

## RPF-II

### **PART –I: General Information**

- 600 Project Code**
- 6001 Institute project Code No.: EESE 1.03
- 6002 ICAR project Code No.:
- 601 Name of the Institute and Division**
- 6011 Name and address of Institute: CIRG, Makhdoom, P.O. Farah-281122, Distt. Mathura, U.P.
- 6012 Name of Division/Section: EESE Section
- 6013 Location of the Project: CIRG, Makhdoom
- 602 Project Title: Impact of Improved Technologies and Emerging Market Conditions on Goat Production System**
- 603 Priority Area: Impact of goat production technologies**
- 6031 Research Approach: Applied Research Process or Tech.Devel./Transfer of Tech.
- 604 Specific Area: Feedback and Impact of improved goat production technologies**
- 605 Duration of Project: Four Years
- 6051 Date of Start of Project: April, 2007
- 6052 Likely date of Completion of Project : March, 2011
- 6053 Period for which report submitted: April, 2008 to March 2009
- 606 Total Cost of the Project: 20.42 lakhs**

As per the objectives and technical programme of the project the observation points this year were: Commercial goat farmers and other beneficiaries who received superior germ plasm from the institute, and goat farmers got benefited through improved technologies under AICRP (Goat) centers. To elicit information from the above beneficiaries of the improved germ plasm and improved technologies, a questionnaire was posted to 835 beneficiaries during the year 2007-08, but only 20 farmers responded in that year. This year another 25 farmers responded and sent the filled up questionnaires giving feedback on improved germ plasm and technologies. A preliminary analysis of data collected from these 25 goat farmers was carried out.

The flock size of goats (no. of does) of different farmers ranged from 7 to 172. The goat farmers were post stratified into two categories, namely, category I (<50 goats) and category II (> 50 goats) with average flock size of 22 and 65 does respectively (Table 1). Barbari breeding male constituted the largest share among the total goats supplied by CIRG to farmers (Figure 1). The survivability of adult goats supplied from CIRG to the field was not very encouraging (Figure 4). The mortality was particularly higher in the animals supplied to Bihar, West Bengal, Madhya Pradesh and Jharkhand. However the next generation of animals born from CIRG's does performed better in the field.

The adult mortality in the overall flocks of the farmers was not very high with less than 10 percent. There was large variation in the kid mortality rate among different flocks (Figure 2). A number of flocks suffered with high mortality in kids. There were many factors responsible for high mortality viz. low adoption of improved practices and preventive schedule, non-availability of critical inputs like vaccines, low awareness, size of flock, type of housing, etc. At the same time the average mortality rate in adult goats and kids of traditional goat farmers in Mathura district was estimated to be about 16% and 19% respectively.

All the farmers had some exposure of training and interaction with the CIRG/ other relevant institutions and their awareness of improved technologies of goat production was very high as indicated in the figure 3 and Table 2. The level of adoption of these technologies was also reasonably good. However there was a wide gap in the level of adoption and large proportion of the commercial farmers had not adopted the recommended technologies. Lack of knowledge, awareness and easy access to critical inputs were the major factors responsible for low adoption.

Moreover, the information on goat production and adoption of technology related to goat production was collected from 25 goat keepers in Nadia district of West Bengal and 15 goat keepers of Ganjam district of Orissa covered under AICRP on Goats. The data on flock size, mortality rate, body weight on males and females at different age and level of awareness and adoption of improved goat production technologies has been analyzed.

The detail of the work done during the year has been presented in the ANNEXURE – I.

## Part - II : Investigator Profile

### 609 Principal Investigator :

6091 Name : Dr. Shalander Kumar  
6092 Designation : Sr. Scientist (Agril. Economics)  
6093 Division / Section : Extension Education and Socio-Economics  
6094 Location : CIRG, Makhdoom.  
6095 Institute address : CIRG, Makhdoom, P.O. Farah - 281122, Mathura (U.P.)

### 610 Co-investigator :

6101 Name : Dr. Khushyal Singh  
6102 Designation : Scientist (Agril. Extension)  
6103 Division / Section : Extension Education and Socio-Economics  
6104 Location : CIRG, Makhdoom.  
6105 Institute address : CIRG, Makhdoom, P.O. Farah -281122, Mathura (U.P.)

