EFFICACY OF HERBAL DRUG IN INDUCING ESTRUS IN DELAYED PUBERTAL DEONI HEIFERS

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ABSTRACT

Herbal therapies are preferred for treatment of anestrus due to their cheap, safe and efficiency with easy availability. Delayed maturity is the most common reproductive complaint in native descript heifers. Eighteen Deoni heifers were selected for treatment of delayed maturity with herbal heat inducer powder on the basis of gynaeco-clinical examinations. 75.00 per cent heifers responded for the treatment with ovulatory, intermediate type of estrus and six animals conceived with 1.33 services per conception as against nil response in control group. Estimation of haemoglobin, serum protein, serum copper, serum cobalt and serum iron levels revealed significantly higher increase in treatment group. It was concluded that herbal therapy can efficiently induce fertile estrus in delayed cases of maturity in deoni heifers.

Key words: Deoni, Estrus, Herbals, Puberty

INTRODUCTION

Native Indian breeds are reared with traditional animal husbandry practices and hence, reproductive potential of these animals remains unexploited for prolonged period. Delayed puberty is a major infertility problem in recognized dual purpose Deoni cattle. Indian farmer is more inclined to adopt herbal therapies in reproductive disorders instead of costly hormonal approaches. Induction of estrus in young heifers with herbal therapies has been attempted with reasonable success. Present trial reports efficacy of a herbal heat inducer in delayed pubertal Deoni heifers.

MATERIALS AND METHODS

Eighteen Deoni heifers were found to be non cyclic on per rectal examinations carried out in infertility assessment camps during winter season. The heifers were found to have clinically normal health status, normal genitalia, regularly dewormed with 260-280 kg body weight at the age of 22–24 months. Twelve heifers were treated with herbal heat inducer powder (Ovifertin, M/s Indian Herbs, Saharanpur, UP) @ 03 g per 100 kg body weight for 03 days along with regular concentrate mixture once daily. Six heifers were kept as untreated control. Blood collections were carried out under sterile conditions through jugular veins in animals under trial in two phases i.e. A day before start of treatment and on 5th day of completion of treatment or on the day of estrus for estimations of various serum biochemicals with semi-automated blood analyzer (StatFax, 2000). The treated animals were followed for recording of reproductive parameters like type of estrus, treatment response duration, duration of estrus, follicular developments, conceptions and establishment of cyclicity (Shanker, *et al.* 1996). The recorded data and clinical observations were statistically analyzed as per the methods described by Snedecor and Chochran (1968).

RESULTS AND DISCUSSION

The details of reproductive events recorded in the trial are shown in table 1. The Deoni heifers in anestrus

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stages treated with Ovifertin powder responded estrus in eight heifers (75.00 %) as against nil response in control group. Although the induced ovulatory response was within average 5.50 ± 0.39 days of treatment in six animals, two responded animals with follicular developments showed no heat symptoms. Two animals from treatment group were confirmed in estrus by per rectal examinations but found to be ovulated after 12 hrs of cessation of estrus. These two animals failed to conceive even after breeding, however the cyclicity continued in only one animal. The cyclicity was established in seven Deoni heifers (58.33 %) on treatment of ovifertin powder with establishment of cyclic non-breeding tendency in one heifer.

The phytochemicals available in herbal ingredients probably changes hypothalamus-hypophyseal ovarian axis thereby regularizing the reproductive cyclicity. The safety and physiological heat induction effect of herbals is more important for the treatment of anestrus cases. The herbal stimulus helps in follicular developments and their maturity leading to preovulatory stage for induction of estrus. The oestrogenic level increases due to development of graafian follicle and further increase in

Table 1: Efficacy of herbal heat inducer therapy for induction of pubertal estrus in Deoni heifers

Sl.no.	Parameter	Observation Groups	
		Treatment	Control
01	No. of animals under trial	12	06
02	No. of animals responded –induced estrus	08(75.00)	Nil
03	Onset of estrus after treatment (days)	5.50 ± 0.39	Nil
04	Duration of estrus (hrs)	20.15 ± 0.55	Nil
05	No. of animals ovulated out of induced estrus	08(75.00)	Nil
06	Conceptions 1st /Induced estrus	04	Nil
	2nd / Ist natural estrus	02	Nil
	3rd / IInd natural estrus	00	Nil
	Total	06 (50.00)	Nil
07	Services per conception	1.33	Nil
08	No. of cyclic non breeder animals	01	Nil
09	Establishment of cyclicity	07/12(58.33)	Nil

(Figures in parenthesis indicate percentage)

Table 2: Serum biochemical profile in Deoni heifers treated with herbal heat inducer therapy

Serum constituents	Treatment group		Control group	
	Pre treatment	Post treatment	Pre treatment	Post treatment
Haemoglobin (g%)	11.20 ± 00.04^{b}	13.47 ± 00.04^{a*}	11.50 ± 00.09^{b}	11.33 ± 00.09^{b}
Serum protein (g%)	07.73 ± 00.21^{b}	07.90 ± 00.21^{a*}	07.53 ± 00.42^{b}	07.43 ± 00.42^{b}
Serum copper(mcg%)	65.16 ± 07.19^{b}	96.08 ± 07.19^{a*}	65.65 ± 14.40^{b}	65.16 ± 14.40^{b}
Serum cobalt (mcg%)	00.32 ± 0.005^{ab}	01.49 ± 0.005^{a*}	01.22 ± 00.01^{b}	01.22 ± 00.01^{b}
Serum iron (mcg%)	135.25 ± 20.10^{b}	168.57 ± 20.10^{a*}	138.38 ± 40.20^{b}	141.00 ± 40.20^{b}

Values against ± indicate SE, similar superscripts indicate values at par, * indicate highest value in the group
Values bearing different superscripts differ significantly. (P<0.05) N = Each value is mean of 12 observations

LH level leads to ovulation and subsequent leutinization. The treatment was found to be 75.00 per cent effective in inducing estrus and 50.00 per cent conceptions as against no response in control group of anestrus cases.

Markandeya *et al.* (2002) reported 61.22 and 71.67 per cent induction of estrus in delayed pubertal heifers and post partum anestrus cows respectively with herbal *Prajana* treatment. Markandeya *et al.* (2004) reported use of herbal *Sajani* capsules in six doses and observed 69.08 per cent estrus in cows and 64.94 per cent estrus in buffaloes within 5 to 8 days of treatment. Mohanty *et al.* (2007) reported 69.00 per cent induction of estrus in HF cows with 62.00 per cent pregnancies. These reports are in consonance of present finding. However low response is also recorded for herbal treatments as Bhattacharya *et al.* (2001) reported 40.00 per cent exhibition of estrus after first dose and 36.00 per cent after second dose of *Sajani* treatment in crossbred cattle and 57.89 per cent conceptions whereas Ahmed *et al.* (2003) reported induction of estrus in 13.33 per cent crossbred cows after first dose and 34.62 per cent after second dose of *Janova* treatment.

SERUM BIOCHEMISTRY

The serum biochemical profile estimated in Deoni heifers during the trial have been detailed in table no.2.

The present findings are in consonance with Homse (1981) who ascribed silent estrus and anestrus due to molybdenosis induced hypocuprosis in heifers. Raj *et al.* (2006) who reported significantly higher levels of ferrous and copper in cyclic heifers than that of the anestrus heifers and also reported significantly higher level of serum total protein in normal cyclic heifers than in delayed pubertal crossbred heifers.

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