

## Efficacy of "Dinoprost" for detection of early non pregnancy in crossbred cows

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### ABSTRACT

Early detection of non-pregnancy was performed by Prostaglandin induced Milk flow Test (PG-IMFT) using 2.5 mg "Dinoprost" intravenously. The drug was administered on days 20-22, 30 and 40-45 post insemination. Estrus animals were included as control. The pregnancy was confirmed by per rectal palpation 45-50 days post insemination. The test was accurate in 88.23, 84.21 and 68.75 per cent on days 40-45, 30 and 20-22 post insemination, respectively in positive cases whereas accuracy was 100.00 per cent in negative cases (non-pregnancy).

**Key words :** Dinoprost, pregnancy diagnosis, crossbred cows, estrus

With the help of rectal palpation pregnancy diagnosis can be performed around day 45 post insemination.

Field Veterinarians, however, diagnose pregnancy by this method around day 90 post insemination. In case the cow is non-pregnant, there is loss of 2-4 cycles and 40-90 days of production period. The scientists all over the world are working to evolve a technique by which non-pregnancy could be confirmed by day 20 post-insemination so that minimum number of cycles are lost. This will be helpful in identifying and combating fertility problems at the earliest.

Hence a simple accurate technique would be useful to dairy owners. Detection of progesterone by enzyme immune assay (EIA) has been used during the recent year (Gupta *et al.* (1991; Prakash *et al.*, 1996). EIA is comparatively simple to perform but still it requires a laboratory, necessary chemicals and kit. Wathes *et al.* (1984) observed for the first time that the non-luteolytic doses of 'Dinoprost' led to let down of milk through release of oxytocin from the corpus luteum and this principle could be utilised for detection of pregnancy without any side effect. Rao and Venkatramaiah (1991) concluded that prostaglandin induced Milk Flow Test (PG-IMFT) is a single, unexpensive and accurate method for determining functional status of corpus luteum including early non-

pregnancy diagnosis in bovines. Prakash *et al.* (1996) opined that PG-IMFT could replace the expensive radio-isotopic immunoassay.

The experiment was conducted on 59 inseminated cows in three groups. A dose of 2.5 mg of Dinoprost was administered intravenously through ear vein after thoroughly aseptic cleaning. In group-A (n = 18), the test was performed on 20 to 22 days post artificial insemination, in group-B (n = 22) 30 days post artificial insemination and in group C (n = 19) 40 to 45 days post artificial insemination. Seventeen estrus cows kept as control and the same dose of the drug was administered. All these animals were examined after 40-45 days post insemination to confirm pregnancy by rectal palpation.

The percent response of the cows tested on different days post insemination was significantly higher (88.89; 86.36 and 89.47 respectively) than that of estrus animals (5.88% serving as control) ( $P < 0.01$ ) however, they did not differ significantly among themselves. The per cent agreement, for the positive cases, was highest (88.23%) in the cows undergone PG-IMFT on day 40 to 45 post insemination followed by Group-B (84.21%) and Group-A (68.75%). For non-pregnancy the test was 100.00 percent for all the groups (Group A, B and C) of cows. However, no significant difference was observed among three groups.

It has been reported that PGF<sub>2</sub> alpha in non-luteolytic dose induces the release of oxytocin from the

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corpus luteum which causes let down of milk in the lactating cows (Rao and Venkatramaiah, 1989; Prakash *et al.*, 1996). Labussiere *et al.* (1988), Rao and Venkatramaiah (1989), Rao and Venkatramaiah (1991), Labussiere *et al.* (1992) and Prakash *et al.* (1996) have also reported that on the basis of milk let down subsequent to the 'Dinoprost' administration, pregnancy could be detected successfully in lactating cows.

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