**(Dr. Khushyal Singh has not submitted any report of the work he was supposed to undertake during the current year)**

### 611 Co-investigator :

6111 Name : Dr. M.K. Singh  
6112 Designation : Sr. Scientist (Animal Genetics & Breeding)  
6113 Division / Section : Goat Genetics & Breeding  
6114 Location : CIRG, makhdoom.  
6115 Institute address : CIRG, Makhdoom, P.O. Farah-281122, Mathura (U.P.)

## **PART-III: Technical Details**

### **623 Introduction and objectives**

Goats greatly contribute to the economy of resource poor rural people in terms of family nutrition and income and employment generation. But their productivity is low and there is wide gap between actual and potential productivity. The researchers have generated number of technologies and package of practices for improving productivity of goats. Development and dissemination of technologies for breed improvement, improving feed availability, disease prevention and control and flock management, and ensuring remunerative prices for the producers would be crucial for improving productivity of animals for sustainable goat production. Transfer of technologies for scientific and hygienic goat production has become even more important in the liberalized world trade scenario, where world market is becoming quality and health conscious. CIRG and other agencies have made extension efforts for transferring the improved technologies. However the response of the farmers and impact of these technologies is yet to be assessed.

Goat, which has been associated with poorest of the poor, is emerging as one the most promising livestock in the country. Improved technologies and emerging market opportunities could be the favorable factors contributing to enhanced economic potential of goats. However there is need to understand the changing market conditions and the extent of transfer of goat production technologies to the field and impact thereof. The present study is an attempt in this direction.

### **6231 Immediate objectives**

- 1.To study the diffusion of superior goat germ plasm and improved production technologies to the field.
- 2.To assess the impact of improved technologies on goat production system.
- 3.To examine the emerging market conditions/ opportunities and their implications for goat production.

### **6232 Long term objective**

- To get feedback on goat production technologies and to understand implications of changing market conditions on goat sector.

## **624 Project Technical Profile**

### **6241 Technical Programme**

#### **Year 2008-09**

- Collect information on distribution of superior breeding goats from AICRP (G) centers.
- Collecting responses through questionnaire from beneficiaries of AICRP centers.
- Compilation, digitization and analysis of data
- Collection of data from commercial as well as traditional farmers as per RPF I.

- Compilation, tabulation and analysis of data
- Report writing

#### Year 2009-10

- Collecting responses through questionnaire from more beneficiaries of AICRP centers.
- Compilation, digitization and analysis of data
- Collection of data from commercial as well as traditional farmers and markets as proposed in RPF I.
- Compilation, tabulation and analysis of data
- Report writing

6242 Man months' involvement of component projects workers for the specified year

Name	Designation	Time to be spent	Man-months
Dr. Shalander Kumar	Sr. Scientist	50%	6
Dr. Khushyal Singh	Scientist	He has not submitted any report of the work he was supposed to undertake during the current year	-
Dr. M.K. Singh	Sr. Scientist	25%	3
Technical Assistant	One	Not available	

#### 625 Progress of work

##### 6251 Achievement in terms of targets fixed for each activity

As per the objectives and technical programme of the project the observation points this year were: Commercial goat farmers and other beneficiaries who received superior germ plasm from the institute, and goat farmers got benefited through improved technologies under AICRP (Goat) centers. To elicit information from the above beneficiaries of the improved germ plasm and improved technologies, a questionnaire was posted to 835 beneficiaries during the year 2007-08, but only 20 farmers responded in that year. This year another 25 farmers responded and sent the filled up questionnaires giving feedback on improved germ plasm and technologies. A preliminary analysis of data collected from these 25 goat farmers was carried out. All the objectives set for the current year have been well achieved.

**6252 Questions- Answered: The following questions have been answered:**

- Preliminary understanding of level of adoption of goat production technologies by the farmers and preliminary feedback on superior germ plasm produced by CIRG.

**6253 Process/ Product/ Concept/ Technology developed during the year:**

- Impact of linking stakeholders for triggering adoption of technologies is being evaluated in the project.

