EFFECT OF FEEDING POLYHERBAL GALACTOGOGUE ON MILK YIELD AND QUALITY IN LACTATING CROSSBRED COWS

P.R. Jopulkar, S.H. Dalvi., P.M. Kapale, R.B. Ambade and S.B. Badgujar

Department of Biochemistry,

Bombay Veterinary College, Parel , Mumbai-400012.

Received 20-11-2014 Accepted 12-3-2015

Corresponding Author : drdalvi5@gmail.com; santdalvi@yahoo.co.in

ABSTRACT:

Galactagogues are believed to assist in the initiation, maintenance or augmentation of milk production. Twelve crossbred lactating cows at their peak yield of lactation and were in the declining stage of milk production (90-120 days after parturition) were selected and randomly allotted to treatment and control group with six cows in each group. The cows in the treatment group were given 20 gms of polyherbal formulation, daily mixed with feed for a period of 30 days. The results of the present study revealed that the milk production in the cows fed with the polyherbal formulation was increased steadily than that of the control cows. The serum biochemical profile was within the normal range, before, during as well as after the treatment period indicative of normal health status of experimental animals.

KEY WORDS: Polyherbal, Galactagogues, Lactation, Cows

INTRODUCTION:

In order to restore the animal productivity and to optimize the milk production in individual animals for better profits, various drugs, herbal preparations, hormones, mineral supplements and feed additives have been tried with variable results (Zednik *et al.*, 1994; Ramesh *et al.*, 2000). Herbal medications are being used since ancient time for curing many serious ailments in man and animals. Traditional herbal medicines in veterinary practice have great potential as an alternate therapy. Galactagogues are believed to assist in the initiation, maintenance or augmentation of milk production. Keeping in view the paucity of scientific data on the effectiveness and safety of herbal preparations in dairy cows, the present study was conducted to evaluate the effect of feeding herbal preparations on milk production and milk constituents in lactating crossbred cows.

MATERIALS AND METHODS:

Twelve crossbred lactating cows in their 3-5 month of lactation and had attained their peak yield of lactation and were in the declining stage of milk production (90-120 days after parturition) were selected. All animals were kept on standard feeding and management condition. The cows were randomly allotted to treatment and control group with six cows in each group. The cows in the treatment group were given 20 g powder of polyherbal formulation daily mixed with feed for a period of 30 days. The polyherbal powder consisted equal quantity of 9 herbs *Viz.Gossypiumherbaceum (*Kapashi*),Pennisetumamericanum (*Bajara*), Cyperusrotundus* (Nagarmotha), *Ricinuscommunis (*Airand*),Foeniculumvulgare (*Badishof*),Trigonellafoenum-graecum (*Methi*), Leptidium sativum (*Aaliv*),Ipomeadigitata* (Bhuikolha) and *Gmelinaaeborea (*Shivan*).*

The milk yield of all the twelve animals was recorded daily during milking from 0 days (day of treatment) for 30 days of experiment by electronic weighing balance. For analysis of milk constituents and serum biochemical analysis, milk and blood samples were collected fortnightly. Milk analysis was done using automated milk analyser (Lactoscan) and serum biochemical analysis (Liver Function & Kidney function test) was done using automated biochemical analyser. The data was tabulated and analysis of variance of data was carried out by completely randomized design

(Snedecar & Cochran,1994).To study the relationship of milk yield and milk constituents correlation coefficient were calculated.

RESULTS AND DISCUSSION:

The observations on milk yield was taken at three interval i.e. 0-9 days , 10-19 days and 20-29 days is presented in table 1 and effect of feeding of polyherbal preparation on milk constituents is presented in table 1.

Table 1: Mean ± SE. Milk production (kg) of Control (C) Treatment (T) group of cross bred cows after feeding polyherbal preparation.

Days	Control group(C)	Treatment group (T)
0-9	4.79± 0.05	6.24 ± 1.14
10-19	4.48± 0.11	6.76 ± 0.26
20-29	4.30±0.11	6.88 ± ± 0.13

The data reveals that there was non significant steady increase in milk yield in all the three groups without any significant change in milk constituents ie. fat, protein, lactose and SNF per cent in all the three intervals. At the same time the serum biochemical parameters like bilirubin, urea,creatinine, glucose, triglycerides, cholesterol, uric acid, albumin, and protein as well as hepatomarker enzymes ALT and AST were also found within normal limits (Data not shown). No variation in biochemical constituents and ALT and AST indicates that there is no adverse effects of feeding galactoggogue polyherbal preparation on metabolism. Apparent observation of the results on milk yield , there was increase in milk production from 30.27 per cent to 60 per cent on the contrary there was 10 per cent decrease in milk production in control group.

Table 2: Effect of polyherbal formulation feeding on milk constituents of cross bread cows

Experimental days	Fat %		Protein %		Lactose %		SNF %	
	T	C	T	C	T	C	T	C
0	4.85 ±0.26	4.31 ±0.18	3.39 ±0.02	3.39 ± 0.08	5.17 ±0.03	5.18 ±0.03	8.00 ±0.18	8.20 ±0.13
15	4.57 ±0.26	4.22 ±0.26	3.36 ±0.02	3.38 ±0.02	5.11 ±0.03	5.12 ±0.03	8.36 ±0.25	8.15 ±0.10
30	4.37 ±0.22	4.4 ±0.21	3.39 ±0.01	3.41 ±0.02	5.17 ±0.03	5.19 ±0.04	8.45 ±0.23	8.01 ±0.18

Baig and Bhagwat (2009),Bhatt *et al.* (2009),Ramesh *et al*. (2000) in cross-bred cows and Anjaria and Gupta (1967) reported the significant increase in milk yield of goats, sheep, cows and buffaloes with *Leptadenareticulata*. The increase in milk yield could be because their roots are rich source of some minerals and some trace elements like calcium, magnesium, copper, iron, manganese,

nickel, zinc etc., (Lohar *et al.*, 1991) which may enhance milk synthesis at some steps.

Some of the plants identified as lactogenic stimulates the synthesis of lactogenic hormones (prolactin, cortisol, GH) and β-endorphin and β-casein accumulates in mammary gland (Sumanth and Narasimharaju, 2009).

ACKNOWLEDGEMENT

Authors are very much grateful to Dr. A.H. Bandivdekar, Deputy Director, National Institute for Research in Reproductive Health, Parel, Mumbai-400012 for providing necessary facility during entire research work.

REFERENCES :

Anjaria, J. V. and Gupta, I. (1967). IndianVet. J.,**44** :967-974.

Baig, M. I. and Bhagwat. V. G. (2009). Vet. World**, 2**(4):140-142.

Bhatt, N.,Singh,M. and Ali,A. (2009). Int. J. Agric. Biol., **11**: 721–726.

Lohar, D.R.,Chaturvedi,D. and Varma,P.N. (1991). Indian Drugs **29**(6): 271-273.

Ramesh, P.T., Mitra,V., Suryanarayna,T. and Sachan,A. (2000). The Veterinarian ,**15** (24) : 3–5.

Snedecar,G.W. and Cochran, W.G. (1994). Statistical methods. 8thed^{n}. The Iowa state university press, Ames,IOWA,USA.

Sumanth, M., andNarasimharaju, K. (2011). Int. J. of Green Pharmacy.

Zednik, J., Marecek,E., Zidova,M., Valdhauser,A., Urbanek,J., Verner,V., Huskova,J., Kubenova,H. and Matycka,L. (1994). Indian J. Indigenous Med., **10**: 11–20

❑