

OBSERVATIONS ON SOME “POUR ON” DRUGS

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ABSTRACT

Studies were conducted on 20 animals, including four buffalo calves, four buffalo heifers, four lactating crossbred cows and eight lactating Murrah buffaloes, suffering from ecto/endo parasites, dermatitis etc. The animals were divided into four comparable groups of one or two each as limited number of animal suffering from parasitic infestation, lice, ticks, mites, maggots and dermatitis were available. Three patent drugs having Moxidectin (Cydectin) Acaricide Pyrethroid (Poron) and Flumenthrin (Bayticol) as active compounds were used in prescribed doses of 1 ml/ 10 kg body weight and poured over the vertebral column from the occipital condyl to the base of the tail only once. All observations like skin conditions of infestation of lice, ticks, mites, alopecia and dermatitis, body weight and milk production were recorded before starting the experiment and at the close of the experiment after two months, Group 1 served and control © where only ordinary water was poured on. Treatment 1 (T₁) was Moxidectin, Treatment 2 (T₂) Acaricide pyrethroid and treatment 3 (T₃) Flumenthrin.

The results revealed that body weight gain was better in T₁ though there was increase in body weight in all the groups due to normal growth factors in buffalo calves and buffalo heifers, lactating crossbred cows and lactating Murrah buffaloes. Similarly the increase in milk production and a nil (milk) with holding were recorded better in T₁ followed by the other two. The animals recovered from all skin ailments of ticks, lice, flies, mites, maggots alopecia and dermatitis. “Pour on” drugs

can be recommended for whole herd including milkers, replacement heifers, young calves, dry animals and bulls because it is non toxic and without side effects.

Keywords: drugs, parasite, dermatitis, buffalo

INTRODUCTION

Pour on solutions of several drugs have been claimed to act against dermal infections in cattle, buffalo and wild bovines even pasture and gastrointestinal infestations by avoiding disease stress over the animals. The drugs have been reported to cause increase in body weight, milk production and general health. The infections occurs from cattle ticks (*Boophilus micro plus*), lice (*Linognathus vituli*, *Haematopinus eurysternus*, *Salenopotes capillatus*, *Bovicola bovis*) and mange mites (*Chorioptes bovis*, *Sarcoptes bovis*, *Psoroptes ovis*) buffalo fly (*Haematobia irritans exigua*) lung worm (*Dictyocaulus viviparous*) and gastrointestinal worms of *Haemonchus*, *Ostertagia*, *Trichostrongylus* and *Oesophagostomum* species. All these infestations lead to reduction in growth, production, reproduction and general performance due to disease stress and higher levels of circulatory biogenic amines have a depressing effect on the levels of the above mentioned parameters as they reduce levels and neutralize effects of beneficial hormones, thus causing reduced metabolism in the body and poor performance.

MATERIALS AND METHODS

Infestation of ectoparasite was observed in buffalo calves buffalo heifers, lactating crossbred cows, and lactating Murrah buffaloes on two dairy farms. Affected animals showed alopecia, pyoderma, pruritis and lice, ticks, maggots, mites, and their eggs on the body. The total of 20 animals consisted of four groups: four buffalo calves of 2-3 months of age, four buffalo heifers 2-2.5 years of age, four crossbred cows of second lactation, and eight lactating buffalo of second / third lactation, all having ecto / endo parasites infestation. Each group was divided into four comparable groups of one or two animals depending on availability. Group 1 served as control (c) Group 2 as (T₁), Group 3 as (T₂), Group 4 as (T₃). Ordinary water was poured on Group 1, Moxidectin on T₁, Acricide pyrethroid on T₂, and Flumenthrin on T₃, from the occipital condyl to the base of the tail in sunny weather. Three patent drugs, viz. Cydectin (Moxidectin) Poron (Acricide Pyrethroid) and Bayticol (Flumenthrin), and water were used in the prescribed doses of 1 ml/10 kg body weight.

The “pour on” solutions of drugs have been claimed to act against dermal infestations of animals ticks, lice, mites, buffalo flies, lung worms and gastro intestinal worms of several species thus favouring growth, production, reproduction and general performance. Skin conditions of alopecia, dermatitis, infestation of lice, tick, mites, flies, maggots, presence of eggs etc are cured. Milk production, milk withholding time and body weight were recorded at the beginning, during and at the end of, 2 months’ treatment.

