

## GENETIC IMPROVEMENT OF INDIGENOUS DAIRY ANIMALS THROUGH PROGENY TESTING PROGRAM

Abdul Ghaffar\*, M. S. Khan\*\*, S. H. Raza\* and M. Afzal\*

\*Livestock and Dairy Development Board, Islamabad

\*\* Department of Animal Breeding and Genetics, University of Agriculture, Faisalabad

Livestock and Dairy Development Board (LDDDB) is executing a PSDP funded Dairy Development Project which has a component of progeny testing of indigenous dairy animals. This component aims at strengthening and expansion of ongoing progeny testing of Nili Ravi buffalo and Sahiwal cattle in Punjab and initiation a new progeny testing programme for Red Sindhi cattle and Kundhi buffalo in Sindh province. This paper describes the activities undertaken so far for achieving the desired targets in Sindh province. A MoU was signed between the Livestock and Fisheries Department, Govt of Sindh and LDDDB on 2<sup>nd</sup> February 2008. Since then activities included three workshops, two in Sindh (Hyderabad, Sukkur) and one in Balochistan (Lasbella), to inject awareness among the farmers regarding this programme. Uptil now 5951 animals have been ear tagged and registered including 267 animals of Red Sindhi in Lasbella, Balochistan. A new concept of contractual hiring of milk recorders and AI technician is being operated in this area. Currently about 2500 animals have been recorded for individual milk production on monthly interval. The registered animals are provided free prophylactic measures for HS and FMD besides deworming of young calves.

**Keywords:** Progeny testing program, milk yield, Kundhi buffalo, Red Sindhi cattle

### INTRODUCTION

Pakistan is an agriculture based country and livestock is an integral part of agriculture which accounts for 52.2 percent of total agricultural share while it contributes 11 percent to GDP (GOP 2008). There are 30-35 million people, in rural areas, of Pakistan involved in livestock raising. The landless producers take livestock production as vital activity, which supplements their income and give them employment opportunity in addition to their traditional occupation. Livestock is also a hedge against crop failure. The greatest impact of livestock in sustainable development designed to help the poor is enhancement of milk production per animal. The milk production can immediately be increased by providing good quality feed which will return back while feed will not be available. In contrast the genetic improvement is permanent in nature and passes generation after generation. The genetic improvement is the real service to poor farmers. However, this process is time consuming and takes longer to achieve the desired objectives. Livestock population of Sindh Province is given in Table 1.

Under the the Ministry of Food, Agriculture and Livestock, Government of Pakistan has approved a project entitled, "Milk collection processing and dairy production and development programme" with total allocation Rs. 1.568 billion for a period of 5 years. The project has three components: i) Milk collection & marketing from small & landless ii) Production of quality breeding animals iii) Production of progeny tested bulls. Under the 3<sup>rd</sup> component project is strengthening progeny testing of Sahiwal cattle and Nili Ravi buffalos in Punjab and initiating a progeny testing

programme for Red Sindhi cattle and Kundhi buffaloes in Sindh province. This paper describes the activities carried out in Sindh province.

**Table 1. District wise population of cattle and buffalo in Sindh province**

S. No.	District	Cattle	Buffalo
1	Badin	315369	498253
2	Dadu	468802	385983
3	Ghotki	281697	246801
4	Hyderabad	76484	309163
5	Jacobabad	507241	469182
6	Jam Shoro	163732	118740
7	Kambar	229617	375132
8	Karachi	270547	414056
9	Kashmore	190872	195704
10	Khairpur	493427	527875
11	Larkana	216199	531329
12	Matiari	266906	234683
13	Mirpurkhas	201533	234348
14	N. Feroz	334758	530530
15	Nawabshah	339188	390259
16	Sanghar	370235	323543
17	Shikarpur	511040	549631
18	Sukkur	211623	196505
19	T. A.Yar	58149	139224
20	T. M. Khan	57416	157934
21	Tharparkar	752265	46328
22	Thatta	410614	367117
23	Umer Kot	197308	97842

## WORK/ACTIVITIES PERFORMED

### 1. Awareness campaign

An advertisement was given in Daily Newspaper (Urdu and Sindhi) describing salient facilities to be provided for the farmers registered in the Progeny Testing Programme (PTP). The farmers were asked to submit expression of interest (EOI) to work with this project. A number of queries were asked by the farmers. The incentives to be given were included:

