

PREVALENCE OF AMPHISTOMOSIS IN VALLIKUNNU PANCHAYAT AND ITS LIKELY IMPACT ON MILK PRODUCTION

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Introduction

In most cattle-producing areas of the world, infestation by helminth parasites (particularly gastrointestinal nematodes) is considered to be a primary cause of production loss. Among the parasitic infections of dairy cattle, amphistomosis found to be one of the major problems affecting cattle health and production. Apart from production loss, it also contributes to reduction in quality of milk. A project was undertaken at Vallikunnu Panchayat of Malappuram District to collect specific scientific data on the impact of Amphistomosis on the quantity and quality of milk in dairy cattle. In the present study, which is a part of the project funded by the department of Animal Husbandry, Kerala, areas of high prevalence of amphistome infestation were identified. Morning milk production, SNF, Total solids and fat percentage of 221 animals were examined. Also California mastitis test were conducted.

Materials and methods

The study was conducted during the pre-monsoon period (from 20-04-2007 to 17-05-2007). Fresh dung samples and milk samples from all the four quarters were collected from randomly selected dairy cattle from all the 22 wards of the Panchayath. All the dung samples were screened for presence of Amphistome egg by direct microscopic examination after concentration by centrifugation. Animals were grouped based on the presence and absence of amphistome egg in the dung sample. Fat percentage of milk samples were estimated by Gerber's method. From the fat percentage and corrected lactometer reading, solids not fat (SNF) and Total solids (TS) were estimated. California Mastitis Test (CMT) was performed on all milk samples. Milk

samples from the four quarters of each animal were the pooled and Lactometer reading was noted.

Results

Out of 221 dung samples screened for presence of Amphistome egg, 92 samples found positive. A high prevalence of Amphistomosis was observed (41.63%) in Vallikunnu Panchayath. The ward wise distribution of positive cases is given in Table 1. The schematic representation of prevalence of Amphistomosis in Vallikunnu Panchayath is plotted in Figure 1.

The mean morning milk yield, lactometer reading, milk fat percentage, total solids and SNF of Amphistome positive and negative cases are given in Table 2. The mean morning milk yield of Amphistome positive and negative animals were 3.56 and 3.69 litres respectively. Most of the animals in both groups were under semi intensive system of rearing. The mean fat percentage of both Amphistome positive and negative groups was 3.13%. No difference in average fat percentage of milk due to Amphistomosis was noticed. But average Total Solids percentage in Amphistome positive samples was 11.57 where as in that of negative samples was 12.01. The SNF percentage in positive and negative groups was 8.48% and 8.88% respectively. The average morning milk yield, fat percentage, total solids and SNF were given in Figure 2.

The samples from each quarter were subjected to CMT and results were noticed. Higher percentage of sub clinical mastitis was noticed among animals of Amphistome negative group (7.52%) against positive group (4.35%).

Figure 1. The areas where Amphistomosis cases noticed is plotted against geographical land forms of Vallikkunnu Panchayath

