

DEVELOPMENT OF CONTROLLED BREEDING TECHNOLOGY FOR ENHANCING PRODUCTIVITY IN INDIGENOUS GOATS

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PROBLEM AND RESEARCH GAP

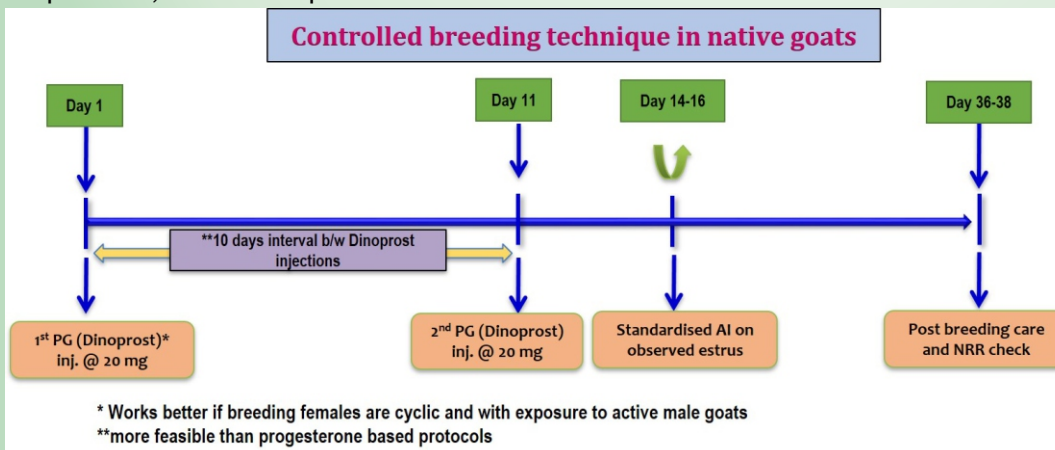
Goat farming is an important component of livestock sector in the coastal region and majority of the goat farmers are small, marginal or landless farmers. One important constraint in goat rearing is the shortage of superior quality male breeding goat. Also, indiscriminate mating using non-descript and genetically inferior male is resulting in inbreeding problems and loss of valuable goat germplasm. It is economically not feasible to keep a breeding buck for small and marginal farmers who maintain small flock size of goats in the coastal region.

PARTICULARS AND SALIENT FINDINGS

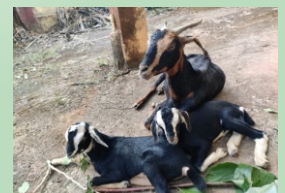
Artificial Insemination (AI) can play a significant role in goat farming as this technique allows extensive and efficient use of superior male goat germplasm for faster genetic improvement. Adoption of AI technology can help in manifold increase in breeding from male goat or buck and reduce charges on rearing buck and breeding cost especially for small and marginal farmers. This technology also takes full advantage of estrus synchronization and induction methods and thus can aid in controlled reproduction, enabling breeding of more females, kidding in a desired time or season. The Institute has standardized a controlled breeding technique involving estrus induction and synchronization integrated with artificial insemination in indigenous goats reared under hot and humid coastal climate. Estrus induction and synchronization is based on double regimen of exogenous prostaglandin $F_2\alpha$ analogue (Dinoprost tromethamine) combined with standardized technique of AI using liquid buck semen stored at chilling temperature (4 to 5°C) in modified tris-glucose-citrate medium.

IMPACT

This controlled reproduction technique has the potential to enhance reproductive efficiency and overall productivity in native goat breeds in the coastal region. Estrus induction and synchronization have shown to improve submission and conception rates in indigenous goats and integrating AI in place of natural mating can aid in overall improvement of reproduction and genetic gain. Large numbers of females can be bred with relatively low semen doses, storage is inexpensive, and the semen can easily be transported in the farmers' field. The technique has been adopted in the Institute goat unit as well as farmers' field and overall, 58 goats were synchronized and inseminated. Initial estrus induction rate was 60% and overall estrus induction rate was 78% while non-responder rate was 19%. There was 20% increase in submission rate and 26% increase in kidding rate compared to conventional mating system. Adoption of this method has boosted goat productivity with overall conception rate of 71% and twinning rate of 33% resulting in a greater number of viable kids and improved mean weekly body weight gain in progenies produced. Farmers are also able to plan breeding and kidding in a desired time or season, earning more profitability. With good heat detection, record keeping, proper semen handling and AI method, the technique can achieve satisfactory results and there by enhance productivity and profitability in goat farming. Target area of technology include coastal states of Goa, Karnataka, Kerala and target users include goat farmers, agri-entrepreneurs, State AH departments.



AI in estrus synchronized native goats
Hormonal agent used (inset)



Kids born through AI in the farmers' field