- i). Free artificial insemination
- ii). Free vaccination against HS and FMD.
- iii). Provision of certified seed on cost sharing basis
- iv). Technical help to preserve green fodders
- v). Animal fairs and prizes

A list of such interested farmers was prepared and a series of seminars/workshops were held in Lasbella, (Balochistan) Hyderabad and Sukkur (Sindh). The title of the workshop was "production recording and progeny testing of Kundhi buffalo and Red Sindhi cattle in Sindh province". All the interested farmers were invited to attend these workshops. These workshops created a harmony among different stakeholders including departmental high officials, farmers and local veterinarians in addition to getting the support for implementing this programme. The experts high lighted the steps and activities involved in the progeny testing programme. Effort was made to identify the potential farmers who were willing to cooperate and interested to be involved in this programme.

### 2. Signing of Memorandum of Understanding (MoU)

A MoU was signed between the Livestock and Fisheries Department, Govt of Sindh and Livestock and Dairy Development Board (LDDDB) on 2<sup>nd</sup> February 2008 in the presence of Chief Minister of Sindh. At this eve CEO presented an overview of the achievements of the projects being executed by LDDDB with special reference to Sindh province.

### 3. Selection of site

In consultation with Livestock and Fisheries Department, Govt. of Sindh following 13 districts (Hyderabad, Matiari, Sanghar, Tando Allah Yar, Tando Muhammad Khan, Badin, Thatta, Dadu, Nosheroferoz, Karachi, Sukkur, Larkana and Shikarpur ) were selected for the execution of the PTP for Kundhi and

Red Sindhi cattle. The district Lasbella (Balochistan) is also included for Red Sindhi cattle. In addition to these 03 Govt. Livestock Farms will also be included in this programme which include Research and Development Centre for Kundhi Buffalo, Rohri, Red Sindhi Cattle Farm Hub (Balochistan) and LES, Korangi, Karachi.

### 4. Selection of farmers

A SOP was developed for selecting the farmers to be included in this programme. The main criterion of selection was the cooperation of the farmer and willingness to improve their breeds for milk production.

### 5. Registration of animals

The animals of selected farmers were ear tagged with imported one side printed Zee Tags. The tags were laser printed in alphabetic series' (A-O). Each series showed LDDDB with a numeric values ranging from 001 to 1000. The production and reproduction status of each animal was also recorded in the livestock register.

### 6. Milk recording

The most important activities of this programme are the individual animal monthly milk recording. For this purpose milking schedule of each district was prepared and distributed among the PTM's and FOM for random checking in addition to concerned officials.

### 7. Modus operandi

Two Progeny Testing Managers (PTM) were hired who are full time employees of the Project. Field vehicles were provided to them to carry out field activities. However, in the project there was no provision for hiring AI technician/ Stock Recorders. A new concept of describing each activity and tagging money with each activity was introduced. The persons having diploma in Veterinary/AI after Matric were hired and provided training to carry out these activities. The remuneration of each activity is given below:

Activity	Amount (Rs)
Registration and ear tagging per animal	10
Individual animal milk recording/animal/month	20
Vaccination /animal	5
Deworming /animal	5
Artificial Insemination per pregnancy	.400
Tattooing per calf	10
Pregnancy diagnosis per rectal palpation	.50

**Table 2. District wise registered farmers and their tagged animals**

S. No..	District	Registered farmers	Adult animals of		Animals under milk record	
			Kundhi	Red Sindhi	Kundhi	Red Sindhi
1	T.A Yar	17	746	-	450	-
2	Matiari	34	1108	205 (19)*	401	78
3	Sanghar	15	945	89 (7)	788	47
4	Hyderabad	14	1452	2 (3)	260	11
5	Nawabshah	13	472			
6	T.M. Khan	15	250	3 (1)	150	-
7	Badin	18	-	-	-	-
11	Sukkar zone	58	406	6	150	-
12	Lasbella	39	-	267	-	167
Total		223	5379	572 (30)	2199	303

\* Values in parenthesis are number of farmers

### **ACKNOWLEDGEMENTS**

The authors acknowledge the efforts of Dr Shahaid Ali and Dr Muhammad Mubarak Jatoi, Progeny Testing Managers, to execute this project in Sindh province.