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Determination of knowledge level of goat farmers about breeding practices in Punjab

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Abstract

The present study was conducted on randomly selected 240 goat farmers belonging to six different agro-climatic zones of Punjab (40 farmers from each zone) to determine breeding knowledge level of goat farmers. The goat farmers were interviewed personally at their goat farm. Knowledge about breed specific character, age of sexual maturity in does, age of sexual maturity in bucks, heat detection and heat signs were known to 45.00%, 40.42%, 45.00%, 34.58% and 54.17% respectively in Punjab. Knowledge about methods of mating, male: female for breeding, age of castration, gestation period, methods of pregnancy diagnosis, care during pregnancy and complication during pregnancy was with 32.08%, 40.00%, 43.75%, 83.33%, 20.83%, 40.83% and 33.75% goat farmer. Knowledge about signs of kidding, complication during kidding, care after kidding, lactation period in doe, kidding interval, sexually transmissible diseases, causes of pregnancy loss, reproductive disorder and best breeding season was possessed by 39.17%, 32.50%, 34.17%, 33.75%, 30.00%, 24.58%, 21.25%, 19.58% and 49.58% goat farmers. The mean awareness of goat farmers about breeding practices in Punjab was 38.02%. In different agro-climatic zones of Punjab, breeding knowledge scores of goat farmers were significantly different ($P < 0.05$). The present study suggests assessing breeding knowledge level of goat farmer first before organizing knowledge enrichment drives related with breeding of goats in different areas.

Keywords: Breeding, farmer, goat, knowledge, Punjab

Introduction

Goats are important to food and economic securities of developing regions for countless years, and their contributions to economic returns in developed countries has been rising as well [1]. According to 20th Indian Livestock Census 2019, the Goat population in India is 148.88 million and in Punjab is 3.48 lakhs. The rapidly increasing goat populations in developing countries, point to the assistance of goats in solving some of the needs created by the rising human populations [2]. Due to more preference of Indians for goat meat (Chevon) among all other meats, the demand for goat meat is progressively increasing [3]. Also, goats are the most prolific domesticated ruminant. Faster reproduction contributes to the genetic progress that can be achieved [4]. Goats can quickly multiply and are easily convertible to cash to meet financial needs of the rural producers. However, poor productivity and lack of scientific knowledge about goat farming proves to be the lacunae behind goat production in rural India [5]. As, the suitable extension strategy for upliftment of goat farmers requires a thorough understanding of present knowledge level. So, a study was planned to determine breeding knowledge level of goat farmers in Punjab.

Materials and Methods

The present study was conducted by randomly selecting 240 goat farmers from Punjab state. On the basis of agro climatic conditions, Punjab state has been divided into six different zones [6], namely Sub mountain undulating zone (Zone I), Undulating plain zone (Zone II), Central plain zone (Zone III), Western plain zone (Zone IV), Western zone (Zone V) and Flood plain zone (Zone VI). 40 goat farmers from each agro-climatic zone were personally interviewed with the help of pre-structured and pre-tested interview schedule by visiting their farm at field level. A total of 21 questions /items related to breeding practices of goats were compiled after discussion with field extension personnel, consultation with concerned subject matter specialists and after scrutinizing relevant literature / research articles. The data was recorded after noting expressed opinion and after observing the things physically at goat farm. Goat farmers possessing knowledge about a particular breeding practice were assigned one score

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and those which do not possess knowledge about that particular practice were assigned zero score. Goat farmers were categorized into three categories as low, medium and high knowledge with scores 0-7, 8-14 and more than 14 respectively. For analysis, simple tabular techniques and appropriate statistical methods were employed by using SPSS version 20.0.

