

# Reproduction Management and Artificial Insemination in Dromedary Camel

Sustainable Agriculture Reviews 54 pp 55-106 | Cite as

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Chapter

First Online: 30 September 2021

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Part of the [Sustainable Agriculture Reviews](#) book series (SARV, volume 54)

## Abstract

The dromedary camel is a unique multipurpose species under extreme arid conditions. It is used for production, leisure, transport and agricultural work. Its profile as a production animal has given it major importance in ensuring the sustainability of marginalized communities in the poorest regions of the world, but also because of the nutritional and therapeutic properties of its milk and meat. Nowadays, the exploitation of this animal resource known an orientation towards intensification under the pretext of the expanding demand on camel products. The productivity of camel herds is conditioned by its reproductive potential. Often, camel herd performances are limited by low fertility rate, high inter-calving intervals, late puberty leading to low longevity, low milk production and unavailability of young calves for herd renew and fattening farms. To reach an optimal level of camel herd's numerical productivity and therefore accelerate the genetic progress, it is imperative to reduce the duration of the unproductive periods, namely the waiting period and the reproduction period. This involves through the choice of a suitable farming system, improving breeding practices, improving data recording and reproductive monitoring, application of strategic reproduction control and new reproduction techniques.

Here we review strategies of camel herd reproduction management and means to improve camel herd reproductive performances using sexual activity control in males and females and artificial insemination practice. Controlling ovarian cycles of the female camel consists of controlling follicular growth and timing of ovulation. Therefore, this technique can be used to induce and synchronize the ovarian function during a favorable reproduction period or even during the non reproductive season.

Zootechnical means do not really make possible to synchronize the ovarian cycle in camels. They are used as complementary tools to the pharmacological methods. The different hormonal based protocols are: melatonin, progesterone, prostaglandin F2 $\alpha$  and GnRH. Artificial insemination in dromedary camel is a topic of contemporary research that tends to develop standard sperm collection protocols, monitoring of sperm quality, short-term preservation, cryopreservation and semen thaw with considerable interest to increase the pregnancy rate and therefore to market this technology in camels for large-scale use. Various genetic, sanitary and economic advantages could be insured by this biotechnology and overcome many problems in regard with camel fertility efficiency such as short breeding season, long gestation period, traditional reproductive management and widespread of genital and venereal infectious diseases.

## Keywords

Artificial insemination   Oestrus synchronization   Dromedary camel   Camel bull  
Breeding   Reproduction performance   Sperm   Follicular cycle   Female camel  
Calving interval

## Abbreviations

°C

*degrees Celsius*

AF

*annual herd fertility*

AI

*Artificial insemination*

AV

*artificial vagina*

BLUP

*Best Linear Unbiased Prediction*

CASA

*Computer Assisted Sperm Analysis*

CFM

*Calving to first mating interval*