

## EFFECT OF FEED SUPPLEMENT (CALAMOR GOLD- LIQUID) AT DIFFERENT POST PARTURITION DAYS ON THE MILK PRODUCTION OF LACTATING COWS IN DIFFERENT SEASONS

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### ABSTRACT

The current study was planned to evaluate the effect of dietary supplementation with liquid feed supplement (Calamor Gold- Liquid) on the milk production and reproduction. The study was conducted on 30 lactating HF cross Cow during Hot and in the cold season. The lactating cows were divided into three same groups of 10 cows each basis of their post-calving period. Dreaming of all the cows were done with Fenbendazole (Tablet) and supplemented with Calamor Gold- Liquid@ 100 ml /day for a period of 60 days. Supplementation of Calamor Gold liquid feed resulted in an increase in milk production during the 1st week and this increasing trend keeps going up in following weeks of lactation. The final increase in milk production was 12.39 % in hot season and 12.01 % in cold season. The overall conception rate during the study was much higher in the winter time period and lesser during summer time.

**KEYWORDS:** HF Cross, Calamor Gold, Conception. Amornvet Health

### INTRODUCTION

India is a country which lives in its villages. A more than 70 % of the total population still lives in villages and their livelihood is dependent mostly on agriculture. Animal Husbandry are especially rearing Cow and buffalo is one of the key activities which mostly every rural household pursues with keen interest. In India the biggest contributor of milk production is buffalo as its milk is high in fat, but of late people are now converting towards exotic breeds such as Holstein Friesian. The reason for this is the much higher milk production with an almost similar level of investment in feed and fodder. Due to these changes and higher milk yield India has achieved Number one status in milk production in the world. Animals on farms are mainly fed green roughage of mainly grasses such as legumes, Napier, Cow pea and silage made of corn. The level of concentrate is always compromised due to increase in cost.

Hence, overall milk production of exotic cattle hovers around 15-20 liter daily. Even though exotic animal gives higher milk production, but they also require better management than domestic breeds and buffalo. The mismanagement at the farm sometime plays a crucial role and does not allow animal to achieve the maximum performance potential. Also, improper nutrition adds to various reproductive disorders, especially during the transition period which leads to stage like anestrous, repeat breeding and various others. Increasing the intake of a proper ration during early stage lactation i.e. 1<sup>st</sup> to 7<sup>th</sup> weeks after calving results in getting a better peak of milk yield as this is the period during which nutrient demand is very high for milk production (Habib, 2009). So it means that a lactating cow diet should have an adequate, balanced ration as well have a supplementation of good quality mineral mixture with salt.

Going in this direction present study was planned to find out the effect of feed supplement during different post parturition days on the performance of lactating cows during different seasons.

## **MATERIALS AND METHODS**

The present study was conducted under the sponsorship by Amorvet Animal Health India for evaluating, the new product developed. The trials study was conducted on three progressive dairies of the district Dhar, Madhya Pradesh during the hot period and colder seasons of the year April, 2016 to March, 2017. The care was taken in selecting of cows as the selected cows were coming under the IInd or IIIrd lactation of their life. The lactating cows selected were divided into three similar groups of 10 each on the basis of their post parturition days i.e. Group-1 of 15–30 days, Group-2 of 30–45 days and Group-3 of 45–60 days. The trial study was conducted on 30 lactating cows during summer and the same number of cows during winter season. In the selected HF cows drenching was done with Fenbendazole tablets during both the seasons and simultaneously was given 100 ml of highly bio-available calcium, phosphorus and vitamins & galactagogue herbs (Calamor Gold, Amorvet Animal Health India Pvt. Ltd.) Per Cow per day for a duration of 50 days. The nutritional value per 100 ml liquid feed supplement Calamor Gold is: Calcium: 6100 mg, Phosphorus: 3050 mg, Vitamin D3: 12000 IU, Vitamin B12: 100 mg, Carbohydrates: 25000 mg, Vitamin A 45000, Chromium 200 p.p.m., Zinc 1500 mg, Silymarin 450 mg, copper 500 mg.

The average cow's weekly milk production total data recorded through a well defined Performa. Before starting of trial study the Base Milk Production (BMP) of all cows was observed during both the trial period. Statistical analysis, table form and percentage were used as method to accurately analyze the data observed during the trial.

## **RESULTS AND DISCUSSIONS**

The results such as cow milk production were recorded during various lactation weeks (Avg. Yield /day) before and after the start of the experiment (Table 1). Observation of the study was distributed into two parts: (a) Milk production of cows and (b) Conception of cows.

