



DairyLight increases yields and boosts profits

DairyLight LED light system regulates the Circadian Rhythm and Melatonin Secretion through its unique light spectrum.

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DairyLight Proven Financial Benefits + Savings

(Results based on Alltech data from Courts Farm, Cheltenham)



+7.69%

Increased milk value
per cow per year



+1.9p

Average Increased Price
Per litre milk



£263

Impact on finances
per cow



-11.43%

Electric use per litre(kWh/litre)



-11.43%

Total feed use per litre



-7.69%

Carbon Emissions
Per litre

All round herd improvement using DairyLight



Production

- Typically achieves milk yield increases of between 8 – 11% with results independently verified by Alltech E-CO2
- Payback usually 4-7 months
- The first UK dairy lighting system providing the optimum spectrum of light scientifically proven to influence melatonin production in dairy cattle
- Bespoke installation design provided to ensure the required intensity of light is delivered
- Fully automated system to release manpower and minimise ongoing running costs

Breeding

- Improves cow fertility and shortens calving intervals
- Stronger and longer signs of heat and bulling

Wellbeing

- Summer-light conditions all year around benefits coats and general well-being
- Blue light has been shown to reduce fungal and bacterial load in the environment

What is DairyLight?



✓ DairyLight is:

A unique white, blue and red LED lighting system scientifically proven to enhance a cow's performance and general well-being all year round.

✗ DairyLight is not:

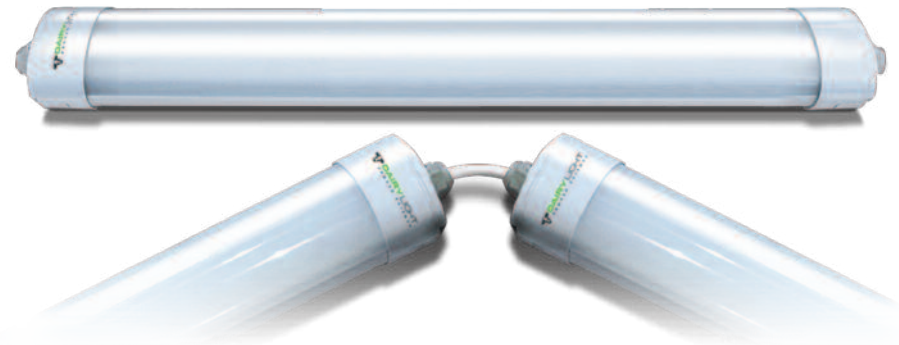
A standard off-the-shelf white LED light. Standard white LED lights do not provide enough blue 450 NM light to replicate summer sunshine and will not provide red light for night time supervision.



- DairyLight systems include blue, white and red LED lights with timer

- Control day and night light timing
- Switch from blue & white daylight to red night light
- Daylight control saves electricity

- Systems can be installed by a qualified electrician or we can install for you. Call for further information



Specific light can affect life's rhythms

Built-in Body Clocks

Research over the last decade has identified that specific light can affect and regulate the Circadian Rhythm and in turn Melatonin secretion and its effect on all mammals.

Often referred to as the "body clock," the Circadian Rhythm is the 24-hour cycle that tells our bodies when to sleep, rise, and eat - regulating many physiological processes.

Types of light

DairyLight delivers an optimized spectrum of light, at the right intensity to have a maximum effect on the Circadian Rhythm of the cow by regulating the secretion of Melatonin, also known as the sleep hormone.

Blue light within the short-wavelength blue light spectrum (465–485 nm) is the most effective at inhibiting Melatonin secretion, as Melanopsin production, its precursor is particularly sensitive to short wavelength, Blue Light.