**6254 Utility of results obtained so far**

While conducting this study, a total of 835 goat farmers were contacted and many of them were brought on a common platform provided through a Scientists -Entrepreneurs-Farmers Interactive Meet. This interactive meet not only helped in seeking feedback but also gave the participating farmers an opportunity to better access technologies and critical inputs through strengthened linkages with the other stakeholders. Moreover the analysis of the data has given a preliminary view on technology adoption and impact of superior germplasm developed by CIRG. The feedback collected from the project does provides the leverage points to further improve the package of practices and technologies.

### **626 Publications and Material Developed**

(One copy each to be supplied with this proforma)

**6261 Research Papers submitted:**

**6262 Popular articles: --**

**6263 Reports: --**

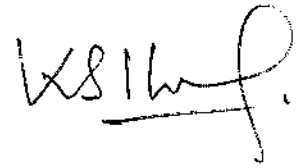
**6264 Seminars and Workshops (relevant to the Project) in which the scientists have participated: 3**

1. National Seminar on 'Rural India Developmental Alternatives: Sectoral Convergence for Livelihood Security' at Central Institute for Research on Goats, Makhdoom on January 16-18, 2009
2. Agricultural and Animal husbandry Technical Seminar, Sh. Jaswant Exhibition and Cattle fair, Bharatpur, 6<sup>th</sup> October 2008 (Invited speaker: Prospects of goat farming as a source of income for rural people)
3. Eastern Rajasthan Farmers' Fair organized by Lupin foundation and IARI at Bhartapur, 27<sup>th</sup> October 2009. (Invited speaker: Economics and marketing of goats)

627 Infrastructure facilities developed: Nil

Signature of Principal Investigator:

Dr. Shalander Kumar



Signature of Co- Investigator:

Dr. Khushyal Singh

Signature of Co- Investigator:

Dr. M.K.Singh



Signature and Comments of the Head of the Division/ Section

Signature and Comments of the Director

## ANNEXURE- I

As per the objectives and technical programme of the project the observation points this year were: Commercial goat farmers and other beneficiaries who received superior germ plasm from the institute, and goat farmers got benefited through improved technologies under AICRP (Goat) centers. To elicit information from the above beneficiaries of the improved germ plasm and improved technologies, a questionnaire was posted to 835 beneficiaries during the year 2007-08, but only 20 farmers responded in that year. This year another 25 farmers responded and sent the filled up questionnaires giving feedback on improved germ plasm and technologies. A preliminary analysis of data collected from these 25 goat farmers have been presented below:

Table 1: Details of flock size of goat keepers

Category	No. of goat keepers	Buck	Castrated male	Adult female	Kid	Total goats
I (< 50 goats)	11	1.0	0.64	21.64	15.18	38.46
II (> 50 goats)	14	3.55	10.18	64.64	35.45	113.82
Overall	25	2.43	5.98	45.72	26.53	80.66

The flock size of goats (no. of does) of different farmers ranged from 7 to 172. The goat farmers were post stratified into two categories, namely, category I (<50 goats) and category II (> 50 goats) with average flock size of 22 and 65 does respectively (Table 1). Barbari breeding male constituted the largest share among the total goats supplied by CIRG to farmers (Figure 1). The survivability of adult goats supplied from CIRG to the field was not very encouraging (Figure 4). The mortality was particularly higher in the animals supplied to Bihar, West Bengal, Madhya Pradesh and Jharkhand. However the next generation of animals born from CIRG's does performed better in the field.

The adult mortality in the overall flocks of the farmers was not very high with less than 10 percent. There was large variation in the kid mortality rate among different flocks (Figure 2). A number of flocks suffered with high mortality in kids. There were many factors responsible for high mortality viz. low adoption of improved practices and preventive schedule, non-availability of critical inputs like vaccines, low awareness, size of flock, type of housing, etc. At the same time the average mortality rate in adult goats and kids of traditional goat farmers in Mathura district was estimated to be about 14% and 19% respectively.

