

Sexual Hormone Fluctuation in Chinchillas

Simone Celiberti, DVM^a, Alessia Gloria, DVM, PhD^{b,*},
Alberto Contri, DVM, PhD^b, Augusto Carluccio, DVM, PhD^b,
Tanja Peric, DScA^c, Alessandro Melillo, DVM^a,
Domenico Robbe, DVM, PhD^b

KEYWORDS

• Chinchillas • Hormones • Reproductive physiology • Estrus cycle

KEY POINTS

- The reproductive physiology of the chinchilla (*Chinchilla laniger*) is still subject to various studies because of the discordance of the data obtained from early work.
- The vaginal smear test is an indispensable aid in the monitoring of the various phases of the estrus cycle.
- Colpocytology has also been shown to be useful to determine the interestrus period during the spring.
- The chinchilla does not manifest an activity of a seasonal type but presents a continuous cycle where the diestrus phase varies.

INTRODUCTION

The reproductive physiology of the chinchilla (*Chinchilla laniger*) is subject to various studies because of the discordance of the data obtained from early work.¹ Its small size and the difficulty in carrying out repeated blood samples over prolonged periods have forced various authors to rely on alternative techniques to monitor the endocrine axis, giving important results but often in contrast with each other. Among these, the analysis of fecal progesterone has been used the most and has allowed a better understanding of the cyclical activity of this new animal.

This knowledge of this data could assist in the intensive breeding of this species and any eventual project for the conservation of chinchillas in the wild.

^a OMNIAVET Veterinary Clinic, p.zza Omiccioli 5, Roma, Italy; ^b Department of Veterinary Clinical Sciences, University of Teramo, Viale Crispi 212, 64100 Teramo, Italy; ^c Department of Food Sciences, University of Udine, Udine, Italy

* Corresponding author.

E-mail address: gloriaalessia@libero.it

REPRODUCTIVE PHYSIOLOGY OF THE CHINCHILLA

Sexual Maturity

The female chinchilla manifests puberty after having reached its final adult weight, occurring around 240 days²; the male chinchilla acquires the capability to fecundate toward the eighth month. For reproduction purposes, it is better to use animals that have reached at least 1.5 years of age.³ However, literature on the subject does not agree on when sexual maturity occurs in the female chinchilla; the accepted range varies from 8 weeks to 540 days.⁴⁻⁹

The Estrous Cycle

A fundamental characteristic of these hystricomorph rodents (chinchilla and guinea pig) that differentiates it considerably from myomorph rodents (rat and mouse) is the remarkable length of its estrous cycle. The adult female chinchilla develops a cyclic activity of the seasonal polyestrous positive photoperiod type,^{10,11} even if in breeding continuous polyestrous-type cyclic activity can more frequently be observed.¹²⁻¹⁵ In fact, in breeding conditions, births are frequently all year round. The estrous cycle lasts between 20 and 60 days,¹⁶ with an average reproductive period of 35 days.¹⁰ Ovulation occurs in a spontaneous manner coinciding with the estrus.² Sometimes the female chinchilla presents a "silent estrus," or rather, not accompanied by the opening of the vaginal slit, in particular during the unfavorable months of mating.³ At the author's latitude (41°-54°N-12°-27°E), the mating season usually begins in January or February, although it is possible to observe female chinchillas in estrus during the latter half of October. The mating activity tends to decrease during the summer months, especially in July and August, when the fewest episodes are recorded. In wild chinchillas, which live in the southern hemisphere with seasons that are inverted with respect to the author's, 2 mating periods can be observed, midwinter (June to August) and mid-summer (December to February). These mating periods permit the maximum number of births during the less harsh seasons (spring to autumn). In particular, in the wild, the greatest number of deliveries is observed in spring (October to November); the less frequent deliveries are in autumn.³

The estrus of the chinchilla lasts between 12 and 48 hours and during this time the female chinchilla may accept the male chinchilla.² The most typical manifestation of the female chinchilla in estrus is the opening of the vaginal slit (**Fig. 1**), along with the discharge of a stringy, limpid, mucus secretion (**Fig. 2**), unaccompanied by any external genital edema.¹⁷⁻²⁰



Fig. 1. The female chinchilla in estrus.

Download English Version:

<https://daneshyari.com/en/article/2412984>

Download Persian Version:

<https://daneshyari.com/article/2412984>

[Daneshyari.com](https://daneshyari.com)