

## **Female Puberty and maturity**

**Puberty:** is defined as the age when the female or male gonads become able of releasing gametes, oocytes or spermatozoa , in the female is associated with estrus and ovulation.

Animals that have reached puberty are called pubertal, and the puberty in the female is not sudden event but it is the result of gradual process of maturation of endocrine and reproductive system and associated with proper body weight.

**Note:** the releasing of female or male gametes not mean the female becomes capable of conceiving which acquired this capability later. When female becomes capable to conceive it is called mature and the case is called **maturity**. maturity in female is related to the body weight or condition more than the age.

During the prepubertal period the growth of the genital organs is very similar to that of other system organs, but when the female reaches puberty the genital organs increase in size, and their growth rate is accelerated. Females of domestic species reach the age of puberty at the following times:

- mare: 1–2 years
- cow: 7–18 months
- ewe: 6–15 months
- doe: 4–8 months
- bitch: 6–20 months
- queen cat: 7–12 months

The sheep has been used extensively for studying many of the mechanisms involved in the initiation of puberty. The changes that occur at puberty depend directly upon the activity of the ovaries; The hormone that is primarily responsible for the onset of ovarian activity, and hence puberty, is luteinizing hormone (LH). it must be stressed that seasonality will exert an overriding influence in this species.

### **External factors influencing the time of onset of puberty**

the time of onset of puberty is determined by the individual's genotype with smaller breeds of animal tending to be more precocious. However, this inherent timing is influenced by a number of external factors.

**Nutrition.** There is good evidence that in most domestic species, the age of puberty is closely related to body weight therefore, animals that are

well fed with good growth rates reach puberty before those that are poorly fed with slow growth rates.

***Season of the year.*** In those species which are seasonal breeders, such as the ewe, mare and queen cat, the age at which puberty occurs will be influenced by the effect of season of the year. For instance, a filly born early in the year, i.e. January or February, may have her first estrus in the May or June of the following year, i.e. when she is 16 or 17 months old. A filly foal born late in the year, July or August, may not have her first estrus until she is 21 or 22 months old.

The same is true of ewes which, depending upon the time of year at which they are born, may reach puberty as early as 6 months or as late as 18 months old.

***Proximity of the male.*** Studies in sheep and pigs have shown that exposure to the male of the species will advance the timing of the onset of puberty. This is probably mediated by pheromonal and other sensory cues influencing hypothalamic GnRH secretion.

***Disease.*** Any disease which can influence the growth rate, either directly or because of interference with feeding and utilization of nutrients, will delay the onset of puberty.