

REPORT OF
THE WORKING GROUP
ON
ANIMAL HUSBANDRY & DAIRYING
12TH FIVE YEAR PLAN
(2012-17)

Submitted

To

Planning Commission
Government of India
New Delhi

high productivity in dairy animals and for commercial poultry production, availability of nutritiously rich compounded feed at reasonable cost would be a critical aspect.

9.3.8 The manufacturing of compounded cattle feed is by and large with the private sector agencies (both organized and unorganized) and dairy federations. The usage of compounded cattle feed has not witnessed the desired level of growth over the years. The shift of focus towards rearing animals with higher production potentials and the mushrooming of commercial dairy farms is likely to enhance production and consumption of nutritionally balanced compounded feed. The Ration Balancing Programme envisaged in the NDP would certainly facilitate the dairy farmers in providing a nutritionally balanced feed, which is cost effective to their animals by using feed ingredients available with them and also inclusion of compounded cattle feed.

9.3.9 Efforts need to be focused on augmenting the existing feed resources by tapping non-conventional feed resources. Promotion of fodder cactus in arid ecosystem especially in states of Rajasthan and Gujrat may be taken up during 12th Plan period. The use of by-pass nutrients, promotion of area specific mineral mixtures, fodder enrichment and densification could be some of the focused areas for enhancing the productivity and thereby furthering the growth of the sector.

9.3.10 A 'National program on livestock feed and fodder' be formulated and implemented in a Mission Mode. The scheme so developed has not only to address the issue of green fodder seed production but also encompass other aspects like area expansion of green fodder, fodder conservation, fodder densification, establishment of fodder banks, and nutritional enhancement of crop residues, capacity building, and extension. The ongoing centrally sponsored and central sector schemes on 'Feed and Fodder Development' should be with this mission project.

Clinical Report on Therapeutic Management of Repeat Breeder Cows

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Introduction:

The deficiency of a particular trace element may influence the functional characteristics of endocrine glands, especially the hypophysal-gonadal axis. Calcium (Ca) plays an important role in gonadotropic regulation of ovarian steroidogenesis. Marginal deficiency of phosphorus cause disturbance in the pituitary-ovarian-axis including ovulation. Zinc (Zn) deficiency may reduce GnRH secretion that eventually leads to the arrest of ovulation. Lack of manganese (Mn) may inhibit the synthesis of cholesterol and its precursors that in turn may limit the synthesis of sex hormones and possibly other steroids. Copper (Cu) has a significant role in maintaining optimum fertility as it is involved in FSH, LH and estrogen activity. Lactation however places a heavy drain on an animal already deficient especially in certain minerals and in the general level of feeding (Roberts, 2004). The trace elements likely to be of most practical significance are copper (Cu), selenium (Se) and iodine (I) (Rice, 1994). Moderate deficiency of phosphorus may lead to repeat breeding condition and poor conception rate (Sathish Kumar, 2003). Copper treatment is reported to improve conception rate as the copper treated cow require 1 service and the untreated cow require 1.15 services per conception (Hunter, 1977).

Material and Methods:

Selection of Animals:

35 cows having history of conception failure for last 1 year, having artificially inseminated 3 – 4 times over a period of time were identified from near by village. Vaginal swabs were collected and laboratory diagnosis was performed for presence of any trace of infection.

Total 20 cows free from reproductive abnormalities – metritis, endometritis, pyometra and having average body condition score were selected for the present study.

Treatment:

All the experimental animals were dewormed with broad spectrum anthelmintic drug. Of these 10 cows were subjected to oral feeding of Bolus *Conceivae* containing trace minerals at the dose rate of 4 bolus per day for next 10 days. Ultrasonography was performed on the exhibition of oestrus symptoms by the cows. 10 cows act as control.

Results:

Time required for onset of oestrus:

Of the 10 treated cows, 09 (90 per cent) cows exhibited oestrus after 17.40 ± 0.73 days. From control group, 07 (70 per cent) exhibited oestrus symptoms with in 29.43 ± 3.61 days from the initiation of experiment.

Intensity of Oestrus:

Of the responded 09 cows, 3 (33.33 per cent) cows exhibited intense oestrus symptoms followed by Intermediate in 4 (44.44 per cent) and weak oestrus symptoms in 2 (22.22 per cent) cows. All the 07 (100 per cent) cows, the intensity of oestrus was weak.

Size of Dominant Ovulatory Follicle:

An average (+SE) size of 10.84 ± 0.79 mm of dominant follicle was recorded in the treatment group against the average (+SE) size of 6.11 ± 0.40 mm dominant follicle in the control group of cows.

Conception Rate:

On day 60 following artificial insemination on standing oestrus, the inseminated cows were subjected to pregnancy diagnosis by per rectal examination. From treatment group, of the responded 09 cows, total 08 cows (88.88 per cent) confirmed pregnant whereas from control group, of the responded 07 cows 02 (28.57 per cent) cows confirmed pregnant.

Conclusion:

The supplemented Bolus Conceivae containing trace minerals significantly improves the reproductive efficiency of the repeat breeder cows, indicating the trace mineral deficiency as one of the cause of repeat breeding in cows.