All the farmers had some exposure of training and interaction with the CIRG/ other relevant institutions and their awareness of improved technologies of goat production was very high as indicated in the figure 3 and Table 2. The level of adoption of these technologies was also reasonably good. However there was a wide gap in the level of adoption and large proportion of the commercial farmers had not adopted the recommended technologies. Lack of knowledge, awareness and easy access to critical inputs were the major factors responsible for low adoption.



Figure 1: Details of goats supplied from CIRG

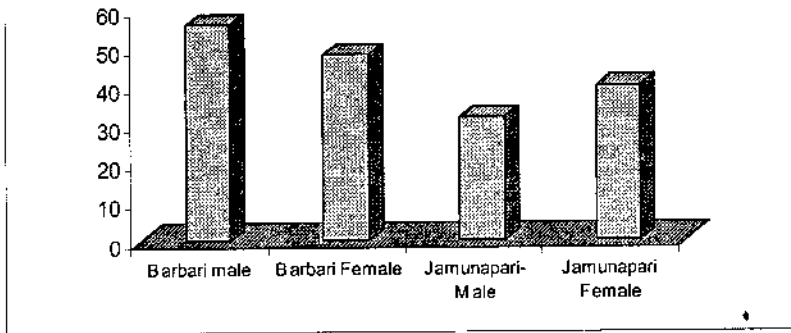


Figure 2: Annual mortality rate in adult goats and kids in farmers flock

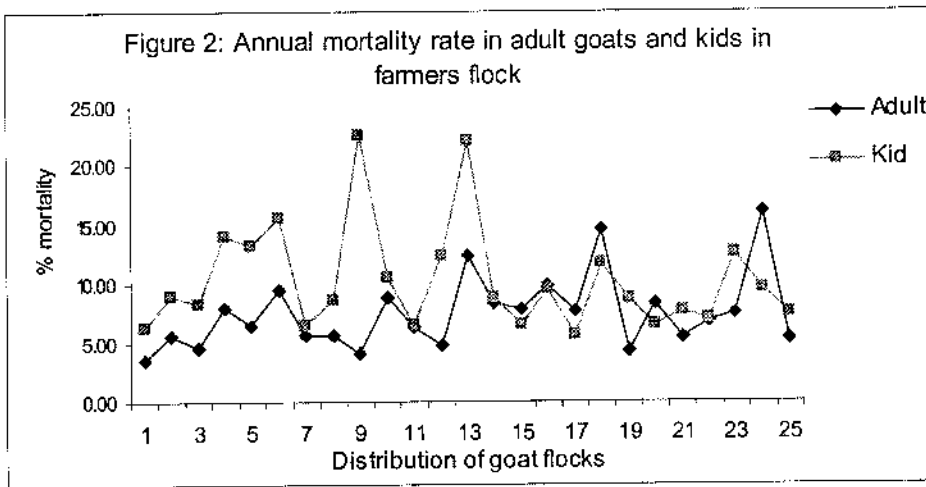
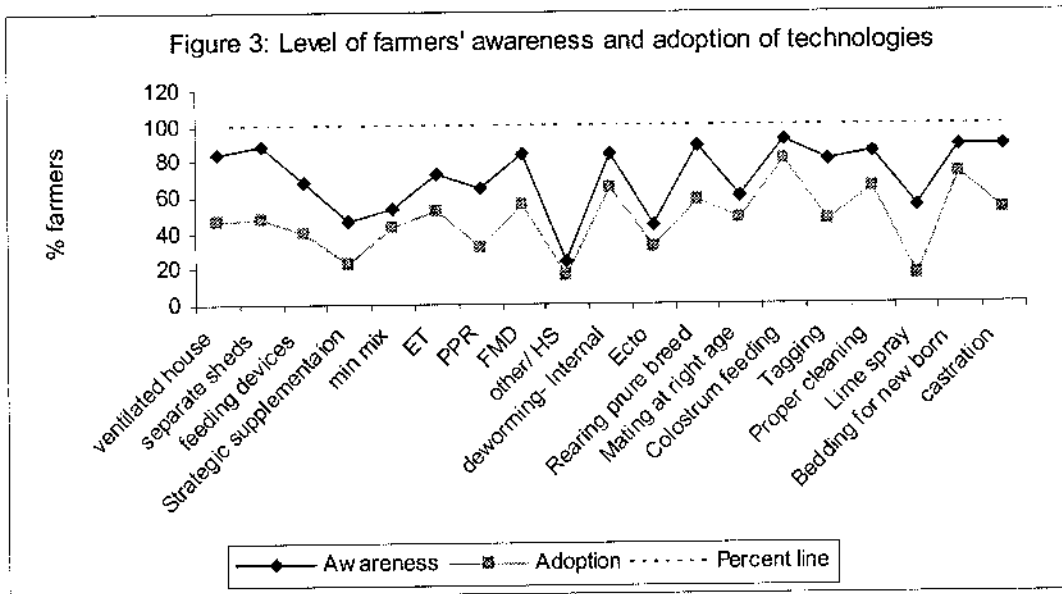


