

Puberty in Goats

UNP-108

Introduction

The reproductive activities of goats begin with the onset of puberty. Puberty is when the doelings exhibit the first estrus followed by ovulation. For bucklings, puberty is achieved when spermatozooids are found in the ejaculate capable of producing a pregnancy.

The Onset of Puberty

This process generally occurs when bucklings and doelings reach 60-70 lbs or 30-50 percent of adult body weight. Depending on the breed, the onset of puberty occurs 3-7 months of age. Puberty in both bucklings and doelings is controlled by sexual hormones: testosterone in the bucklings and estrogen in doelings. These hormones cause physiological and behavioral changes in both sexes leading up to puberty. Environmental factors such as nutrition and season affect the onset of puberty. Precocity is a term used to describe an animal that exhibits early puberty or achieves puberty in an earlier age as compared to the average of the breed.

The ovaries are essentially inactive from birth until puberty. Because of hormonal support from the hypothalamus and anterior pituitary gland is insufficient. The ovaries become active as the hypothalamus and anterior pituitary gland begin to produce stimulatory hormones such as the gonadotropin-releasing hormone (GNRH), the follicle-stimulating hormone (FSH), and the luteinizing hormone (LH).

Photoperiod, an environmental factor, also greatly affects the onset of puberty of does. In does, puberty and estrus cyclicity in general depend on photoperiodic changes. The onset of puberty typically occurs during the short days of autumn. Spring-born animals are exposed to long days and achieve puberty during the short days of autumn in the same year. In contrast the October-born animals are exposed to

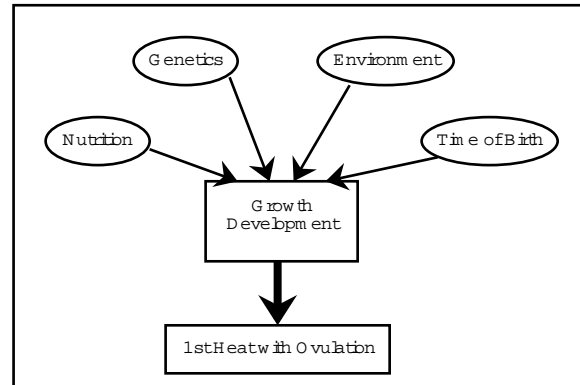


Figure 1: Factors Affecting Doe Puberty

decreasing days to reach puberty during the winter of the following year. However, puberty in doelings can be manipulated through management techniques such as permanent exposure to the buck, enhanced nutrition, and breeding management practices.

In male goats puberty contrast, puberty, which involves testicular growth and spermatogenesis (spermatozoa production) in male goats, does not appear to depend on photoperiodic changes. Bucks attain puberty either during the long or short days. The season of birth also does not appear to significantly affect the onset of puberty in bucks.

Breeding During Puberty

Once puberty is reached, it is best to breed a doe when she reaches approximately 70 percent of her mature body weight depending on the breed. A sexually mature and healthy doe with adequate size can be bred, carry out a pregnancy, and deliver a kid without affecting her growth potential. If a doe becomes pregnant before achieving 70 percent of her estimated mature body weight, growth and development may be suppressed. In addition, she could suffer abortion, increased interval post-partum, and encounter rebreeding problems.



Figure 2: Doe in Puberty



Figure 4: Buck in Puberty

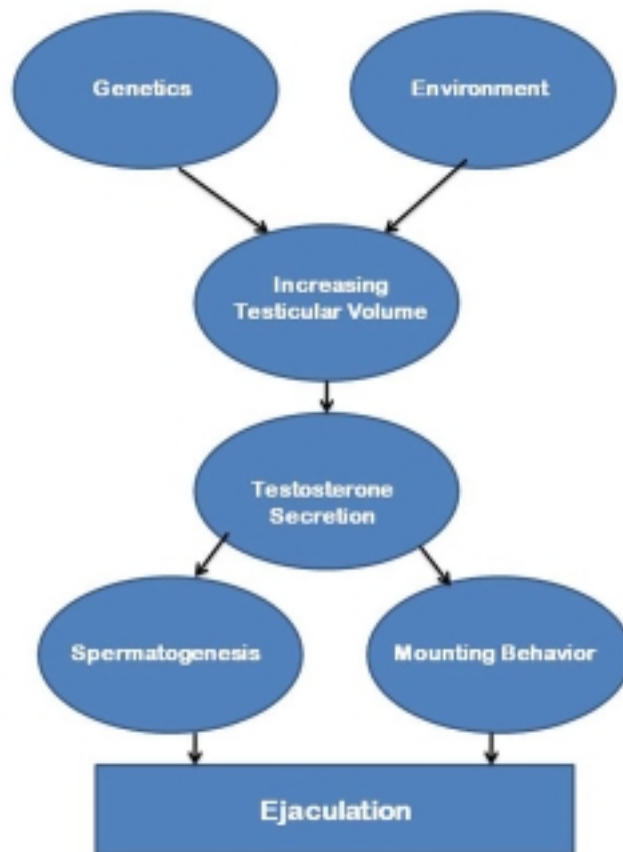


Figure 3: Factors Affecting Buckling Puberty

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