



# Cattle Producer's Library

## The Biological Cycle of the Beef Cow

*Revised by*

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In a broad sense, it starts with fertilization and ends with the weaning of a calf. In the latter case, the beef cow's reproductive cycle overlaps in a chronological year. This is the perspective of the reproductive cycle that will be discussed in this publication.

Successful beef cattle production depends on proper management of the biological cycle to attain stable production. To enhance production stability, we must understand and appreciate the needs of the cow as she progresses through her biological cycle. Feed resources produced on the ranch and/or farm should be managed to most economically meet the cow's biological needs.

The biological cycle of the beef cow is constant and rather well-defined. Duration of pregnancy is approximately 282 days with variation between breeds and individual cows within breeds. The biological cycle can be divided into four definite periods and one variable period:

Period	Duration in days
First trimester of gestation	94
Second trimester of gestation	94
Third trimester of gestation	94
Postpartum period (rebreeding)	<u>83</u> 365
Pre-weaning period	(variable)

The first trimester begins on the day the cow is serviced and conceives. The biological cycle remains constant but the chronological cycle will vary according

to the date the cow is bred. The accompanying "beef cow biological-chronological wheel" will show how the biological cycle and the chronological cycle coincide. For example, the biological and chronological cycle of a cow bred June 1 would be:

Biological cycle	Chronological cycle
Day 1	June 1 — bred and conceived
Day 94	Sept. 3 — end of first trimester
Day 188	Dec. 6 — end of second trimester
Day 282	March 10 — end of third trimester (birth of calf)
Day 365	May 31 — end of postpartum period and beginning of next gestation
Day 488*	Oct. 1 — calves weaned**

If a cow conceived on June 23, the biological cycle would remain constant but the chronological cycle would vary. This is seen as you adjust the "beef cow biological-chronological wheel."

The biological cycle and the chronological cycle are important to the producer of beef cattle. Factors affecting the various biological periods will be explored more in other parts of the Cattle Producer's Library (see CL308, 331, 402). However, these few points are presented for consideration now:

### Points to Ponder

1. If a cow is to conceive and calve every 365 days, she must do so within the time frame of the biological cycle.

<sup>1</sup>Original authors were C. O. Schoonover and David Yates, retired and former University of Wyoming specialists, respectively.

\*A calf born March 10 would be 205 days old October 1.

\*\*Weaning dates will vary as will calf age at weaning.

2. Management strategies should complement the various periods within the biological cycle.
3. Management determines the chronological cycle by selecting the calving season and thus the breeding date.
4. Since not all cows are bred the same day, the chronological cycle will vary for cows within the same herd.
5. The shorter the breeding season, the more efficient management strategies will be for all cows.
6. Since beef cows mother calves until weaning, the biological cycle overlaps the chronological cycle.



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