Figure 3: Level of farmers' awareness and adoption of technologies



**Table 2: Level of farmers' awareness and adoption of improved technologies (% farmer)**

Technologies	Awareness	Adoption
Ventilated house	84	68
Separate sheds	88	48
Feeding devices	68	40
Use of concentrate	100	100
Min mix	60	36
ET	72	52
PPR	64	36
FMD	84	68
other/ HS	24	16
Deworming- Internal	84	64
Ecto parasiticial	44	32
Rearing pure breed	88	64
Mating at right age	60	48
Colostrum feeding	92	80
Tagging	80	64
Cleaning/lime spray	76	48
Bedding for new born	88	72
Castration of young males	88	64

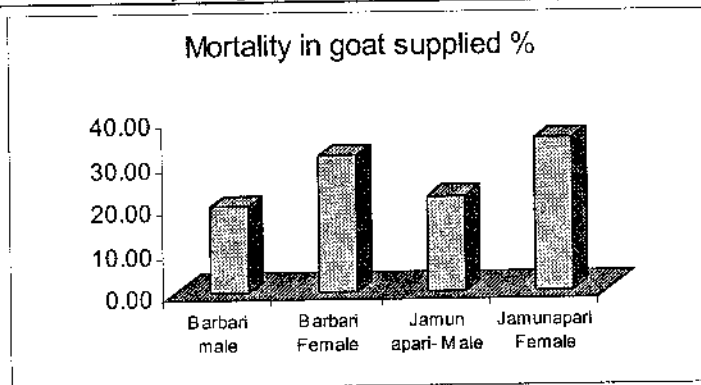


Figure 4: Mortality rate animals supplied by the institute

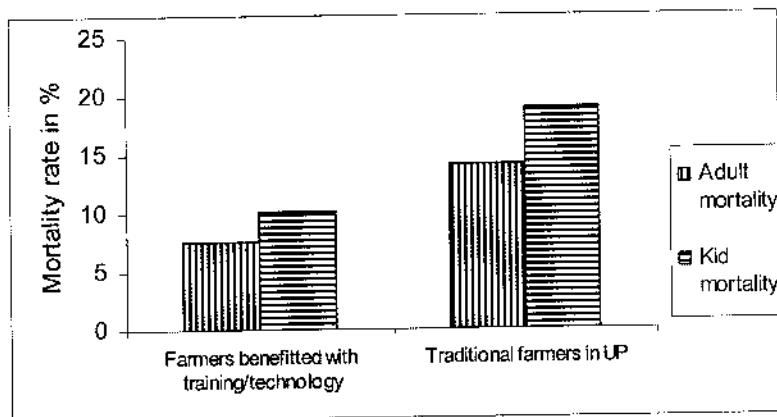


Figure 5: Comparative mortality rates due to diseases in kids and adult goats

**Table 3: Farmers' perception on performance of bucks supplied by the institute**

Particulars	% Farmer
Maintaining good health	50
Mounting on does in estrus	58
Does not mount on does in estrus	22
Mount only 1-2 times in a day	10
Mounting does not result in successful conception	10

