

ADOPTION OF SCIENTIFIC KIDDING MANAGEMENT PRACTICES BY TRIBAL GOAT KEEPERS

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ABSTRACT

Goats plays a vital role in the livelihood security of tribal communities by providing regular income, nutritious food (milk and meat) and employment with minimal investment. Their adaptability to harsh environments, ability to thrive on locally available feed resources and high reproductive efficiency make goats an integral component of sustainable farming systems in tribal districts. Thus, a field study was conducted in Tapi district of south Gujarat to study the scientific kidding management practices followed by the tribal goat keepers. Data was collected from two selected blocks and 100 goat keepers were decided through personal interview with the help of pre-tested structured interview schedule. The study revealed that fewer respondents adopt navel disinfection of kids after its birth (23.00 per cent), none of the respondents followed dehorning process in their kids, most of the respondents fed colostrum to their kids within one hour after birth and fed thrice in a day (83.00 per cent), 65.00 per cent of respondents take care during kidding at night time, prepared a soft bedding material (78.00 per cent) and less than fifty per cent of respondents provide separate kidding space for their kids. None of the goat keepers followed castration method in male goat kids. Major constrain faced by tribal people was lack of knowledge regarding ideal weaning age of kid for better production. Family size (0.2415), Size of land holding (0.0303), No. of goat possessed (0.0983) and goat rearing experience (0.0981) found positively correlated with adoption about scientific kidding management practices in goat. While, Age (-0.0437), Education (-0.0373) and Family income (-0.0329) were negatively correlated with adoption about scientific kidding management practices in goat.*

Keywords: adoption, kidding management, constrains, goat keepers

INTRODUCTION

Goat husbandry is the backbone of the socio-economic structure for tribal communities in Tapi district of South Gujarat. Often branded as a “low-input, high-output” enterprise, goat rearing provides a critical security for the landless and marginal tribal farmers (Chaudhary *et al.*, 2022). Goats require low initial investment and provide high returns in the form of milk, meat and manure. However, the profitability of goat farming is primarily governed by the survival and growth rate of kids. Various studies indicate that kid mortality rates in traditional systems range between 15% and 35%, with nearly 70–80% of deaths occurring within the first 30 days of life primarily due to poor kidding management practices. Thus, the kidding period is the most vulnerable phase in the production cycle (Sabapara and Deshpande, 2010). Scientific management involves a transition from traditional scavenging systems to structured interventions. Optimized production in small ruminants requires specific attention to prepartum care, neonatal hygiene and immunological support by nurturing colostrum within 30-60

minutes of birth can reduce mortality upto 50% and improves growth rate by 20-30% (Bosman *et al.*, 1997). Tribal farmers in Tapi possess high experiential knowledge though their adoption of “hygienic kidding” is often limited by a lack of access to extension services and formal education (Nirmala *et al.*, 2017). The gap between available technology and field level adoption is a significant hurdle in rural development (Quddus, 2012; Mahammad *et al.*, (2022). Therefore, this study seeks to quantify the current level of scientific kidding management adoption among the tribal goat keepers of Tapi district and identify the socio-psychological barriers preventing the transition from traditional to scientific goat husbandry.

OBJECTIVES

- (1) To measure the extent of adoption about scientific kidding management practices by tribal goat keepers
- (2) To know the constraints faced in adoption of scientific kidding management practices by tribal goat keepers

METHODOLOGY

An *ex-post-facto* research design was employed for this present study (Vinaya et al., 2016)). The study was conducted in Tapi district of South Gujarat, where two blocks namely Songadh and Uchchal were selected purposively based on their relatively higher goat population. From each selected block, five villages were chosen resulting in a total of 10 villages. Further, from each village 10 goat keepers were selected using simple random sampling constituting a total sample size of 100 respondents. The data were collected through the personal interview method with the help of a

pre-tested and well-structured interview schedule. The study mainly focused on dependent variables which included the level of adoption of scientific kidding management practices in goat rearing and the constraints faced by goat keepers in adopting these practices. The adoption level was quantified by using a structured scoring procedure based on scientific recommended practices. Statistical tools such as frequency, percentage, mean score and ranking methods were used to analyse. Additionally, correlation analysis was used to examine the relationship between selected independent variables and the level of adoption. The collected data were systematically tabulated and analyzed to interpret the result.

