

Producing sexed sperm for increasing milk production through RKVY funds

Introduction:

The case study pertains to interventions in West Bengal using RKVY funds in 2008-09. West Bengal has traditionally been a low milk producing state (producing 4.4MT in 2010-11, compared to 13.2MT in Rajasthan, 11.2MT in Andhra Pradesh, and 6.5MT in Bihar in the same year). The state wished to increase its milk producing capacity to become self-sufficient, and improve dairy processing potential in the state.

The actual requirement of milk was about 5.7MT, which called for an increase in per cattle milk production. This required targeted quantitative, qualitative and genetic improvement of cattle population along with strengthening of infrastructure for collection and processing of milk from the rural producers and marketing to the urban consumers by cooperatives, private sectors as well as government.

Intervention:

In 2002, the Paschim Banga Go-Sampad Bikash Sanstha (PBGBS) set out to increase production of milk. The primary approach was to increase Artificial Insemination (AI) coverage in rural areas. PBGBS hence undertook production of sexed sperm by introducing 'BD Influx High Speed Cell Sorter' in the Frozen Semen Laboratory, at the Haringhata Farm. The project was taken up under RKVY with a total outlay of Rs. 2.90 crores, during 2007-08 and 2008-09 and completed in November, 2009.

The process involved pre-determination of sex by sorting 'X' and 'Y' chromosome bearing live sperm cells using the DNA content of sperm as the discriminatory parameter. This helped in production of large number of female calves, which ultimately boosted milk production. The production reached 4.47MT in 2010-11, and stood at 5.38MT in 2017-18.

Impact:

- RKVY funding was critical in the intervention as no other scheme was functioning in the sector to enable such an investment.
- The Haringhata Farms became the breeding grounds for the birth of India's first pre-determined male calf in January 2011.
- Sorted sexed semen is marketed in many countries like US, New Zealand, Denmark, and Australia at very high prices. By replicating this technology, the animal husbandry department was able to exploit the benefits of this technology at an affordable and subsidised cost.

Source: Department of Agriculture and Cooperation, Ministry of Agriculture, Incentivising Agriculture: RKVY initiatives, April 2012; Agrotechnology, an open access journal, Sexed Semen Technique: A Revolution in Indian Dairy Industry, ISSN: 2168-9881, Volume 6, Issue 3, October 2017