



# Therapeutic Evaluation of Indigenous Veterinary Medication for Endoparasite Infestation in Bovines Under field Conditions

## KEYWORDS

Indigenous, veterinary, endoparasite, adoption, knowledge

**Dayabhai Bharwad**

Indigenous Veterinary healer.

**Vipul Vasan**

Scout, who had identified the traditional livestock healer.

**Dr Amol S Kinhekar**

National Innovation Foundation-India, Satellite Complex, Ahmedabad

**Dr.Vivek Kumar**

National Innovation Foundation-India, Satellite Complex, Ahmedabad

**Dr Ravikumar R K**

National Innovation Foundation-India, Satellite Complex, Ahmedabad

**Dr.Vipin Kumar**

National Innovation Foundation-India, Satellite Complex, Ahmedabad

**ABSTRACT** Endoparasite infestation is an important challenge for welfare of animals and livestock productivity as the ailment is widely prevalent. The system of livestock farming have to be less input driven so that farmers can maximize the return through optimum productivity. However, ignorance of farmers, resistance developed by endoparasites and lack of availability of medications are serious challenges. Worms (endoparasites) are important etiological agents causing diarrhea in farm animals. Indigenous veterinary medications prevailing in many parts of the country can able to fill this void upon scientific validation. The research study had conducted experimentation on affected animals by administering polyherbal medication AHP/DIA/RM under field conditions. The study had illustrated that the medication had significantly reduced the parasitic egg count after 4 days of treatment. These herbal medications are available in livestock farmers locality and efforts needs to be carried out in sharing these findings to community so as to utilize the natural resources for affordable animal welfare. Stakeholders such as cooperative dairy societies, animal husbandry department needs to strengthen adoption of these sustainable practices and to maintain these knowledge in future.

**1: INTRODUCTION**

Farm animal welfare and enhanced productivity are affected by endoparasite infestation (Jain and Sahni, 2010). The ailment is widely prevalent in India and affects livestock population irrespective of age, sex, breed and season (Jyoti et al., 2012; Varadharajan, A., and Vijayalakshmi, R., 2015). Development of resistance against commercial drugs by different endoparasites are confirmed (Singh et al., 2014).

Research studies have to focus on reducing cost of production in control of endoparasite infestation (McLeod, 1995). In this aspect, herbal medications particularly indigenous veterinary medications can be an important means for livestock farmers (Offiah et al., 2011; Jain., 1999). It was felt that efforts to identify various measures to integrate them for farm animal welfare have to be strengthened (Burke et al., 2009).

Animals affected with endoparasites (worms) develop clinical symptoms such as diarrhea, inappetite, potbelly and detection of worms in dung (Zhai et al., 2014; Nabukenya et al., 2014). Many of these medications are in use for sustainable agriculture, however large scale adoption was hampered due to lack of scientific validation. The study is an attempt to evaluate the efficacy of an antidiarrhoeal veterinary medication among farm animals.

**2: MATERIALS & METHODS:**

The study was conducted as field experiment with help of livestock owners. Farm animals were observed for clinical symptoms such as inappetite, lacrimation, pot belly and diarrhea. A total of eight animals confirmed with clinical symptoms were selected.

**2.1 Inclusion criteria:**

Dung sample of cattle and buffaloes with presence of par-

asitic egg or oocyst are purposively selected. The presence of parasitic egg in dung were evaluated through direct dung smear examination.

**2.2 Administration of medication**

The selected animals were administered the polyherbal medication AHP/DIA/RM of 50 grams twice a day for a period of three days.

**2.3 Analysis of parasitic egg count**

The level of parasitic egg or oocyst count was counted before administration of antidiarrhoeal medication by examining one gram dung sample that was placed on glass slide as per standard protocol. After treatment period, post tests were administered on 4<sup>th</sup> day of experiment and difference was evaluated.

**2.4 Statistical analysis**

The experimental animal population are dependent and the data obtained was analysed through t-test (Gupta, 2000).

