



Factors Affecting Productive and Reproductive Traits of Indigenous Goats in Nepal

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ABSTRACT

It is important to understand the scientific basis of raising goats to improve production and productivity of goats. This is a review article to document available literature on the effects of non-genetic factors on productive and reproductive traits of indigenous goats in Nepal. The review included journal articles, published reports, technical bulletins, conference proceedings, post-graduate and doctoral dissertations. The study revealed that altitude, season of conception, season of kidding, number of kid at birth, parity, size of doe are the major factors affecting productive and reproductive traits of indigenous goats of Nepal. These factors should be carefully considered to promote the indigenous goat production in commercial scale farming.

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INTRODUCTION

Goat is recognized as an important livestock species for poverty reduction, livelihood and food & nutritional security for smallholder farmers in Nepal. Due to the requirement of low initial investment, high prolificacy and high value of meat, goat farming is gaining popularity in Nepal. Recently, goats constitute the highest population among the total livestock population. Though it seems to be a growing business, there has not been major uptake of commercial goat farming in Nepal. NARDF (2004) reported that absence of proper breeding plans, feeding strategies, inbreeding and poor hygiene are the widespread problems in goat farming in Nepal. Similarly, weak extension service, and lack of awareness about the optimum farming techniques, becomes a hindrance to goat farmers for commercial goat farming.

METHODOLOGY

Necessary information was gleaned through journal articles, published reports, technical bulletins, conference proceedings, post-graduate and doctoral dissertations and reliable information on the factors affecting the productive and reproductive traits of goats were collected. Relevant information was arranged systematically. Findings are summarized in tables, briefed in texts with a conclusive outline of the non-genetic factors affecting the productive and reproductive traits of indigenous goats of Nepal.

RESULTS

The reproductive traits of goats are found to be affected by breed, location, season of conception, season of kidding, dam's birth type, parity, age of kidding and health care and nutrition. However, the significant factors that affect the reproductive traits are shown by grey/black color in figure (1). Upper altitude, summer conception, single birth type and goats in third parity attain earlier sexual maturity, conception, kidding, kidding interval and post-partum estrus. Similarly, the production trait of indigenous goats of Nepal is affected by breed, location, season of conception, season of kidding, feed intake, parity, sex, birth type and size of dam. While the trait that significantly affects the production trait is shown in figure (2) by grey/black color. Summer/rainy season conceived does, goats of third to fifth parity, goats born from large-sized does and males have higher weight gain and better productive performance.