RESULTS AND DISCUSSION

Table 1: Distribution of respondents according to their extent of adoption about kidding management practices in goat

(n=100)

Sr. No.	Variables	Category	Frequency (f)	Percent (%)
1	Care during pregnancy	Observation during Kidding: Night duty	65	65.00
		Prepared a soft bedding material	78	78.00
		Separate kidding space	46	46.00
2	Navel disinfection of kids after birth	Yes	23	23.00
		No	77	77.00
3	Dehorning of Kids	Yes	00	0.00
		No	100	100.00
4	Colostrum to be fed after birth	Within 1 hour	17	17.00
		After 1 hour	83	83.00
5	Frequency of colostrum to be fed in a day	Once in a day	02	02.00
		Twice in a day	25	15.00
		Thrice in a day	73	83.00
6	Ideal weaning age of kid	At 3 months of age	18	18.00
		After 3 months of age	82	82.00
7	Castration of male kids	Yes	00	0.00
		No	100	100.00

The data presented in the table 1 reveal the extent of adoption of scientific kidding management practices among tribal goat keepers. With regard to care during pregnancy, a majority of the respondents (78.00 per cent) prepared soft bedding material at the time of kidding, followed by 65.00 per cent who performed night observation during kidding. However, less than half of the respondents (46.00 per cent) maintained a separate kidding space, indicating partial adoption of recommended housing practices by tribal goat keepers. These findings were supported by Butani *et al.*, (2024). Navel disinfection is a crucial practice to prevent navel ill, septicemia and early kid mortality. In this study showed that only 23.00 percent of respondents practiced navel disinfection, while 77.00 per cent did not adopt it.

This poor adoption indicates inadequate awareness and limited access to veterinary advisory services (Vinaya et al., 2023). Comparable low adoption of navel care practices was also observed by Patel *et al.*, (2020) in smallholder goat production systems. The findings indicated that none of the respondents adopt dehorning practices in their kids. This complete non-adoption could be due to lack of technical skill, fear of injury to kids, absence of equipment and perception that horns are a natural and necessary trait in goats under natural extensive systems. Similar observations of negligible dehorning practices were reported by Halapti and Vahoniya, (2023) under traditional goat rearing systems.

Colostrum feeding ensures passive immunity transfer and reduces early kid mortality. Here, less than one

fifth (17.00 per cent) of tribal goat keepers fed colostrum within one hour of birth, whereas more than four fifth (83.00 per cent) provided it after one hour, indicating that poor awareness regarding importance of immunoglobulin absorption at early growth phase. However, 73.00 per cent fed colostrum thrice daily, followed by 25.00 per cent twice daily and 02.00 per cent once daily. This shown that goat keepers possess relatively higher knowledge regarding feeding practices compared to health care, including colostrum feeding (Jegoda *et al.*, 2022). Weaning age has significant implications for kids' growth and reproductive

efficiency of does. This study showed that only 18.00 per cent of respondents practiced weaning at the recommended age of three months, while 82.00 per cent weaned after three months. This may be linked to traditional beliefs, small flock size and dependence on natural suckling under low-input production systems. Similarly, none of the respondents practiced castration (100.00 per cent) method in male kids. The may be due to lack of awareness, technical know-how and veterinary support. These findings are in line with study of Das *et al.*, (2022).