Results and Discussion

A perusal of Table 1 indicated that in Punjab, breed specific character, age of sexual maturity in does, age of sexual maturity in bucks, heat detection and heat signs were known to 45.00%, 40.42%, 45.00%, 34.58% and 54.17% respectively. In Martinique, on 62% of farms, the males remained with the females permanently, also 83% of farmers did not resort to methods of controlled-mating. The first criteria used for choosing animals (80 to 90% of answers) of both sex, were development and conformation [7]. In south Gujarat, majority of goat keepers detected the estrus on the basis of symptoms *viz.* mounting on each other, bleating, tail vibration and frequent urination. However, mounting on each other was the most reliable symptom for detection of estrus in the goats. The breeding of females was strictly done through natural service and majority of goat keepers (65.89%) used bucks from their relatives. However, they were keen to change the buck after first kidding (51.41%) or second kidding (48.59%). Majority of goat keepers (73.21%) preferred the castration of male kids to fetch more prices [8]. Knowledge about methods of mating, male: female for breeding, age of castration, gestation period, methods of pregnancy diagnosis, and care during pregnancy and

complication during pregnancy was with 32.08%, 40.00%, 43.75%, 83.33%, 20.83%, 40.83% and 33.75% goat farmer. In Nathdwara, Vallabh Nagar, Railmagra and Devgarh areas of Rajasthan, the most common symptoms of heat detection were bellowing and rapid tail movement. Natural service was commonly used for breeding and 44% have their own breeding buck. 42% goat keepers used an abdominal appearance method of pregnancy detection. Majority of goat rearers (62%) were not castrating their male kids. Physical appearance as selection criteria for selecting breeding bucks was used by 39% goat keepers [9]. In Andhra Pradesh, majority of the goat farmers followed 1:21 to 30 sex ratio in their flocks and they did not rotate the breeding bucks as well, as did not select breeding males and females [10]. Knowledge about signs of kidding, complication during kidding, care after kidding, lactation period in doe, kidding interval, sexually transmissible diseases, causes of pregnancy loss, reproductive disorder and best breeding season was possessed by 39.17%, 32.50%, 34.17%, 33.75%, 30.00%, 24.58%, 21.25%, 19.58% and 49.58% goat farmers. The mean awareness of goat farmers about breeding practices in Punjab was 38.02% (Figure 1). It emphasizes that knowledge level of goat farmers about various breeding practices is not satisfactory. However, the efficient reproductive management is essential for obtaining maximum production from goats. So, there is dire need of organizing campaign/training programme for enriching breeding knowledge to goat farmers. Among farm women in Wayanad district of Kerala, very few women had correct knowledge about important aspects of breeding of goats [11].

Table 1: Awareness percentage of farmers about breeding practices in different agro-climatic zones of Punjab

Awareness about	Agro-climatic zone						Over all (n=240)
	I (n=40)	II (n=40)	III (n=40)	IV (n=40)	V (n=40)	VI (n=40)	
Breed specific character	35.00	40.00	15.00	65.00	65.00	50.00	45.00
Age of sexual maturity in does	22.50	35.00	32.50	57.50	47.50	47.50	40.42
Age of sexual maturity in bucks	32.50	30.00	52.50	47.50	65.00	42.50	45.00
Heat detection	30.00	37.50	52.50	35.00	32.50	20.00	34.58
Heat signs	47.50	45.00	50.00	57.50	77.50	47.50	54.17
Methods of mating	25.00	30.00	35.00	27.50	47.50	27.50	32.08
Male : Female for breeding	42.50	35.00	37.50	37.50	72.50	15.00	40.00
Age of castration	42.50	25.00	50.00	40.00	77.50	27.50	43.75
Gestation period	87.50	82.50	82.50	85.00	88.00	75.00	83.33
Methods of pregnancy diagnosis	12.50	12.50	35.00	35.00	12.50	17.50	20.83
Care during pregnancy	37.50	22.50	42.50	45.00	67.50	30.00	40.83
Complication during pregnancy	35.00	17.50	32.50	42.50	60.00	15.00	33.75
Signs of kidding	45.00	20.00	40.00	35.00	62.50	32.50	39.17
Complication during kidding	40.00	20.00	35.00	35.00	35.00	30.00	32.50
Care after kidding	45.00	17.50	35.00	37.50	47.50	22.50	34.17
Lactation period in doe	35.00	25.00	42.50	37.50	35.00	27.50	33.75
Kidding interval	27.50	17.50	30.00	35.00	50.00	20.00	30.00
Sexually transmissible diseases	25.00	10.00	30.00	30.00	40.00	12.50	24.58
Causes of pregnancy loss	15.00	12.50	30.00	30.00	27.50	12.50	21.25
Reproductive disorder	15.00	2.50	30.00	27.50	27.50	15.00	19.58
Best breeding season	52.50	27.50	45.00	75.00	65.00	32.50	49.58
Mean percentage	35.71	26.90	39.76	43.69	52.50	29.52	38.02