RESULTS AND DISCUSSION

Efficacy of various “pour on” solutions against ecto parasites and dermatitis infestation as well as, body weight gain and milk production in the lactating cows and buffaloes are presented in Tables 1-3. Recovery in dermatitis cases started on the third/ fourth day and all ecto parasites like lice, ticks, mites and their eggs disappeared from site of infestation and all animals recovered completely with in 21 days. At the end of 2 months, during October, the body

weight and milk production showed significant (P<0.05) increase in all groups of cows and buffaloes with a zero milk withholding time in T₁ (Table 2, 3). Two buffalo calves of T₂ and T₃ died of Pnumonia due to cold after “pour on” treatment. Infestation of worms, sucking and biting lice, ticks, mites, etc, put the animals under stress and thus reduced there performance and increased milk withholding time to a greater extent. Control of cattle tick (*Boo philus micro plus*) is a major problem, as well as, other soft and hard ticks, lice and worms leading to secondary microbial, fungal invasions. Medications is stressful for both farmer and his herd/flock. Growth, production and reproduction in livestock are governed by genetic potential of animal and its exploitation through better housing, feeding, breeding and health management. Production performance can be enhanced from 20 to 40% even more, simply through better management of health, housing, feeding and breeding. (Singh *et al.*, 2003, 2005). While grazing, the animal picks up larvae of *Ostertagia ostertagi* (Brown stomach worm), Stomach hair worm, (*Trichostrongylus oxei*), Barber’s pole worm (*Haemonchus placei*) and lung worm (*Dictyiocaulus viviparous*) etc. Therefore, grazing pastures must also remain free of parasitic invasion, where pour on drugs like Moxidectin are reported effective as well as others.

As the saying goes “the fewer the parasites, the greater the productivity”. Pour on drugs seem to have no adverse effect on milk production, as usually in all drug administration (oral/parental/ external) there is additional stress over animal which reduces its productive, reproductive, growth and general performance.

Any type of stress (physiological, drug, nutritional, disease, social, environmental etc) causes increase in circulatory biogenic amines (histamine, tryptamine and tyramine), which on the contrary reduce the metabolic activity of animal and thus adversely affect the growth, production, reproduction and general performance of animal by suppressing beneficial hormones of the animal (Singh and Satija, 1989; Singh *et al.*, 2003, 2005; Singh and Handa, 2005). Pour on drugs can be recommended for young, growing, working and lactating animals as they are easy to administer, safe, nontoxic, water resistant, and economical, and kill and control many ecto / endo parasites. They are safe for dung beetles

which help in increasing soil fertility, soil aeration as well as removing breeding sites for worm larvae, buffalo flies, and nuisance flies from pastures.

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Table 1. Pre and post treatment observations of pour on drugs.

Type of Animals	Number of Animals	Observations
1. Buffalo calves	4	1. Nuisance flies stopped hovering over animals just after pour on application.
		2. Lice, ticks, mites, and their eggs disappeared on the second or third day. Similarly, maggotic wound started healing and fully recovered on the tenth day.
		3. Recovery of dermatitis, alopecia started on seventh day.
2. Buffalo heifers	4	4. Skin condition started improving on seventh day with hair growth on alopecia patches and recovered by 60 th day.
3. Lactating crossbred cows	4	5. General health condition started improving after a week.
		6. Milk production started improving after a week.
		7. Milk production increased significantly ($p < 0.05$) after two months of treatment as compared to control.
4. Lactating buffaloes	8	8. Body weight increased significantly ($p < 0.05$) after two months' treatment as compared to control.

Table 2. Milk production per day (L.).

	C Start - End	T1 Start - End	T2 Star - End	T3 Start - End
Lactating (crossbred cows)	15 - 16	17 - 20**	16 - 18**	17 - 19**
Lactating buffaloes	8 - 9	7 - 10**	8 - 10**	9 - 10

Table 3. Body weight gain after 60 days (kg).

	C Start-End	T1 Start-End	T2 Star-End	T3 Start-End
Buffalo calf	36 - 39	36 - 41**	died	died
Buffalo heifer	180 - 184	178 - 186**	179 - 185**	181 - 185**
Crossbred cow	501 - 506	502 - 510**	498 - 505**	499 - 505**
Lactating buffalo	550 - 554	551 - 559**	550 - 557**	551 - 557**

(**P < 0.05)

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Experimental animal after “pour on” treatment.

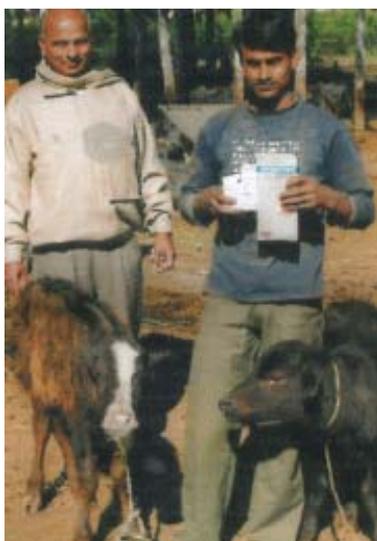


Figure 1. Buffalo calves.



Figure 2. Buffalo heifers.



Figure 3. Lactating crossbred cows.



Figure 4. Lactating Murrah buffaloes.