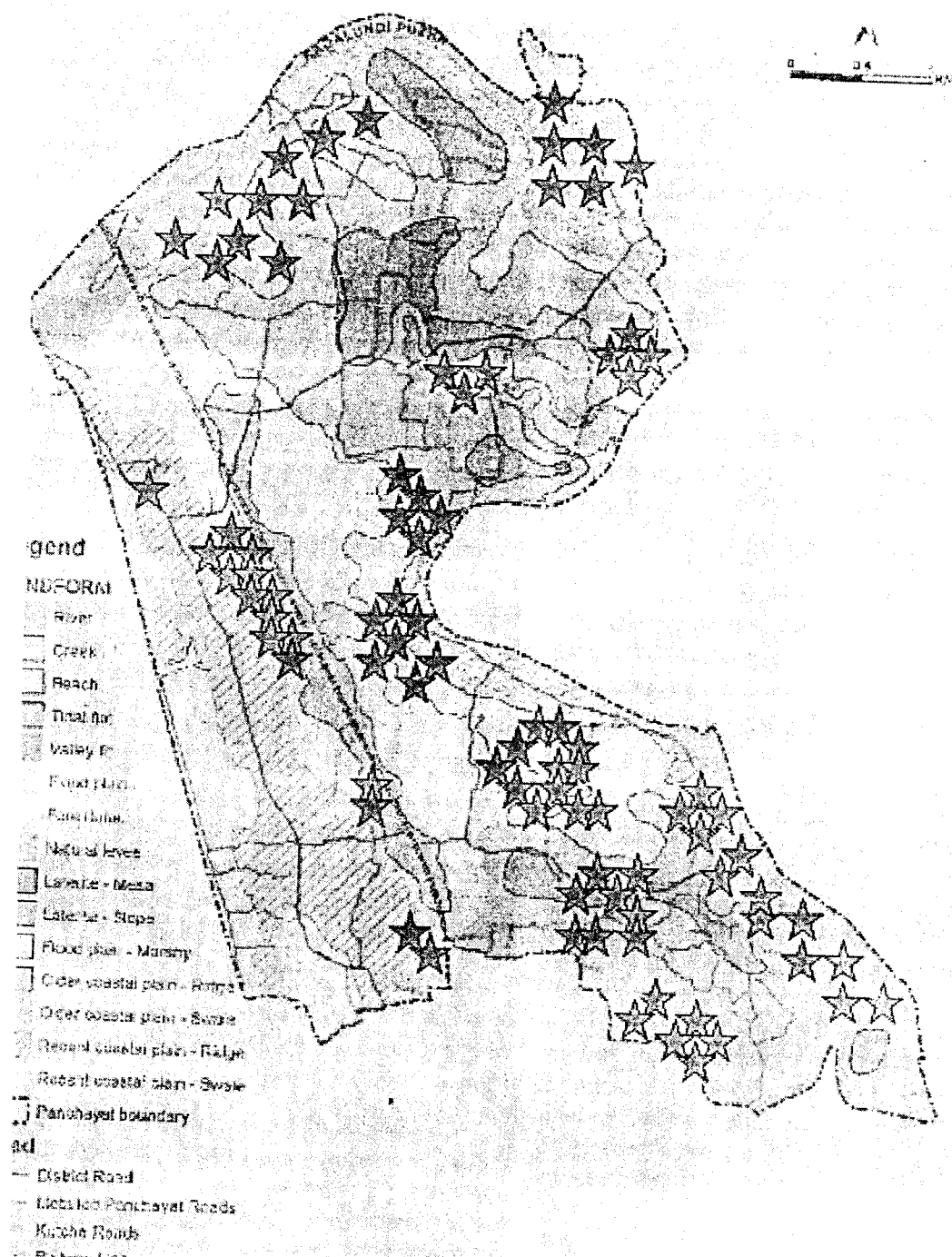


Figure 2: The average morning milk yield, Lactometer Reading, Fat Percentage, Total Solids and SNF in both Amphistome positive and negative groups.

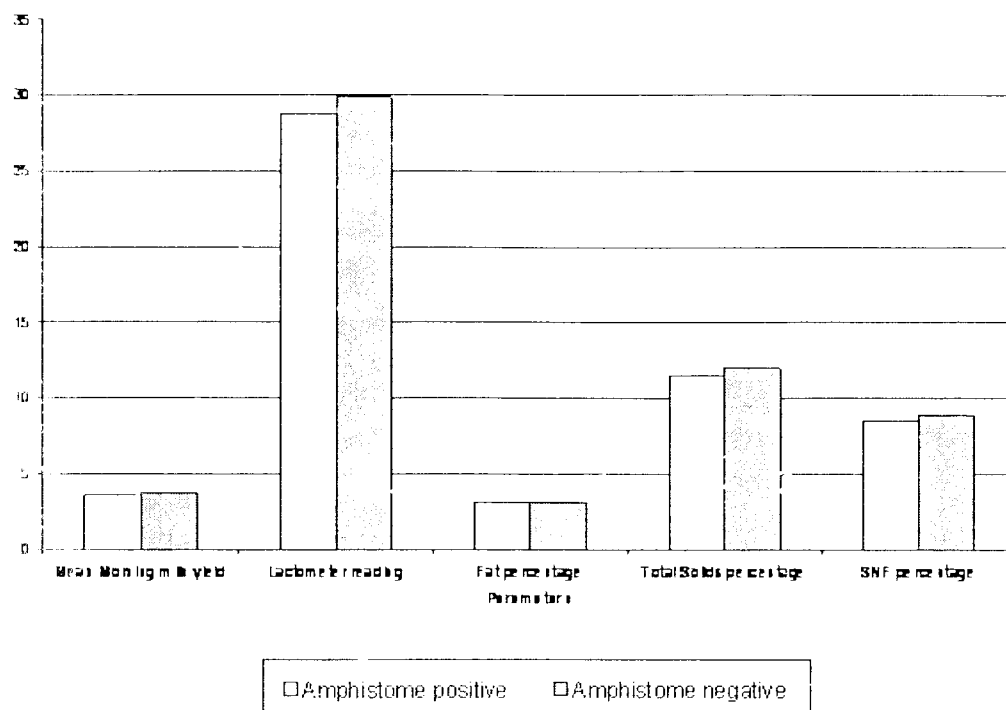


Table 1: Ward wise distribution of Amphistome positive cases in Vallikkunnu Panchayath

Ward	No. of positive samples	Ward	No. of positive samples	Ward	No. of positive samples
1	0	8	6	15	10
2	0	9	4	16	2
3	0	10	5	17	2
4	9	11	7	18	1
5	0	12	13	19	11
6	0	13	6	20	0
7	0	14	7	21	0

Table 2: The mean morning milk yield, lactometer reading, milk fat percentage, total solids and SNF of Amphistome positive and negative cases

Parameter	Mean value in Amphistome positive group	Mean value in Amphistome negative group
Mean Morning milk yield	3.56	3.69
Lactometer reading	28.76	29.84
Fat percentage	3.13	3.13
Total Solids percentage	11.57	12.01
SNF percentage	8.48	8.88

Discussion

Prevalence of Amphistomosis in Vallikkunnu Panchayath was observed to be 41.63% in the present study which is considered to be very high and needs quick intervention. Various control measures including chemotherapy, biological control, control of intermediate hosts and sanitary measures must be considered. Prevalence of Amphistomosis was observed to be high in banks of marshy, flood plains of the Panchayath. Control measures are to be concentrated in these areas.

Average morning milk yield was affected by 0.11 litres due to Amphistomosis. High percentage of sub clinical mastitis among the negative group might have reduced the difference in average morning milk yield between the groups. It is also observed that Amphistomosis did not significantly affect the fat percentage of milk. This could be due the fact that these animals were maintained in different plane of nutrition and under the management of different

individual households. But the percentage of SNF and Total solids were significantly affected by Amphistome infestation.

Reference

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