Table 2: Constraints faced by goat keepers for scientific kidding management practices in goat

(n=100)

Sr. No.	Constrains	Frequency	Percent	Rank
1	Inability to invest for separate kidding space	92	92.00	I
2	Limited exposure to training programmes and extension activities for scientific kidding practices	88	88.00	II
3	Knowledge regarding ideal weaning age of kid	81	81.00	III
4	Difficulty in technical assistance during kidding emergencies	77	77.00	IV
5	Parasitic problems in kids	74	74.00	V
6	Ideal age for green fodder fed to kids	68	68.00	VI
7	Handling of difficult kidding	63	63.00	VII
8	Breeding after 2-3 months of kidding	59	59.00	VIII

The data depicted in table 2 reflected that 92.00 per cent of goat keeper had constrains about inability to invest for separate kidding space followed by limited exposure to training programmes and extension activities for scientific kidding practices (88.00 per cent), knowledge regarding ideal weaning age of kid (81.00 per cent), difficulty in technical assistance during kidding emergencies (77.00 per cent), parasitic problems in kids (74.00 per cent), ideal age for green fodder fed to kids (68.00 per cent), handling of difficult kidding (63.00 per cent) and breeding after 2-3 months of kidding (59.00 per cent). These findings were supported by Sorathiya *et al.*, (2016) and Patbandha *et al.*, (2018).

Table 3: Correlation between independent variables and adoption about Scientific kidding management practices in goat

(n=100)

Sr. No.	Independent variables	r - Value
X ₁	Age	-0.0437
X ₂	Education	-0.0373
X ₃	Family size	0.2415*
X ₄	Family Income	-0.0329
X ₅	Size of land holding	0.0303
X ₆	No. of goat possessed	0.0983
X ₇	Goat rearing Experience	0.1705

*Significant at 5 per cent the level of significance

Data presented in table 3 revealed that Family size (0.2415*), Size of land holding (0.0303), No. of goat possessed (0.0983) and goat rearing experience (0.1705) found positively correlated with adoption about Scientific kidding management practices in Goat, while Age (-0.0437), Education (-0.0373) and Family income (-0.0329) were negatively correlated with adoption about scientific kidding management practices in Goat.

This indicates that the adoption about scientific kidding management practices in goat found positive as it may be due to availability of more family labour, which facilitates close supervision during pregnancy, night observation at kidding, neonatal care and kid feeding management. Similarly, size of land holding had a negligible positive relationship with adoption. This indicates that land resources had minimal influence on kidding management as goat rearing in tribal areas is largely based on common grazing lands rather than cultivated holdings. Goat rearing experience and no. of goat possessed showed a positive adoption which suggests that experienced goat keepers possessed relatively better practical knowledge about kidding care. In contrary, age is negatively correlated with adoption about scientific kidding management practices in goat due to they are more familiar with traditional methods of breeding management in goat due to lack of education level. Family income were

negatively correlated with adoption about scientific kidding management practices in goat they think that goat husbandry acts as a subsidiary income rather than actual income and divert their surplus income towards other profession. This finding was supported by Gamit *et al.* (2020); Patel *et al.* (2025); Parmar *et al.* (2025); Chaudhary *et al.* (2024); Chaudhary *et al.* (2024); Barasara *et al.* (2023).

CONCLUSION

It can be concluded that majority of tribal goat keepers were prepared a soft bedding material during pregnancy for caring the kids, not followed navel disinfection of kids after birth, none of the respondents carried out dehorning of kids, fed colostrum to kids after 1 hour of birth, frequency of feeding colostrum to kids was thrice in a day, weaned their kids after 3 months of age and no any goat keepers adopt castration method in male kids. Major constrain faced by goat keepers about scientific kidding management practices was inability to invest for separate kidding space.

RECOMMENDATIONS

In light of these findings, strengthening livestock extension services, organizing need-based skill training programmes, promoting doorstep veterinary care and ensuring timely availability of essential inputs are crucial for enhancing the adoption of scientific kidding management practices. KVK, local NGOs or extension service centers should arrange awareness campaign mainly focused on scientific interventions in tribal regions would significantly improve kid health, reduce mortality and enhance the economic sustainability of goat farming systems which will undoubtedly increase the goat yield and indirectly the living standard of tribal.

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CONFLICT OF INTEREST

All authors are declared that they have no any conflict of interest for this study.

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