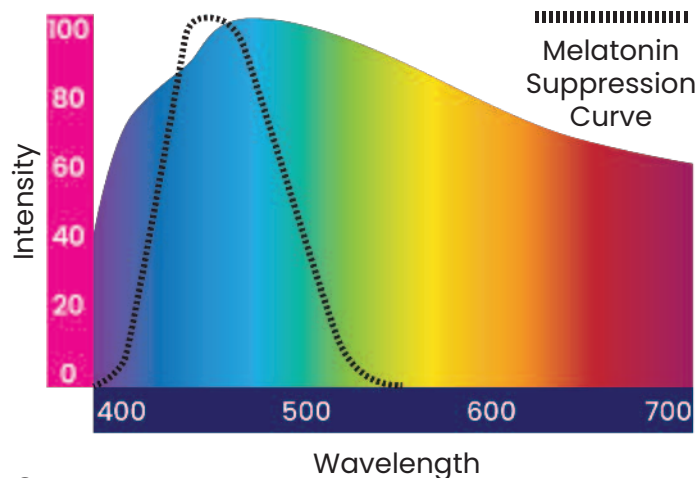
Normal white LED or fluorescent lights do not deliver blue light at the level of intensity required to have any real effect on Melatonin suppression.

Achieving Reaction Requires:

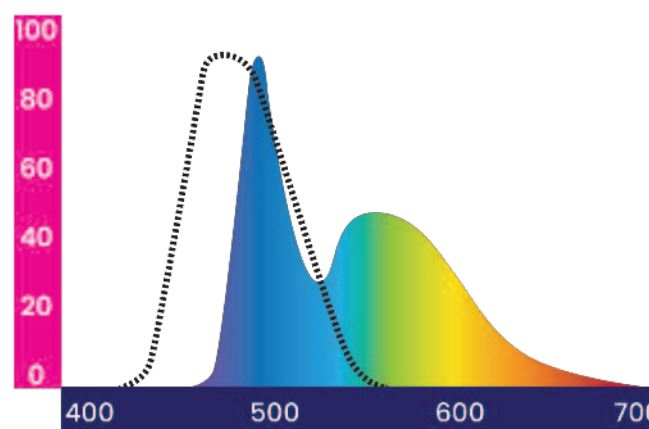
1. The right spectrum of light
2. The right intensity of light
3. The right circadian rhythm of light & dark

The system works by exposing the dairy cattle to a specific level and spectrum of light for 16 – 18 hours. When installed according to our bespoke design, this specific level and spectrum of light is delivered by our unique DairyLights. Melatonin production is suppressed during this time and cow activity and efficiency is optimised. This is followed by a period of darkness (or near darkness) for 6 – 8 hours, during which time melatonin production is stimulated and the cows rest and recover.

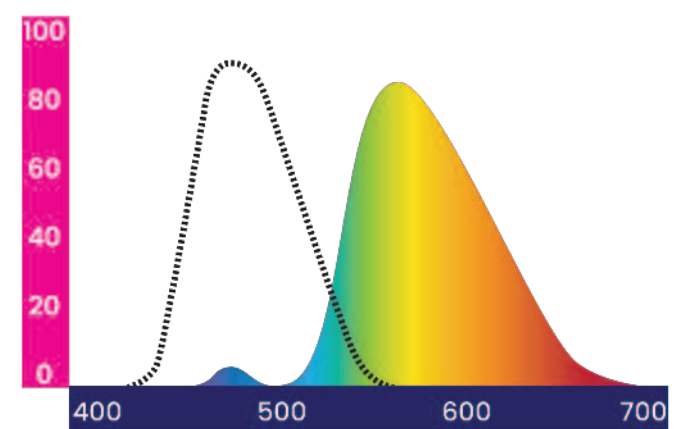
Summer Daylight Spectrum



DairyLight Spectrum



Normal White LED Spectrum



The Physiology Of Melatonin Control Using Specific Blue Light With Correct Lux And Duration

Light enters through the retina of the eye and suppresses the release of Melatonin from the pineal glands, thus allowing the resumption of hormones to be released from the hypothalamus of the brain.

