

MINERAL MIXTURE SUPPLEMENTATION FOLLOWED BY TIMED AI PROTOCOL FOR IMPROVING FERTILITY STATUS OF POSTPARTUM DAIRY CATTLE

C. VELLADURAI^{1*}, R.E. NAPOLEAN² AND M. SELVARAJU³

*Department of Veterinary Gynaecology and Obstetrics
Veterinary College and Research Institute, Tamil Nadu Veterinary and Animal Sciences University, Namakkal
- 637 002*

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ABSTRACT

The postpartum dairy cattle (n=8) were orally supplemented with 30-50 gm mineral mixture per day for 15 days followed by administration of ovsynch, a timed artificial insemination (AI) protocol. between days 50 to 65 postpartum. The control group cattle (n=8) were also supplemented with mineral mixture as in other group and were observed for overt estrus for 30 days starting between days 35 to 50 postpartum followed by AI at overt estrus. The cattle subjected to mineral mixture plus ovsynch protocol had ovulatory response, and first service, second service and overall conception rate as 100, 37.5, 50 and 87.5% in comparison to their counterparts exhibiting respective response as 62.5, 25, 37.5 and 62.5%. Thus, the mineral mixture supplementation followed by ovsynch treatment can be used to improve fertility status in postpartum dairy cattle.

Keywords: Cattle, Fertility, Mineral mixture, Ovsynch, Postpartum

Ovsynch, a fixed-time AI protocol, which was developed by Pursley *et al.* in 1995 can be used as a reproductive tool in many farms. The present study was planned to assess the impact of ovsynch treatment plus mineral mixture supplementation on reproductive performance of postpartum dairy cattle.

Sixteen normally calved dairy cattle between day 35 to 50 postpartum were orally supplemented TANUVAS mineral mixture @ 30-50 gram / day for 15 days. Between days 50 and 65 postpartum, eight randomly selected cattle were treated (i.m.) with ovsynch protocol (day 0 and day 9, Buserelin acetate 10 µg on each day; day 7, 500 µg Cloprostenol; TAI at 16-18 h after day 9 Buserelin acetate). The remaining cattle were observed for the estrus for 30 days starting from days 35 to 50 postpartum followed by AI at observed estrus. Ovulatory response was confirmed by corpus luteum assessment through ultrasonography. The pregnancy was confirmed by rectal palpation at day 60 post-AI.

In ovsynch and control group cattle, the respective ovulatory response was 100% and 62.5%, as reported earlier for ovsynch-treated animals (Pursley *et al.*, 1997 and Vijayarajan *et al.*, 2009). The lower ovulatory response in cattle not subjected to ovsynch protocol could be the sequelae of suppressed hypothalamic GnRH and pituitary LH secretion leading to suppressed ovarian function (Pursley *et al.*, 1997). In the present study, the first service, second service and overall conception rate was 37.5, 50 and 87.5% in ovsynch plus mineral mixture treated cattle and 25, 37.5 and 62.5% in mineral mixture treated cattle. This suggested the potentiality of ovsynch protocol plus mineral mixture in augmenting the fertility in postpartum cattle.

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¹M.V.Sc. Scholar, ²Professor and Head; ³Professor and Head, Department of Teaching Veterinary Clinical Complex; *vetvelladurai@gmail.com