

## Why is a managed lighting programme important?

- Dairy cattle on managed lighting programmes produce 5-16% more milk
- An 8% response is typical
- The cows will eat more to compensate for the extra yield
- There is evidence that oestrus activity is also improved
- Cows rest better and for longer periods
- There is no benefit with dry cows or transition cows
- It takes about 1 month to see an effect

## Key Points

- By implementing a managed lighting program you are trying to re-create high summer all year around
- If you leave lights on all night for dairy cows, the cows 'revert to a winter setting'
- Both the light intensity and duration is important
- You will need a light meter (they cost around £30-£50 depending on spec)

## What's the difference between light and dark?

- The 'Light' period should be 16 hours/day, the 'Dark' period should be 8 hours
- The 'Light' period should be in excess of 162 Lux (Preferably >200 Lux)
- The 'Dark' period should be less than 54 Lux

## Implementing a managed lighting programme

The first step in implementing a managed lighting program for dairy cattle is to establish the light intensity and duration currently available in the buildings. Use a light meter and hold it at around 3ft off the ground in a number of areas around the building such as feed passages, cubicles, loafing areas.



The key to a successful program is to establish an even spread of light throughout the shed. Appropriate siting (height and distribution) of lights will be important. Many producers will find that cleaning or replacing bulbs, cleaning covers and repairing existing lights will go some way to improving the situation in some sheds. Other units will find the installation of extra lighting will be crucial to reach the target Lux levels.

*"A good rule of thumb when installing lights, is the distance apart, should roughly be equal to 1.5 times the mounting height"*

The light intensity needs to be measured at a number of times during the day. As the 16 hour 'light' period will normally run from the start of the morning milking until around 10.00pm. On dull days it may be that artificial lights need to be switched on to achieve this.

## Labour saving devices

Timers and light sensors are very useful 'labour saving' devices that can be built into the system. Relying on somebody popping up to the dairy at 10.00pm the 'turn the lights off' is unlikely to suffice. After installation, all systems should be re-tested with a light meter to ensure they are set-up correctly.

## What type of lighting is best?

Good responses have been observed with, fluorescent. Metal halide and high pressure sodium (HPS) lighting. The ultimate choice will really depend on the mounting height and environmental conditions within the building, together with the running costs.

One draw back with the high pressure sodium (HPS) lights is that many people find it difficult to see clearly with the yellow lighting it protracts, this could be an issue when trying to read freeze-brand numbers etc.



## How Dark should the Dark period be?

As far as the cows are concerned there is no major issue with the lights being turned off all together. They cannot really detect light at less than 50 Lux. Over time the cows adapt very well and their ability to perceive light will alter depending on the intensity of the light period relative to the dark period. You do not need to leave 'night lights' on for cows to find feed and water, and if you do this may interfere with the lighting programme. At least 6 hrs of 'dark' period is required, preferably 8 hours.

## What is the overall objective?

The aim is to provide an 'extended period of light', rather like high summer. To do this you need to provide cows with an 'intense' light period, and a 'dark' period. In the absence of a 'dark' period cows do not respond, so if producers leave lights on all the time (like many UK dairy farms), the cows default to a 'winter setting' and there is no milk yield advantage or feed intake response.