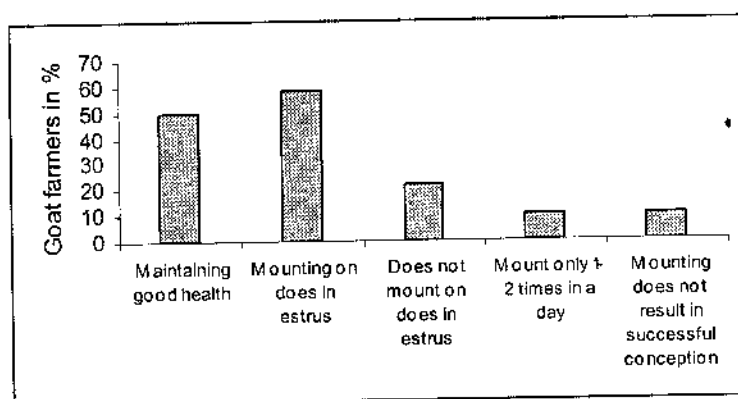


Figure 6: Farmers' perception on performance of bucks supplied by CIRG

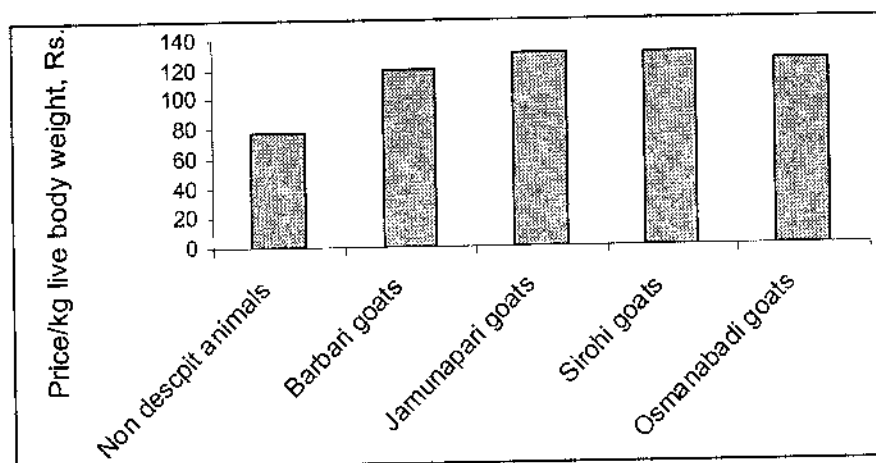


Figure 6: Comparative market price of goat of different breeds

### Feedback on goat farming and technology adoption in areas under AICRP on goats

#### *Black Bengal goats in Nadia district of West Bengal*

The information on goat production and adoption of technology related to goats production was collected from 25 goat keepers in Nadia district of West Bengal covered under AICRP on Goats. The details on flock size, mortality rate, body weight on males and females at different age and level of awareness and adoption of improved goat production technologies has been presented in the Figures 7 to 10.