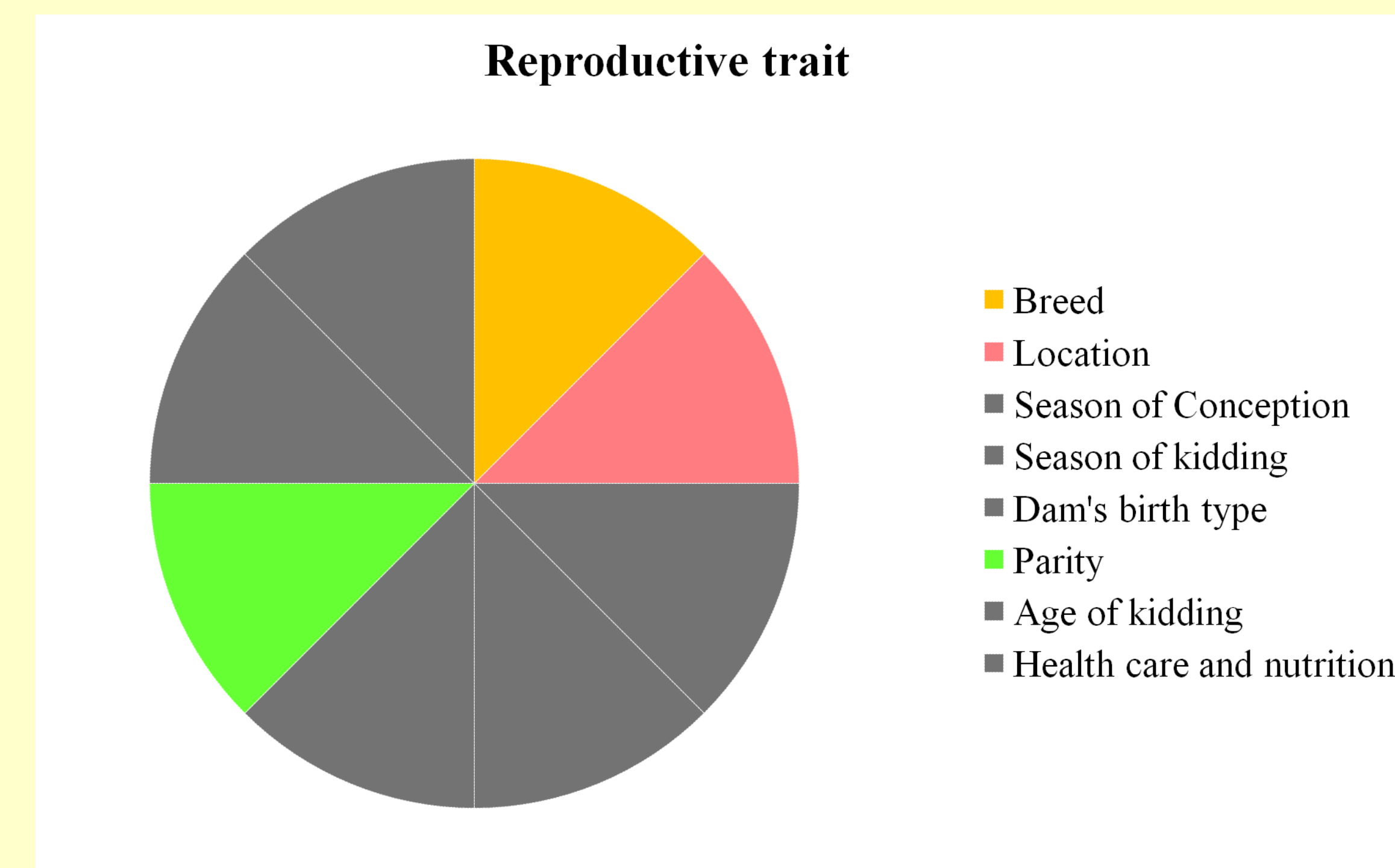


Figure (1): Factors affecting reproductive trait of indigenous goat of Nepal

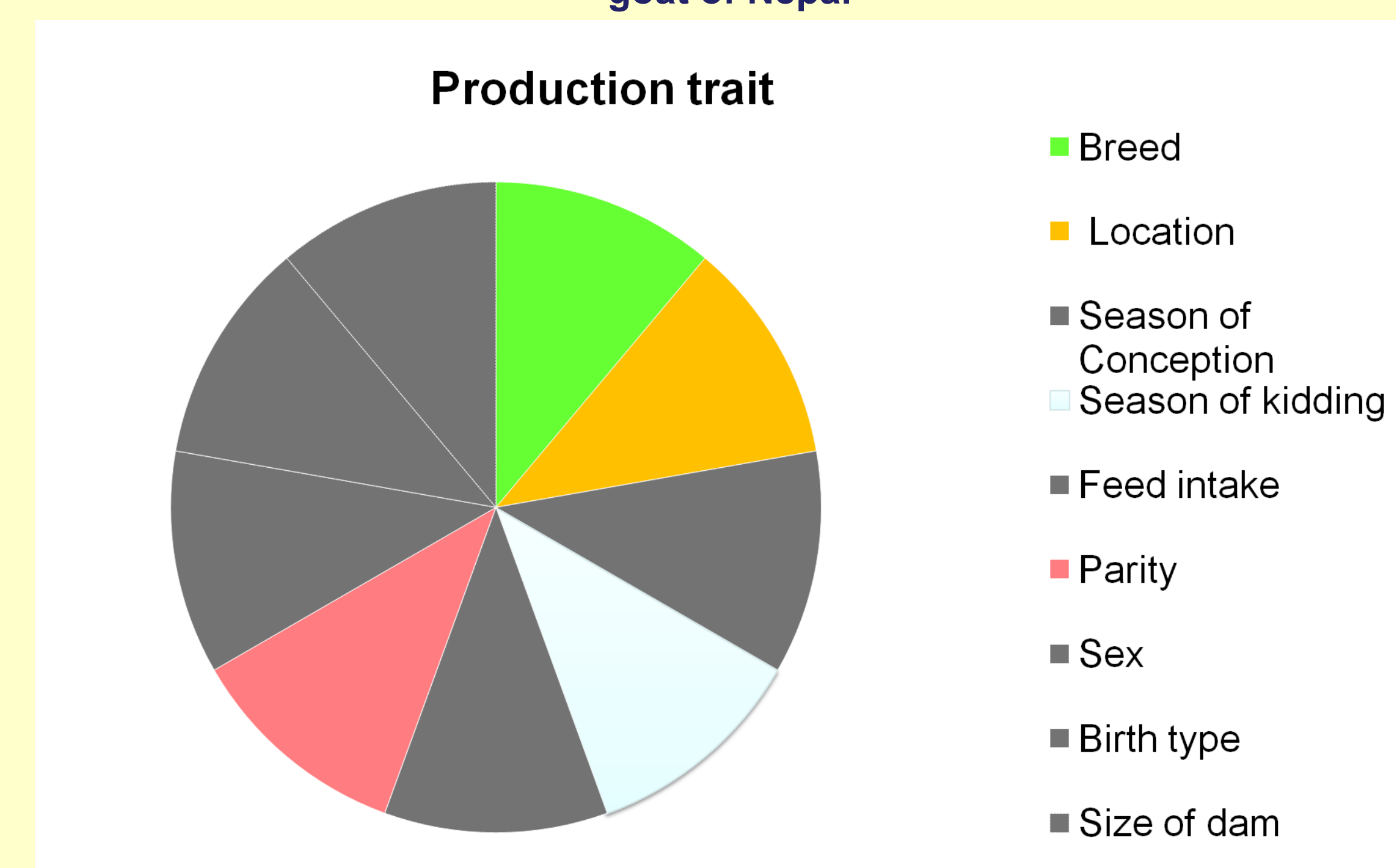


Figure (2): Factors affecting production trait of indigenous goat of Nepal

DISCUSSION

Does born from dams conceived during summer attain earlier sexual maturity and first kidding than those conceived in winter and days because the does conceived during summer season get relatively abundant nutritious fodder and forage which leads to the faster and proper growth of the fetus. Multiple born kids struggle for food and survive under stress conditions since the mother has to share the food among many kids, while the single born kids get proper nourishment which helps for earlier maturation of reproductive organs. Shrestha *et al.* (2012) reported that lower the age at first kidding and kidding interval, the better is the life-time production of the goats. Studies show that kids born from the dams conceived during summer season were heavier than those compared to kids born from dams conceived during winter season.

Higher weight of summer season conceived kids is because of abundant availability of better nutrition to the doe during autumn, winter or spring season. Proper feed intake is essential to maintain a sound growth performance. The higher weight of males is attributed by the male sex hormone secreted from gonads which has anabolic effect. Besides the effect of male sex hormone, the aggressiveness nature of male during suckling and feeding is a reason for higher weight of males. Single born kids showed higher weight gain than those born as twins or triplet. Study shows that competition among kids for space and nutrition and limitation of uterine environment for multiple born kids may be the reason for the higher weight gain in kids born as single. The kids born from large does have higher gain during pre-weaning period and weaning to nine-month period compared to kids born from medium and small does. It is due to the nutritional status of the does which in most cases is reflected by the size of doe.

CONCLUSIONS

The reproductive as well as productive traits are affected by several factors including breed, season of conception, season of kidding, age, sex and health and nutritional status of individual. However, altitude and season of kidding were found to have non-uniform effects on production traits of goats. Similarly, the effect of location on the gestation length of indigenous goats was found non-uniform. Therefore, detailed study needs to be carried out for assessing the effect of altitude and season of kidding on productive traits and effect of location on gestation length of goats.

REFERENCES

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