Annexure:

Animal No.	Time required for onset of oestrus (Days)		Average size of dominant follicle (mm)		Conception	
	Treatment	Control	Treatment	Control	Treatment	Control
1	18	24	9.2	6.05	1	
2	16	26	11.8	8.36	1	1
3	15	34	16.4	7.41	1	
4	14	25	8.2	5.48		
5	19	36	9.7	4.73	1	1
6	22		8.3	5.21		
7	18		9.8	6.5	1	
8	17	45	13.2	7.22	1	
9	16	16	10.7	4.38	1	
10	19		11.06	5.77	1	
Average	17.40 ± 0.73	29.43 ± 3.61	10.84 ± 0.79	6.11 ± 0.40	8	2

References:

- Hunter, A.P. (1977) Some nutritional factors affecting the fertility of dairy cattle. New Zealand Vet. J., 25: 715-721.
- Rice, D.A. (1994) Trace element deficiencies in dairy cows. UCD Biannual Nutrition Course, UCD, Dublin 4.

Roberts, S.J. (2004) Veterinary Obstetrics and Genital Diseases. 2nd Ed. CBS Publishers & Distributors, N. Delhi. 453-55.

Sathish Kumar (2003) Management of infertility due to mineral deficiency in dairy animals. In: Proceedings of ICAR summer school on "Advance diagnostic techniques and therapeutic approaches to metabolic and deficiency diseases in dairy animals". Held at IVRI, Izatnagar, UP (15th July to 4th Aug.). pp. 128-137

Acknowledgement:

Receipt of Bolus Conceivae containing trace minerals from "Ashoka Veterinary Pharma, Nagpur" in gratis is duly acknowledged.

Before Treatment:

After Oestrus exhibition:

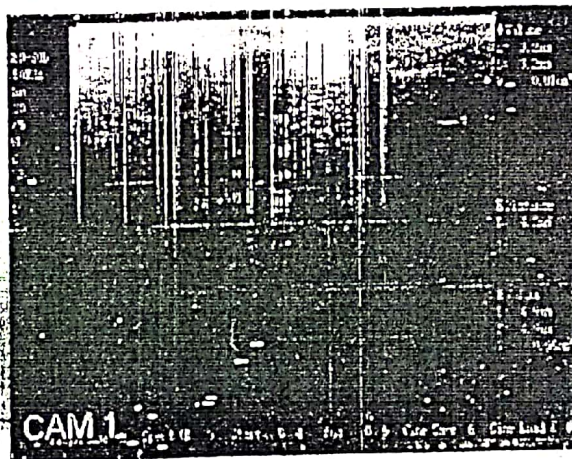
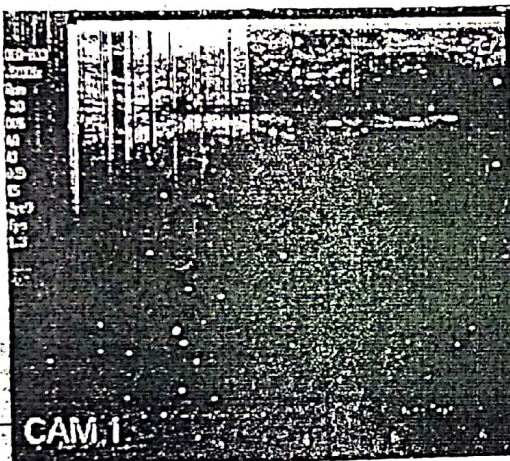


Plate : Ovary showing presence of dominant follicle

Research Publications on the Efficiency of Extra Energy Plus and Bolus Conceivae.

1. Clinical report on Therapeutic Management of Repeat Breeder Cows. By Dr. Patil M. S., Dr. G. R. Bhojne and Dr. N. P. Dakshinkar. Summary and Conclusion – Oestrous cycle exhibited by 90.00 per cent treated dairy animals. Conception rate of 88.88 per cent confirmed on the basis of pregnancy diagnosis by per rectal examination .

2. M. V. Sc. Thesis on “Clinico - therapeutic studies on ketosis in dairy cows” By Dr. R. B. Meshram, Dr. S. P. Waghmare, Dr. S. G. Mode, Dr. N. P. Dakshinkar, Dr. K. S. Pajai and Dr. M. F. M. F. Siddiqui. PGIVAS, Akola, (MAFSU) Maharashtra. Summary and Conclusion – Overall reproductive management of the dairy cows improved and 90 per cent of the dairy cows exhibited oestrus. After feeding of rumen bypass fat (Extra Energy Plus), there is significant improvement in milk yield by 12.73 to 15.11 per cent. Incidence of Ketosis was not recorded in these dairy animals.

3. Paper published by Patent Department, Govt. of India. For the products Extra Energy Plus and Bolus Conceivae.

4. Effects of supplementation of rumen bypass fat with chromium on milk yield and milk fat percent in dairy cow.

Study Shows improvement in milk production, fat percent and oestrus is regularities. Research paper published in Veterinary Science Research Journal.



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