**3: RESULTS :****TABLE – 1 Efficacy of medication**

SN	PEC (Before)	PEC (After)	d	d <sup>2</sup>
1	50	1	-49	2401
2	45	100	55	3025
3	100	15	-85	7225
4	55	10	-45	2025
5	80	10	-70	4900
6	110	4	-106	11236
7	100	5	-95	9025
8	100	5	-95	9025
			∑d=-490	∑d <sup>2</sup> =48862

\*PEC: Parasitic egg count

The data represented in Table -1 indicates the level of parasitic infestation among experimental animals, before and after administering indigenous veterinary medication. The calculated value of  $t$  at 7 degree of freedom was 3.33 at 5 percent level of significance. It is more than the table value of  $t_{0.05}$  which was 2.36 and hence it can be concluded that the efficacy of the medication AHP/DIA/RM was found significant in protecting farm animals from endoparasites.

#### 4. DISCUSSION:

The experimental study found that anti-diarrheal test medication had significantly reduced parasitic egg or oocyst count. This had confirmed the efficacy of the medication in control of endoparasite infestation. The medicinal plants

of indigenous veterinary medication were native to the region and available widely. These scientifically validated test results needs to be shared to farmers. This will help in installing necessary confidence among livestock owners in understanding the role of plants as claimed by traditional livestock healer(s). Such validated knowledge conserved by indigenous system can be sustained for future generation. Similar model of validating documented knowledge through on-farm experimentation and sharing to knowledge holders, community, end-users will strengthen indigenous system. This will aid in enhancing productivity of small holders livestock system through less input and also reassures farm animal welfare.

#### REFERENCE

- [1]Burke, J.M., Wells, A., Casey, P. and Kaplan, R.M. (2009). Herbal dewormer fails to control gastrointestinal nematodes in goats. *Veterinary Parasitology*, 160: 168–170. || [2] Gupta, S.P., (2000). *Statistical Methods*, Sultan Chand & Sons, New Delhi. || [3]Jain S.K., (1999)*Dictionary of Ethno Veterinary Plants of India*, Deep Publications, New Delhi. || [4]Jain, S. and Sahni, Y.P. (2010). Biochemical Changes in Goats treated with anthelmintic indigenous herbs. *Veterinary World*, 3(7): 315-317. || [5]Jyoti, N. K. Singh, P.D. Juyal, M. Haque and S.S. Rath.(2012). Epidemiology of gastrointestinal parasites in buffalo calves of Punjab state. *Journal of Veterinary Parasitology*, 26(1) : 19-22 || [6]Mcleod, R.S. (1995). Cost of major parasites to Australian livestock industries. *International journal for parasitology*, 25(11): 1363- 1367. || [7]Nabukenya, I., Akiiki, C.R., Olila, D., Ikwap, K., and Hoglund, J. (2014). Ethnopharmacological practices by livestock farmers in Uganda: Survey experiences from Mpigi and Gulu districts. *Journal of Ethnobiology and Ethnomedicine*, 10(9):1-13 || [8]Offiah N. V., Makama S., Elisha I. L., Makoshi M. S., Gotep J. G., Dawurung C. J., Oladipo O. O., Lohlum A. S., and Shamak D. (2011). Ethno-botanical survey of medicinal plants used in the treatment of animal diarrhoea in Plateau State, Nigeria. *BMC Veterinary Research*, 7:36. || [9]Singh, G., Singh, R., Verma, P.K., Rastogi, A., Singh, R., Wazir, and Anand, A. (2014). Anthelmintic evaluation of aqueous extract of *Vernoniaanthelmintica* (L.) Willd against *Haemonchuscontortus* of sheep and Goats. *The Indian Veterinary Journal*, 91 (03): 92-93. || [10]Varadharajan, A., and Vijayalakshmi, R. (2015). Prevalence and seasonal occurrence of gastrointestinal parasites in small ruminants of coastal areas of TamilNadu. *International Journal of Scientific and Research Publications*, 5(2): 1-6. || [11]Zhao, S L., Wen, X .H.,Lv, D . H., Sun, M . F., Zou, F.C., Wei, W.K., 2014. Severe diarrhea due to mixed infection of tapeworms and whipworms in black goats. *Global Journal of Agriculture and Agricultural Sciences*, 2 (4):181-183. |