

*Short Communication*

**BIRTH OF TWIN CALVES THROUGH  
MULTIPLE OVULATION AND EMBRYO TRANSFER:  
A CASE REPORT**

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**ABSTRACT :** A surrogate Gir cow delivered twin calves after receiving embryo from a donor Sahiwal cow at Multiple Ovulation and Embryo Transfer laboratory, Haringhata, West Bengal, India is reported.

**Key words :** MOET, Twin calf. Sahiwal, Gir.

Multiple ovulation and embryo transfer (MOET) is an effective procedure of embryo biotechnology, which increasing the contribution of superior females to breeding programmes ( Chang *et al.* 2006 ). Many factors which are likely to interfere with the successful implementation of MOET. These factors include super-ovulation of the donor animal, selection and use of the surrogate mother, problems during embryo transfer, events during pregnancy and finally, characteristics of the calves born ( Callesen *et al.* 1996). Twins were first induced successfully through embryo transfer in cattle by Rowson *et al.* (1969a,b). A similar effort was made in

MOET laboratory established in 2005 at Haringhata, Nadia, West Bengal under Paschim Banga Go-Sampad Bikash Sanstha, the State Implementing Agency for cattle and buffalo development under Animal Resources Development Department, Government of West Bengal. The present communication deals with birth of twin Sahiwal calves (one male and one female) through MOET first time in West Bengal.

Sahiwal donor cow was super-ovulated by FSH treatment and covered through artificial insemination using frozen semen on appearance of estrus at twelve hour interval for consecutive three times. Flushing of uterus was carried with

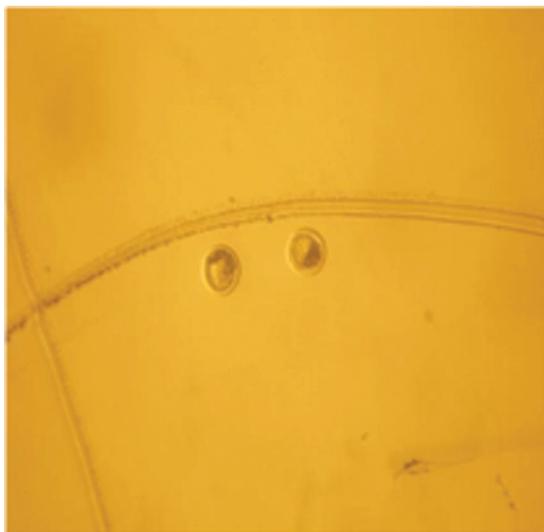
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**Fig. 1 :** 7 days embryos collected from donar cow.



**Fig. 2:** Twin calves with mother.



**Fig. 3 :** Twin calves (one male and one female).

flushing media (IMV Technologies, France) on seventh day of estrus. The embryos were collected, evaluated under stereo-zoom microscope and were transferred to well synchronized surrogate mother of Gir breed within four hours of collection. The Gir surrogate mother received two embryos, conceived and ultimately gave birth to a viable

co-twins (one male and one female) normally.

One Sahiwal and one Gir cow, aged 6 years & 5 years, body weight 310 kgs & 350 kgs of Bull mother farm of Haringhata, Nadia, West Bengal, India were used as donor and surrogate mother respectively. Both animals were routinely investigated and found free from any sexually transmitted diseases or any gynecological disorders. Synchronization of estrus of both the donor Sahiwal cow (No. S-226) and the surrogate mother of Gir breed (No. G-7751) was induced by using prostaglandin F<sub>2</sub>α (Inj Cyclix - 2ml (M/S Intervet ) as per standard protocol (Seidel and Seidel 1991). The donor cow was super ovulated by using 200 mg FSH (Folltropin-V - 400 mg with 20 ml diluents of BIONICHE Animal health, Canada, Inc. I/M injection). The Donor cow was fertilized by artificial insemination.

The donor animal was flushed to collect 7 days embryos (Fig. 1) and the retrieved embryos were graded through screening under

microscope, based on their cyto-morphological appearance following method of Seidal and Seidal (1991). On the same day, two good embryos of early Blastocyst stage were loaded into straw and transferred to the synchronized surrogate Gir cow following hygienic and sterilized procedures (Seidal and Seidal 1991). The surrogate mother was detected pregnant after 45 days of transfer. Twin calves ( one male and one female ) were born (Fig. 2 and 3). Therefore, double embryo transfer is more profitable because it reduces the number of recipients needed (Chang *et al.* 2006). Many studies have involved the production of twins by embryo transfer and undoubtedly, there will be other situations in various countries in which twinning cattle will be profitable.

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