CYTOGENETIC CHARACTERIZATION OF OSMANABADI GOAT

by

Navnath Baburao Wagh
(Reg.No. 06/072)

A Thesis submitted to the
MAHATMA PHULE KRISHI VIDYAPEETH,
RAHURI - 413 722, DIST. AHMEDNAGAR
MAHARASHTRA, INDIA

in partial fulfilment of the requirements for the degree

of

MASTER OF SCIENCE (AGRICULTURE)

in

ANIMAL SCIENCE

DEPARTMENT OF ANIMAL SCIENCE AND DAIRY SCIENCE

POST GRADUATE INSTITUTE
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APPROVED BY

Dr. U.Y. Bhoite
(Chairman and Research Guide)

Dr. B.R. Ulmek
(Committee Member)

Dr. S.C. Patil
(Committee Member)

Dr. D.P. Kaledhonkar
(Committee Member)

Dr. D.K. Deokar
(Committee Member)

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Dr. U.Y. Bhoite
Associate Professor,
Department of Animal Science
and Dairy Science
Mahatma Phule Krishi Vidyapeeth,
Rahuri – 413 722, Dist. Ahmednagar,
Maharashtra State, INDIA

C E R T I F I C A T E

This is to certify that the thesis entitled**, "CYTOGENETIC CHARACTERIZATION OF OSMANABADI GOAT"** submitted to the Faculty of Agriculture, Mahatma Phule Krishi Vidyapeeth, Rahuri, Dist. Ahmednagar (M.S.) in partial fulfilment of the requirements for the degree of **MASTER OF SCIENCE** (AGRICULTURE) in **ANIMAL SCIENCE**, embodies the results of a piece of *bona fide* research work carried out by **MR. NAVNATH BABURAO WAGH,** under my guidance and supervision and that no part of this thesis has been submitted for any other degree or publication in other form.

The assistance and help received during the course of this investigation have been duly acknowledged.

Place : M.P.K.V., Rahuri

(U.Y. Bhoite)
Research Guide

Dated : / /2008

Dr. R.S. Patil
Associate Dean,
Post Graduate Institute,
Mahatma Phule Krishi Vidyapeeth,
Rahuri - 413 722, Dist. Ahmednagar,
Maharashtra State, INDIA

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Krishi Vidyapeeth, Rahuri and that no part of this thesis has been submitted for any other degree or publication in other form.

Place : M.P.K.V., Rahuri **(R.S. Patil)**
Dated : / /2008

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While travelling on this path of education many hand pushed me forth, learned hearts put me on the right track enlightened by their knowledge and experience, I ever rest thanks to all of them.

Place : M.P.K.V., Rahuri (N.B. Wagh)
Date : / /2008.

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LIST OF ABBREVIATIONS

^0C : Degree celsius
et al. : Etalia and others
GDW : Glass distilled water
g : Gram
i.e. : Idest, that is
lbs : Pounds

mg	:	Milligram
ml	:	Millilitre
mm	:	Millimeter
rpm	:	Revolution per minute
S.E.	:	Standard error
viz.	:	Vide licet, Namely
%	:	Per cent
µ	:	Micron
µg	:	Microgram
/	:	Per
+	:	Plus
-	:	Minus

ABSTRACT

CYTOGENETIC CHARACTERIZATION OF OSMANABADI GOAT

BY

Wagh Navnath Baburao

A candidate for the degree of

MASTER OF SCIENCE (AGRICULTURE)

in

Animal Science

Mahatma Phule Krishi Vidyapeeth,

Rahuri - 413 722

2008

Research Guide	:	Dr. U.Y. Bhoite
Department	:	Animal Science and Dairy Science

The present investigation entitled, "Cytogenetic characterization of Osmanabadi goat" was carried out at Goat Project, M.P.K.V., Rahuri for the study of karyotype, qualitative attributes of chromosomes and effect of sex on the quantitative attributes of chromosomes of Osmanabadi goat.

In the present study the blood samples of apparently healthy Osmanabadi goat were collected in a 10 ml capacity vacutainer tubes. Short term whole blood lymphocyte culture technique was used for chromosomal preparation

necessary for staining. Karyotypes were established from the photomicrographs taken from several good metaphase spread of chromosomes of

Abstract contd... **N.B. Wagh**

each sex. During the preparation of karyotype of goat, all the chromosome pairs were arranged according to their size. To obtain the idiogram, lengths of chromosomes were measured from karyotypes and relative length of each chromosome pair established as a percentage of total haploid genome.

The chromosome number of Osmanabadi goat was observed as 2n = 60 in both sexes. The normal karyotype was characterized by 29 pairs of autosomes and 1 pair of sex chromosomes. All these autosomes were acrocentric in nature. The male genome differed from the female genome in respect of sex chromosome. The X-chromosome was the largest acrocentric chromosome in both male and female goats and the Y-chromosome was smallest metacentric chromosome in the complement.

The longest autosomes contributed 5.17 and 5.32 per cent and the smallest autosomes 1.88 and 1.76 per cent of the haploid genome in female and male Osmanbadi goats, respectively.

The X-chromosome contributed 5.52 and 5.34 per cent of total haploid genome female and male, respectively, whereas, the Y-chromosome contributed 1.37 per cent only.

There was significant effect of sex on the quantitative attributes of chromosomes of goats.

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