Duration Of Light Exposure - The Natural Circadian Rhythm

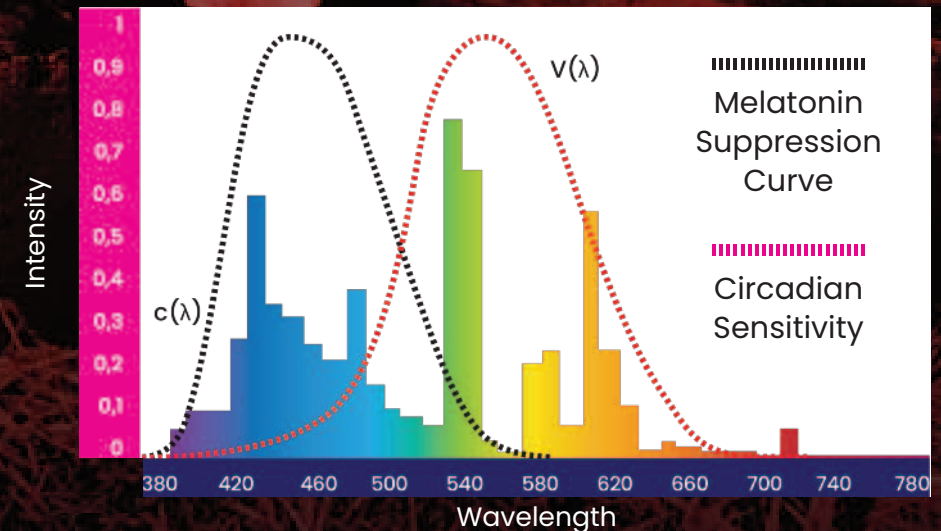
In the northern hemisphere the daylight hours vary greatly between the summer months and the winter. For example in December we have 8 hours of daylight and 16 hours of darkness while in June we have the reverse with 16 hours of daylight and 8 hours of darkness.

Red Light Function

Red light does not inhibit Melatonin secretion and hence the Circadian Rhythm. The controller automatically switches the DairyLight to red during the 'off' phase, and thus will allow sufficient observational light at night without interfering with Melatonin secretion. This is useful for checking calving cows and bulling.

Red Light Spectrum

The diagram below demonstrates that red Light does not affect the Circadian sensitivity and can be turned on at night for supervision and observation.



Proven Results



Results based on Alltech data from Courts Farm, Cheltenham.

Financial implication of adopting Post Installation Scenario	£53,195
Impact on finances per litre p/litre	1.9
Impact on finances per cow	£265
Impact on carbon per litre BFC 4%	-36

Milk	Pre Installation Average	Post Installation Average	Change %	Financial Implementation £
Average Milk Yield per cow per day	31.1	33.9	9.00%	230 * per cow
Milk Butterfat (%)	4.12	4.01	-2.67%	-

Replacement & Culling	Pre Installation Average	Post Installation Average	Change %	Financial Implementation £
Herd Culling Rate (%)	52	52	0%	-
Heifer First Calving age (months)	27	27	0%	-

Crops & Resource Use	Pre Installation Average	Post Installation Average	Change %	Financial Implementation £
Nitrogen Use per ha (kg N per ha)	105	105	0%	-
Diesel Use Per Cow (l per cow)	126	126	0%	-
Electric Use Per litre (kWh per l)	0.052	0.048	-7.69%	356 *per 1M litres

Feed	Pre Installation Average	Post Installation Average	Change %	Financial Implementation £
Total feed use per litre (kg concentrate equivalent/litre)	0.35	0.31	-11.43%	9,870 *per 1M litres
Carbon Performance (g CO2e per litre BFC 4%) 941	904	-3.93%	-	

Financial implication of adopting Installation' Scenario	Impact on finances per litre (p/litre)	Impact on finances per cow	Impact on carbon per litre BFC 4% 'Post
£53,195	1.9	£263	-36

DairyLight Step-by-Step Ordering Process:



1.

Call +44 (0) 1285 411 141
for more information or complete the
enquiry form at www.dairylight.co.uk/process



2.

We'll arrange a site visit
at your convenience to take all the
necessary measurements.



Note:

We don't need to visit your site if
your barn has recently been constructed
- simply email us your architect's plans.



3.

Plans will then be drawn up
based on the site visit (or supplied
architect's plans).



4.

Our software will calculate the
correct number of lights required to
produce 200 Lux intensity.



5.

We'll then send you a quote
based on the number of DairyLights
you will need.



Note:

If you require us to install the system we can
provide a cost for this too.



