

TECHNOLOGIES & PRODUCTS

A. Technologies

(i) Area specific mineral mixture

Area specific mineral mixture formulation for yak and yak-hybrid comprises of zinc (Zn), copper (Cu), Cobalt (Co) and manganese (Mn). This is useful since soil web system, feed and fodder of yak rearing regions are found deficient in certain trace minerals. Thus, feeding mineral deficient feed and fodder resources to livestock lead to poor animal health and productivity. This mineral mixture can be fed with complete feed blocks prepared from locally available feed resources. Complete feed block are prepared from maize stover, concentrate mixture and molasses or maize stover edible tree fodder concentrate mixture and molasses in different ratios. This has an additional advantage of an ease in transport and storage in difficult hilly terrains due to compact size of voluminous feed. The complete feed block with area specific mineral mixture could support optimum growth of yielding calves.

(ii) Complete Feed Blocks are prepared by using varying percentage of maize stover (25 to 60%), tree leaves and molasses and on feeding feed blocks optimum performance of yak are achieved.

(iii) Frozen semen technology & A.I.



Cryopreservation of yak semen was standardized and A.I. with frozen semen started in 2005



First A.I. yak calf was born on 7th July, 2006

(iv) MOET : Multiple ovulation and embryo transfer technology was standardized in yaks in 2004 and the first embryo transferred yak calf, named MISMO, was born on 25th June, 2005.



MISMO with her foster mother

(iv) Synchronization of oestrus in yaks with progesterone impregnated vaginal sponge

Vaginal sponge containing 600 mg progesterone for synchronization of oestrus followed by Artificial Insemination in Yak resulted in 100 % oestrus response with 60 % conception rate and 40% fertility rate in terms of production of calves.



Two male calves born to oestrus synchronized yaks

(v) Herbal eye drop (ophthalmic preparation) against infectious bovine keratoconjunctivitis (pink eye) in yak

An ophthalmic preparation (eye drop) of herbal origin was prepared with extract of *Allium sativum*, *Saussurea costus* and *Azadirachta indica*. The product is effective in keratoconjunctivitis caused by *Moraxella*, *Neisseria*, *Haemophilus* in yak and other animals.

B. Products

- (i) Yak milk whey beverages incorporated with Kiwi fruit pulp**

Whey is a rich source of nutritional and functional components. Whey collected in *yak paneer* and *chura* preparations is utilized for making beverages. Beverages from yak milk whey has been formulated with 15% sugar, 0.1% coco powder, 0.2% salt, 0.015% caramel flavour, 0.05% alpha-tocopherol and enriched with natural vitamin C by addition of kiwi fruit pulp.

(ii) Dietary Fibre Enhanced Low Fat Paneer

Dietary fiber enhanced paneer with 1 % fat was developed. The designer paneer can be stored upto 12 days at refrigeration temperature.

