



# Parentage Verification Kits for Goats and Other Livestock Species

## Technology Description

i) The first kits of DNA based markers for parentage/paternity for Goat and other Ruminant Livestock Species . A core set of 14 microsatellite markers each from cattle genome database have been identified which are amplifiable in a single multiplex PCR reaction in goat and a set of 11 markers which amplify in all ruminant livestock species viz; Cattle, buffalo, sheep, goat, Yak and Mithun. These markers have been pooled together to form a single multiplex PCR reaction for simultaneous amplification of all the markers. The markers selected are highly polymorphic, have high heterozygosity, located on different chromosomes and provide a very high probability of exclusion.

Name Of institute: NBAGR Karnal  
 Stage of development:  
 Ready for commercialization  
 Patent status: Filed

Scientific Experts:  
 Ramesh Kumar Vijn

## Background

Parentage analysis of livestock animals is becoming increasingly important in animal husbandry to improve the accuracy of selection and to select sires to increase production and reproduction traits. NBAGR has developed five kits for parentage verification which cover most of the livestock species. These are parentage verification kits for buffalo, cattle, camel and goat and one kit for all ruminant livestock viz; cattle, sheep, goat, buffalo, yak and mithun.

## Benefits / Utility

The technology provides individual identification . Testing correctness of the pedigree information . Helps in testing relatedness amongst sires used in the herds to avoid inbreeding . Helpful in adjudging extent of variability at DNA level in sires and can help in their selection in a manner that maximum variability is captured for ex situ conservation . The kits shall increase the accuracy of selection of the animals (Sires) and this shall eventually increase the productivity in the

## Country Context

Non-specific to country

## Scalability

Yes the kits can be used a very large scale for adoption by any agency including Animal Husbandry Departments of various states and Govt of India.

## Business and Commercial Potential

Relatively less potential as of now in Indian Agriculture Scenario Technology for niche area and research institutions

## Potential investors to this technical innovation

Service firms providing "genotyping services"



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## Financials

Total Capital Investment(excluding Land and licensing fees) : Rs 1.20 Cr

## Target Market / Customer

Commercial herds for their improvement by milk unions/ societies for the improvement of livestock The Private business firms who, provide the genotyping services and or package the kit for sale to the prospective buyers who have research facilities Insurance companies

## Limiting factors for large scale commercialization

Only for institutional use or by insurance company to detect any manipulation carried out by the owner of an insured animal.

## Social impact of the technology

Low impact

## Any other relevant information

Can be used by insurance sector as the combination of markers of the kit can be used for providing unique identity to each animal of any species.

