Flees infestation, Mites infestation, Maggots, Mange
6. Respiratory diseases: Bronchitis, Asthma, Pneumonia

Table2. Location-wise diseases in Nomal valley

| Location | Cattle | Sheep | Goat | Donkey | Overall |
|----------------------------|--------|-------|-------|--------|---------|
| Nomal Dass ¹ | 496 | 467 | 1371 | 1 | 2335 |
| Majinee Mohalla | 708 | 359 | 960 | 118 | 2145 |
| Nilt ² | 15 | - | 20 | - | 35 |
| Jutal | 215 | 29 | 896 | 1 | 1141 |
| Amin Abad ³ | 817 | 219 | 771 | 21 | 1828 |
| Momin Abad | 476 | 98 | 513 | 18 | 1105 |
| Naltar | 23 | 515 | 2605 | 3 | 3146 |
| Rahim Abad | 6 | - | 1 | - | 7 |
| Jugot ⁴ | 170 | 51 | 160 | 30 | 411 |
| Gawach | 38 | 70 | 1404 | - | 1512 |
| Sigal ⁵ | 2091 | 274 | 1865 | 46 | 4276 |
| Oshikhan Dass ⁶ | 304 | 45 | 209 | 3 | 561 |
| Damote ⁷ | 108 | 21 | 110 | 10 | 249 |
| Faiz Abad | 63 | - | 33 | - | 96 |
| Bar ⁸ | 15 | 40 | 357 | - | 412 |
| Overall | 5545 | 2188 | 11275 | 251 | 19259 |

1. *Nomal dass, Dass, Sadruddin Abad;*

2. *Nilt, Hichini;*

3. *Amin Abad, Ishpash, Batot, Sajjadia*

4. *Jagot, Sadat colony;*

5. *Sigal, Khaltharote, Kamala bad, Khai, Jaffaria*

6. *Oshikhan Dass, Khan Abad*

7. *Da,ote. Dumial, Hussain abad, Tormoi, Mehdiabad*

8. *Bar, Bar Dass, Danyour, Haramosh, Juglote, Gilgit*

Friesian and Jersey breeds, respectively. Young stock attaining the age of 9 months or more maintained at the Livestock Experiment Station, Bhunikey (Pattoki), District Kasur were selected for that study. Overall incidence of endoparasites in young stock of Holstein-Friesian and Jersey breeds was 39.00% and 38.21% respectively.

Following the endoparasites, 24.74% of the animals were found affected with respiratory disorders which included bronchitis, asthma and pneumonia. Ectoparasites were present in 20.21% of the total diseased animals of this area. Digestive system disorders, infections, mastitis, and black quarter were 12.91%, 5.22%, 1.98%, 1.03%, respectively whereas all other

diseases were less than 1%.

Mastitis was found in 381 animals, which produced teat ulcer, teat fibrosis, teat blockage and retention of milk. Among affected animals, 208 were cattle, 6 sheep, 1359 were goat and one donkey. The incidence of mastitis was about 1.97 % of the total affected animals. In the United States, mastitis is estimated to cause an annual loss of approximately 2 billion dollars (Schroeder, 1997). Losses are due mainly to reduction in milk quantity and to a lesser extent in milk quality. Classically, infections with bacteria such as *Streptococcus agalactiae*, *Staphylococcus aureus*, and *Escherichia coli* have been the main cause of bovine mastitis (Schukken et al., 2003). Intensive husbandry practices have been associated with an

increased incidence of mastitis caused by atypical bacterial agents such as *Streptococcus dysgalactiae* and *Mycoplasma bovis* (Pfützner and Sachse, 1996; Schukken et al., 2003). Despite decades of intensive research on bovine mastitis and extensive prophylactic and therapeutic measures, bovine mastitis remains a major problem in the dairy industry, and causal agents remain undiagnosed in a large proportion of cases ("sterile mastitis").

Foot and mouth disease was found in 0.92% of the diseased livestock of this area. About 187 animals were found affected with this disease, which included 135 cattle and 43 goats. The reproductive disorders found in the area were ovarian cysts, abortion, phemosis, vaginal prolaps, utrine prolaps, vaginal dermatitis, uterine infection, vaginal secretion, dystokia, bleeding after percolation, retention of placenta and pyometra. The reproductive disorders were found in less than one percent of the total affected animals.

According to Farooq et al. (2000) data on clinical records of 3760 crossbred cows at various locations in Khyber Pakhton Khawa (KPK) province revealed that genetic group, season and locality had significant effect on incidence of various reproductive abnormalities and reproductive disorders were more prevalent under stressful environment, within or around thickly populated areas, during hot summer months and among crossbred cows possessing Holstein Friesian inheritance above 50%.

It is well evident that endoparasites and respiratory disorders

were commonly found in the livestock of the area. The seasonal data indicated that the incidence of diseases prevailed was high (33.94%) in winter as compared to summer (14.18%). It is therefore concluded that by improving management practices and protection of animals in harsh winter season the incidence of diseases can be reduced.

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