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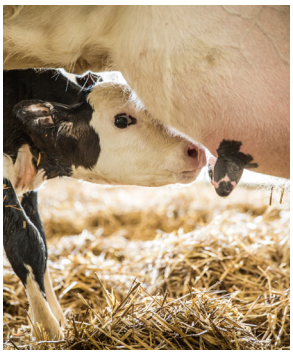
Lighting in Dairy Barns

FactSheet

Field Services




Light is one of the cheapest feed ingredients you can offer dairy cows.

Even when the days are noticeably longer in the spring and summer months, there is still scope to increase the intensity and hours of lighting in a dairy barn and see a positive response from it.

The CowSignals team advises 16 – 18 hours of light at 200 lux each day, with the remainder of the day at less than 50 lux. 50 lux is comparable to what you have with a full moon on a clear night. The cow recognizes this as night.

What is the importance of light in the barn?

Having enough light enables better observation of cow signals and allows you to detect signs of heat, lameness, blood and discharge. More light makes you feel happier too! So, turn on the light to see more.

Cows like daylight, and more light leads to more feed intake. With more light, cows show better heat signs. They are more active and therefore easier to detect. Some producers have a timer on the lights that turns on the lights in the barn half an hour before they arrive in the morning. Cows are then in their normal daily activity by the time the producer arrives, making it easier to observe cows for any signs of heat.

Some producers turn on the lights for 24 hours per day, but this is a waste of money. Supplying 24-hour light may lead to a little more feed intake, but a lot less fertility. Cows need the change from day to night to let the eggs grow and release from the ovaries. Sixteen hours of light per day gives the optimum feed intake and still a good day-night rhythm for maximum fertility.

Dry cow signals

Lactating cows need a lot of light, whereas dry cows require more darkness. In their natural environment, cows used to calve in the spring after a dark winter which had a positive effect on feed intake while grazing. Modern barns change the seasons for the cows by adjusting the light periods to imitate long summers and short winters. Dry cows are best off in winter according to light. This maximizes the 'light-shower' effect after calving. They can be kept in a dark building or dark corner for 6-8 weeks. The lights should only be turned on for this group during daily inspection and bedding. It is preferable to keep the pre-calving cows close to the lactating herd for the last 2-3 weeks before calving for ease of feeding and stress prevention. Therefore, it may be simplest to keep this group next to the herd in an area with a separate light switch.

Practical light program

A light program with a timer and a sensor is the most practical way to regulate light periods. For example: Timer on at 5:00 am, sensor to switch it off when 200 lux is reached with daylight, sensor to turn it on when light intensity drops under 200 lux, timer to turn it off around 10:00 pm.

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A little light at night does not harm the cows and is good for the farmer, so you can easily leave one light on at night. Or, in robot milking barns, leave one light on in the robot. Cows don't need light to find the food or the robot, but a little light won't harm them either.

What light do you prefer? White or yellow?

Colour of light is not as important as having enough intensity. It has been said that cows are quieter with yellow or orange light. A disadvantage of yellow light is that urine, blood, discharge and milk all appear similar in colour. For this reason, at least some white light in the calving area is preferred.

Milk parlour

It is important to provide good light in the work place. Lighting in office buildings typically provides more than 400 lux. In a well-lit milking parlour it will be easier to see various issues affecting cow behaviour, udders and teat ends, claw dirtiness, walking, standing, tap-dancing, and position of claws.

Where should the lights be placed?

Check the cows' behaviour. Cows don't like to go into a dark hole or corner. Provide light in and around feeders, the feed bunk, drinkers and the exit lane of the parlour. Cows don't like the reflection of light on metal plates, wet floors, food baths etc. Check for these issues if cows don't like to come into the parlour. They can also be scared of sudden changes or things that are on the floor that were not there previously. Light has to be everywhere in the barn.

How many lights do you need?

Per 100 cows you can choose:
50 fluorescent tubes = 150 lux through 1 tube per 2 cows
70 fluorescent tubes = 200 lux
12 metal halide lights= 200 lux
16 sodium lights (orange/yellow light) = 200 lux
The cheapest advice is turn on the lights, and clean the light tubes twice in the winter.

Lux meters are inexpensive and very useful to convince you to put more light tubes in your buildings.

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