6.

Once your order is placed the system will be
delivered within 12-16 weeks.



Note:

Interest Free Payment options are available.
Please call for more details **+44 (0) 1285 411 141.**

Installations & Testimonials





"Having had our high yielders done for a couple of weeks I would say we are so far definitely seeing very strong and long lasting heats compared to before."

Initial perceptions regarding milk yields are that high yielders have already increased by around a couple of litres, but it is difficult to isolate the results from the middle yielders due to other changes going on."

David Irwin

Redhouse Holsteins, Armagh.
Herd 170, 13,500 litres.

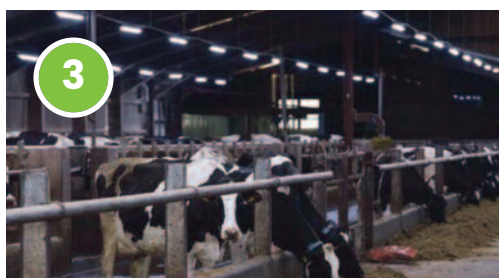


"We've seen a lift in yields over the past 2 years - a definite 10% increase. Normally, there's a drop in production in November, but we've seen an increase."

At first we were sceptical - we did half then decided to do the second half because of the results. Fertility has also been quite phenomenal - a big improvement."

Geoff Spence

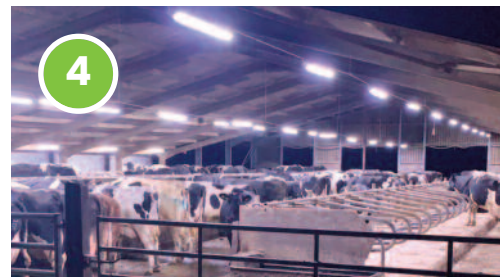
Miresdale Dairy, Northallerton
900 cows, 11,500 litres



"Yields up probably 1+ lt per cow. Intakes up and herd are generally keener to be up feeding in the morning."

Roger Mason

Heaves Farm, Cumbria.
Herd: 220.



"Apart from the great yield-response and benefits for the cows, we also had a great improvement in the working environment for the staff."

Richard Davenport

Top of the Town Farm, Cheshire.
Herd: 500, 9000 litres.

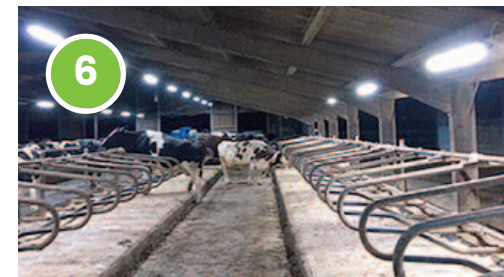


"The lights have gained us another 2lt per cow per day and the bullying activity has moved to a different level to that experienced before."

I would definitely install the lights again knowing the benefits that have brought us."

John Cartledge

Peaslows Farm, Buxton.
Herd: 230.



"Overall milk yield from July 2017 to the same month last year is up 6%. Another improvement in the herd this year so far is a noticeable difference in the strength and length of heats in the animals. Our fertility figures have been slowly improving each year, but this year the rate of improvement has been better than usual."

Chris Dorrington

The Old Rectory, Grantham.
Herd: 150, 9000 litres.



"9% yield increase, reduction in concentrate usage from 0.35 to 0.31kg/lt, improves margins by 1.9ppl for the year totalling £263 per cow."

Calvin Pugh

Court Farm,
Gloucestershire/Worcestershire.
Herd 200.

The Environment



Our green technology reduces electricity use and CO₂ emissions

DairyLight's advanced technology reduces the impact on the environment and still delivers a superior light. By using highly efficient LED-diodes we reduce the electrical usage and extend the working life with long-lasting high quality luminaires.

- We use highly efficient LED lamps that provide 130 lumens per watt – more light for less power.
- Light sensors can also be installed with the system that turns off the lights if the natural daylight exceeds 200 lux, which further saves power.
- Our high quality luminaires with an expected 50,000 hours life (L70 @ 40 deg. C) gives a longer life than standard luminaires.



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