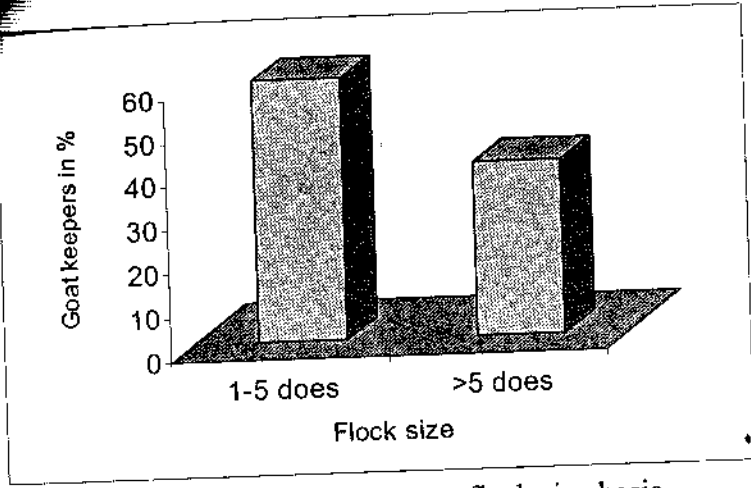


Figure 7: Distribution of farmers on flock size basis

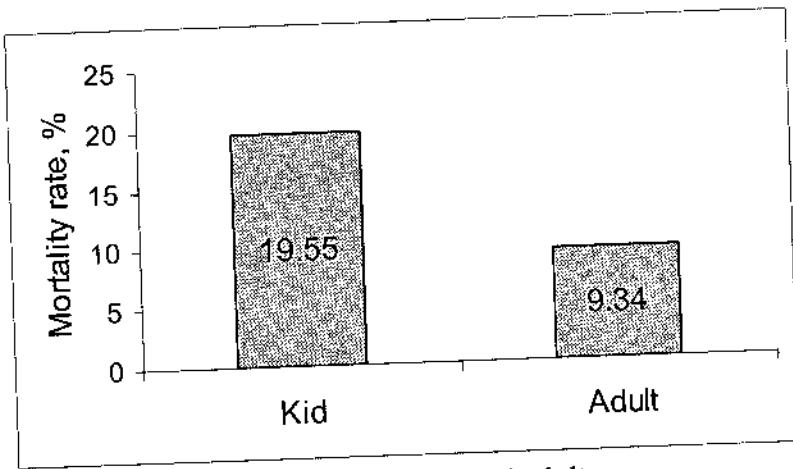


Figure 8: Level of mortality in kids and adults

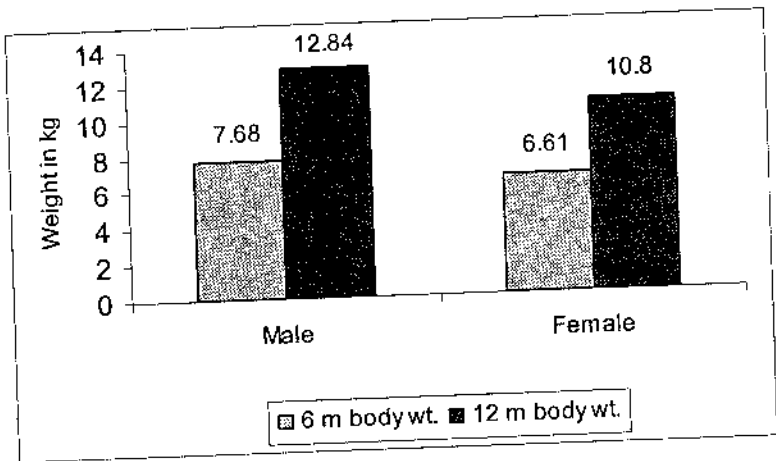


Figure 9: Body weight of kids of different age groups

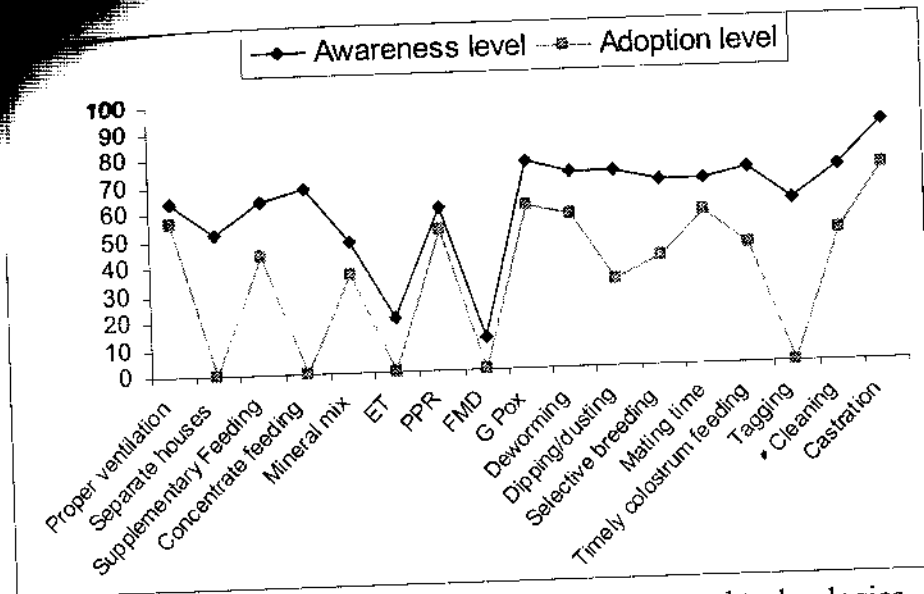


Figure 10: Level of awareness and adoption of improved technologies

### Ganjam goats in Ganjam district of Orissa

The information on goat production and adoption of technology related to goat production was collected from 15 goat keepers in Ganjam district of Orissa covered under AICRP on Goats. The details on flock size and level of awareness and adoption of improved goat production technologies have been presented in the Figures 11 and 12.