### **Milk production of cows:**

In Cow group 1, the per day average Base Milk Production of the cows was 17.00 liters in summer and 17.30 liters in winter season. In the cow group 2, the per day average Base Milk Production was 17.95 liters in summer and 18.60 liters in winter season, which was highest among all the 3 cow groups. In cows group 3, the per day average Base Milk Production of the cows was 16.40 liters in summer and 17.80 liters in winter season. Base Milk Production of cows was less in summer season as compared to the winter season in all HF cow groups. This difference in milk production during season attributed to many factors such as more availability of green forage as well stress level especially heat stress during the winter. Hence clearly indicated the season also does affect milk production in the cows.

The per day overall milk production recorded in cow group 1, was 19.03 liters in summer and 19.27 liters in winter season. In cows group 2, the per day overall milk production of the buffaloes after the experiment was 20.46 liters in summer and 21.21 liters in winter season, which was highest among all the three cow groups. In cows group 3, the per day overall milk production of the cows was 18.23 liters in summer and 19.69 liters in winter season. The cows in Calamor Gold supplemented group kept peak milk yield during the time duration of 7 weeks, thereafter it was observed to start declining slowly.

As shown in Table 1, all the cow groups in both seasons were equal in terms of milk production prior to supplementation. Supplementation of Calamor Gold resulted in a sudden increase in milk production from the first week and keep on increasing in subsequent weeks of lactation period. All these results which were found out were analyzed through statistics. During this analysis the variance has shown a significance level at 5% in terms of milk production after parturition days. These results probably due to high energy supplementation by Calamor Gold which helps cows to come out of negative energy balance. The present study has revealed that there was per day increase in milk production of the cow groups during both the climates. In cows group 1, the total increment per day per cow was 11.94 percent in hot and 11.38 percent in cold season. In cows group 2, the percent increment per day per cow milk production was 13.98 per cent in summer and 14.03 percent in winter. In cows group 3, the increase per day per cow milk production was 11.15 percent in summer and 10.61 percent in winter season. The overall increase per day per cow milk production was 12.39 percent in summer and 12.01 percent in winter season. The data indicated higher milk production in the summer season as compared to winter season. However, this increase was found to be nonsignificant on statistical analysis. Besides, the lower milk yield of the winter season was mainly due to feeding all experimental cow groups with dry fodder only. This might have caused less milk production of cows in the winter season as compared to summer season. The results are comparable with the earlier studies under field condition (Gosh, and Chatterjee, 2001, Singh and Singh, 2006 and Verma et al., 2009).

#### Conception of cows:

Timely conception of cow after calving is one of the most important factors for economical cow Farming. In this study the observations on the conception rates after calving, days were also observed. In cow group 1, the conception rate was 35 per cent in summer and 44 per cent in winter season. In cow group 2, it was 45 per cent in summer and 60 per cent in winter season, whereas in cow group 3, the conception was 40 per cent in summer and 75 per cent in winter season. The overall conception rate was higher in winter season (55%) and less in summer season (30%). During the study overall successful conception rate, according to the number of inseminations was around 37 % in summer season while 69 % conception recorded during winter time.

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**TABLE-1. Effect of Calamor Gold on Milk production in HF Cows**

HF Group	Time Period	Weather	Minimum Base level Milk Production	After Supplementation Calamor Gold Milk Production (Liters)							Milk Production (per day in liters)	
				Week-1	Week-2	Week-3	Week-4	Week-5	Week-6	Week-7	Average	Difference
I	15-35	Hot	17.00	17.40	18.20	18.90	19.45	19.75	19.77	19.77	19.03	2.03(11.94)
		Cold	17.30	17.45	18.43	19.05	19.63	20.04	20.15	20.15	19.27	1.97(11.38)
II	35-50	Hot	17.95	19.10	19.55	20.25	20.70	21.10	21.25	21.26	20.46	2.51(13.98)
		Cold	18.60	19.95	20.44	20.95	21.42	21.90	21.92	21.92	21.21	2.61(14.03)
III	50-65	Hot	16.40	16.80	17.35	17.95	18.50	19.00	19.00	19.01	18.23	1.83(11.15)
		Cold	17.80	18.20	18.70	19.37	20.02	20.50	20.55	20.54	19.69	1.89(10.61)
Avg.		Hot	17.11	17.76	18.36	19.03	19.55	19.95	20.00	20.01	19.23	2.12(12.39)
		Cold	17.90	18.53	19.19	19.79	20.35	20.81	20.87	20.87	20.05	2.15(12.01)