

Intensive dairy farming

Traditional breeds such as Jerseys or British Friesians produce from 4000 - 7000 litres per animal per year. Over the past forty years, cows have been selectively bred to provide as much milk as possible, these Holstein Friesians produce from 7000 to 13,000 litres depending on how intensively farmed they are. The natural lifespan of a cow is 15 – 20 years, but now most dairy cows are culled at around six due to their high stress lives.

“Given a natural healthy life, cows can live for twenty years or more. High-yielding dairy cows will last for only around a quarter of that time. They are usually culled after three lactations because of health problems such as infertility, mastitis or chronic lameness.”

Summary

A dairy cow doesn't produce milk until she has a calf. She is about two years old when she has her first calf. Dairy farmers aim for cows to have a new calf every 12 to 15 months to restart the cycle of milk production. The bull calves produced will be sold on for veal or bull beef, while the females will be kept as replacements or sold to other dairy farmers.



Learning Activities

Research and discuss two methods for increasing milk production on a farm. List the advantages and disadvantages. Prepare a fact sheet for a prospective client. Research the reasons why modern farming means that dairy cows have a much shorter life span than normal.

Explore the different type of production methods that are used in dairy farming ranging from organic to highly intensive zero grazing.

As world population and costs increase the only answer is to intensify our dairy production to meet demand. Research the idea that modern dairy farming is just 'factory farming' and decide what you think is the best way to meet growing demand for dairy products..



Web Resources

<http://www.askaboutireland.ie/reading-room/life-society/farming/farming-in-ireland-overvi/dairy-farming/>

<http://www.milkproduction.com/Library/Scientific-articles/Reproduction/Basics-of-reproductive-function>

http://www.sites.ext.vt.edu/virtualfarm/dairy/dairy_lifecycle.html

http://www.ciwf.org.uk/cows_belong_in_fields/about_intensive_dairy_farming.aspx

Source for both: http://www.aps.uoguelph.ca/~gking/Ag_2350/dairy1.htm



GCSE

FACT FILE

Agriculture and Land Use
Lactation Curve

For first teaching from September 2013

For first award in Summer 2015



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Learning Outcomes

Students should be able to:

- Describe the main features of a lactation curve

Key Terms

Lactation – Secretion of milk by the mammary glands

Lactation curve – a graph to show the individual cow's milk production, normally plot yield against time

Peak yield – Peak yield is the point where the cow reaches the highest milk production level during the entire lactation.

Remating – getting the mother pregnant

Gestation – the time from fertilisation to birth,
Replacements – Heifer calves are kept within the herd to replace outgoing cows

Heifer – young female cow that has not borne a calf

Typical lactation curve

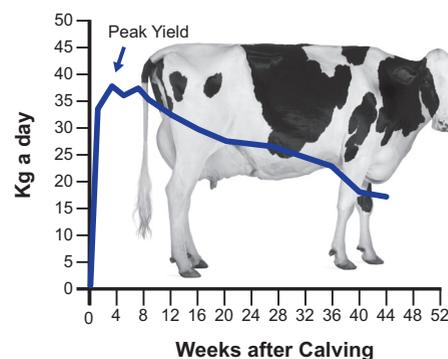


Photo in graph: iStock / Thinkstock.com

To illustrate an individual cow's milk production, we normally plot the yields against time to get a lactation curve. Milk yield will rise during the first months after calving, followed by a long period of continuous decline.

The shape of the lactation curve will differ for each individual and also the breed of the animal.

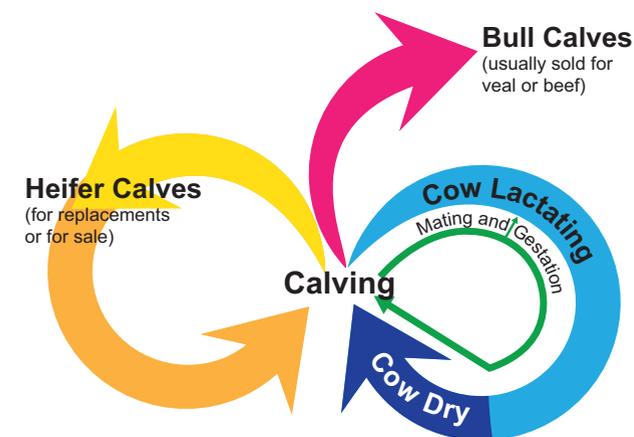
Feeding and management will also influence the shape and have a significant impact on the total amount of milk produced.

The lactation period is ideally 305 days, but in practice it is usually more, followed by a two-month dry period prior to the next calving.

Peak yield is the point where the cow reaches the highest milk production level during the entire lactation.

Normally the peak is reached four to ten weeks after calving. The time taken to reach peak yield varies with many factors, for example breed and nutrition. Higher producing animals tend to peak later than low producing ones.

The lifecycle of a modern dairy cow



The main goal of any dairy herd is to produce milk as conveniently and economically as possible. Since the bovine gestation period is nine months long and cows require a postpartum (after birth) recovery period of several months before initiating another pregnancy, it is convenient to plan around a yearly calving interval. Ideally, cows would lactate for about ten months followed by a two month dry period, as illustrated in the accompanying figure. They should be remated successfully during the first third of lactation, progress through another gestation and calve again to initiate another lactation.

However, even with reasonable management, a substantial number of animals fail to conceive as anticipated so calving intervals exceed twelve months. Failure to achieve a twelve month calving interval is not disastrous since almost all improved dairy cows produce reasonable quantities of milk for longer than ten months. Thus, although daily yields are considerably below peak amounts, they still return something over feed and maintenance costs. The actual calving interval for most herds with reasonable standards of management will usually range between 12.5 and 15 months. Once the interval extends beyond this duration, it may not be economical for the farmer to remate the animal. With longer calving intervals the average milk and offspring production per day of herd life is lower.