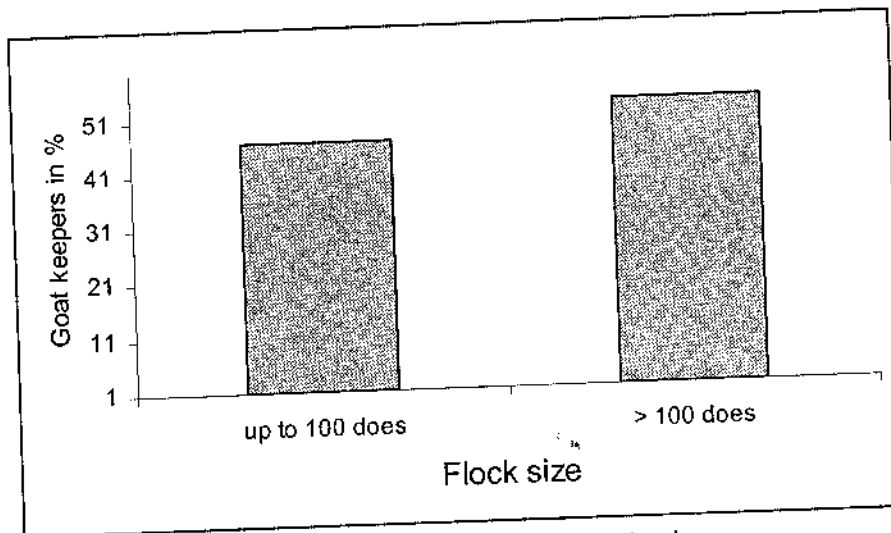


Figure 11: Distribution of farmers on flock size basis

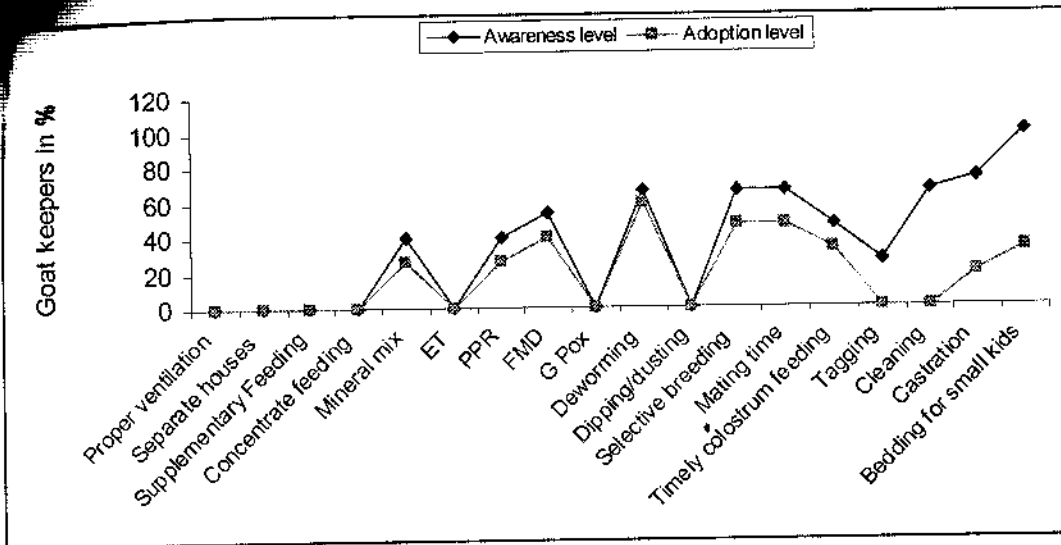


Figure 10: Level of awareness and adoption of improved technologies