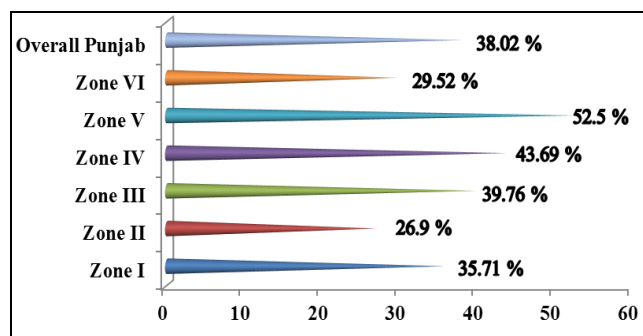


Fig 1: Awareness percentage of goat farmers about breeding practices in different agro-climatic zones of Punjab

Table 2 and Figure 2 indicate that breeding knowledge score of goat farmers was significantly different ($P < 0.05$) between different agro-climatic zones of Punjab. This suggests that same knowledge enrichment strategies about breeding practices cannot be followed in different agro-climatic zones. The Undulating plain zone (Zone II) has lowest breeding knowledge score and western zone (zone V) has highest breeding knowledge score. So, extension strategies should be formulated keeping in view the knowledge level of farmers of that particular area. The breeding knowledge level of zone I, zone III, zone IV, zone V and overall Punjab was medium, while in zone II and zone VI, breeding knowledge score was low. In Jalna district of Maharashtra, training need was reported to be 'most important' and 'not important' for 33 and 38% with respect to goat breeding management [12].

Table 2: Breeding Knowledge score of goat farmers in different agro-climatic zones of Punjab

Agro-climatic zone	Breeding Knowledge score (Mean \pm S.E.)	Breeding Knowledge level
Submountain Undulating (n=40)	7.50 ^{bcd} \pm 0.81	Medium
Undulating plain (n=40)	5.65 ^d \pm 0.76	Low
Central plain (n=40)	8.35 ^{bc} \pm 0.80	Medium
Western plain (n=40)	9.18 ^{ab} \pm 0.95	Medium
Western (n=40)	11.03 ^a \pm 0.98	Medium
Flood plain (n=40)	6.20 ^{cd} \pm 0.42	Low
Over all (n=240)	7.98 \pm 0.35	Medium

(values with different superscript differ significantly at $P < 0.05$)

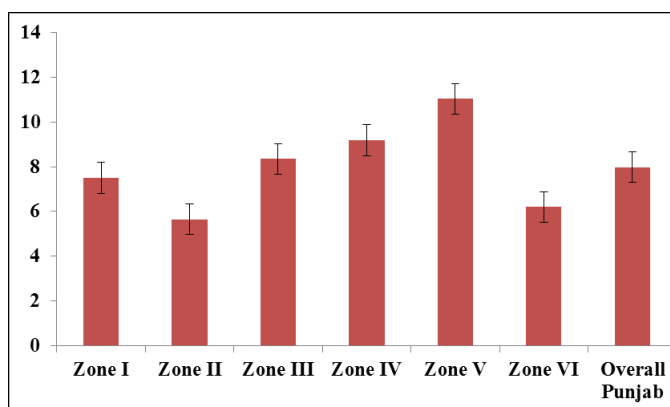


Fig 2: Breeding Knowledge score (Mean \pm S.E.) of goat farmers in different agro-climatic zones of Punjab

Conclusions: It can be concluded from foregoing that awareness appraisal of goat farmers about breeding practices in Punjab was not up to mark (only 38.02%). This highlighted pivotal need of educating goat farmers about correct breeding

practices. Also, in different agro-climatic zones of Punjab, breeding knowledge scores of goat farmers were significantly different ($P < 0.05$). So, the knowledge level of goat farmers of particular area/zone must be assessed first before organizing knowledge enrichment programme about breeding practices.

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