

# Special editions published by **PIG PROGRESS**

## Sows

Background May 9, 2016 6634 views [45 comments](#) last update: May 13, 2016

## **Light (I): Seasonal infertility**

**This is the first of 4 pieces on light by pig farm advisor, John Gadd. In this article Gadd looks at the correct levels of light for sows; before, at and after breeding times.**

I first cut my teeth 45 years ago on the problem of light levels for breeding sows. Adequate light levels are very poorly understood, even today.

I usually follow up a visit with a quick phone call or note to ask whether things have improved, as you can learn so much from such advisory checks. What doesn't work is as important as what does. Fortunately, with regard to advice on the correct levels of light with which to provide sows before, at and after breeding times in particular, the positive responses have been plentiful, 1 comment even finding its way into the pig press:

*"Gadd called at our farm to investigate our returns problem. He wasn't in the operation 1 minute before he told us what we should be doing in our mating area, and it has helped us no end. He told us to light up our mating area using a timing clock and good lights so that it was as bright as daylight, but better... Since we did that we rarely get a return. He showed us how to measure light quickly and very cheaply and said that establishing a good period of darkness in the 24 hours could be just as important as the correct level of light during the day. The funny thing is that it has cost us so little, about \$ 200 to \$ 300." (Niel Managh. Australian Pork Journal).*

I mention this comment, not for self-aggrandisement, but because it summarises what I will advise in this and the following articles on light.

### **Too much or too little light?**

In my experience, it has nearly always been insufficient light at and around breeding influencing subsequent reproductive performance, and again in the farrowing house, where lighting is bright but still not bright enough, as this has a carryover effect on rebreeding. Sure, things are better now with these more modern buildings, but there are areas in the world where the breeding facilities are still woefully short of light; Eastern European countries especially where I find it very easy to obtain greater numbers born, shorter weaning-to-successful conception times resulting in fewer empty days/sow/year.

### **Autumn seasonal infertility and light**

This is about too much light for sows and gilts, now increasingly being kept outdoors, or as in North America, under cover with access to outside pens. I was over there several years ago when they were plagued with the autumnal variety with its peak in September (northern hemisphere) especially abortions and disappointing 'no-shows', and talked to several of their excellent pig specialist vets about it. The consensus was that too much bright light from early spring sunshine was affecting the light-receptor gland and disturbing the normal hormone re-breeding pattern. Drawing tarp shades over the outside runs on such days was tried and got results.

## Late winter seasonal infertility

To combat the 'feral factor', where even the modern sow has throwbacks to the past hidden in her genes (triggered by reducing daylight) to prevent her conceiving in autumn and have to raise a family in inclement winter weather, these outside runs were lit to at least 60 lux as soon as the reduced daylight commenced from July onwards.

I arrived back in the UK (where 35% of our breeding herds are outdoors) in a bright, clear spring and discussed the American results with our local vets. Some transatlantic phone calls were made, and on three farms with an autumn breeding problem, shaded areas were erected from four telegraph poles with Gale-breaker sheets fixed to the top and sunward side, and a little straw bedding and nuts provided underneath.

Result – a distinct improvement on two farms and not on the other. Moral 1 – for sows outside in spring, get shades up early and don't wait for summer [sunburn](#). Moral 2 – by means of extra light as daylight reduces, 'fool' the sow's pineal gland into thinking that winter is not on its way, but keep her warm too. This time, 15 farms responded positively.

Background Jun 6, 2016 7643 views [6 comments](#) last update: Jun 14, 2016

## Light (II): How much and for how long?

**Pig Progress' resident expert on 'Pig Management', John Gadd, takes the subject of light 1 step further in this series of 4 and talks about the amount of light needed for sows - and for how long.**

**EXPERT**

[In my last column](#) I dealt with the effect of too much light from spring sunshine on outdoor and yarded sows, and then instruments for measuring light accurately which the farm staff can use. Where is sufficient light least understood? Primarily at and around breeding time and secondarily in the farrowing room.

Past advice, still seen today, has been 'bright enough to read a paper'. In my experience this is still not bright enough and comes from the days when the breeding area, often linked with dry sow stalls, was far too dark and gloomy.

### Simple & cheap remedy for barns with insufficient light

I still see it in outdated barns despite the remedy being simple and cheap, and not needing a complete building refurbishment or update. Too many farrowing rooms just have lights from heat lamps and natural light through and small heat-saving windows and ventilators, once feeding is over the lights are switched off when the staff leave. Not enough, as trials show that sufficient light in lactation has a carry-over effect into rebreeding as well as improving milk letdown, important in these days of large and hungry litters.

## So how much light?

I've been working with light for 40 years using a light meter wherever I go. These are my experiences, whatever the welfare people say, as my callouts have been getting things like returns, weaning to service intervals and empty days better, and how light levels can affect them.

Taking lux rather than lumens (close enough to be interchangeable measurements) a bright sunny day outside will measure out at 500-600 lux and a starlit night about 20-25 lux. Aim to achieve at least 350 lux shining down into the sow's eyes, not above and behind them for the breeding area and perhaps 300 lux illuminating the whole farrowing room; both for 14 to 16 hour periods in the 24 hour day.

## Group housed sows - target light to favoured lying areas

You cannot get this sufficiently correct without a light meter and the proof of this sufficiency I will detail next month. Easy enough to get it spot-on when sows are aligned in stalls – more difficult in groups of sows in yards or outside pens. This is where the light meter helps as it can reveal the intensity of light falling on those areas where the sows tend to lie or forage, and the lighting can be adjusted towards these areas accordingly.

## Farrowing house lighting

Similarly the farrowing house lighting can be altered to achieve the 300 lux for the requisite hours, governed by a time switch. As to hours of darkness, 20-25 lux for 8 hours seems correct, but in latitudes with very long summer days it only gets this dark for one to two hours. If so it needs at least some dimming down to 30 lux during the 6 to 8 hour 'artificial night'.

## Getting the balance of bright light and dimming right

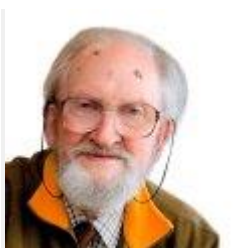
In my experience it is not so much the level of light but the interface between definitely bright light and at least some degree of dimming which is important. This can be done by pulling down some shades to reduce the natural light from windows, but care must be taken not to obstruct air movement and so restrict the ventilation.

## The light meter: essential but rarely used

Using a light meter avoids any arguments over incandescent/fluorescent strips and the latest varieties of high intensity lighting. Whatever you are advised to use, the light meter will tell you what the light intensity is near to the animal's eyes and the lighting can be fixed to reach it. Of course there are dull days and bright days in any season, but the light meter will give you a good handle on what dosage the sow is receiving over a period. If the lighting is made bright enough, I don't think these variations matter too much, but the jury seems out on this one.

## *Previous article*

### [Light \(I\): Seasonal infertility](#)



**[John Gadd](#)**

Topic: Pig Management

# Light (III): 4 proofs that correct levels are vital

In his penultimate piece about light, *Pig Progress*' resident expert on 'Pig Management', John Gadd gathers 4 pieces of evidence from various sources to prove just how light can effect breeding sows and why it is so important to get the levels correct.

## EXPERT

For the breeding sow and gilt, correct lighting levels are so important. 2 decades ago water was the 'Forgotten Nutrient' – since rectified. I only wish that lighting the 'Forgotten Management Task' was equally remedied.

But no. On so many farms – even the 'good ones' these days, they protest "We are lighting our pigs well."

My reply is: "Okay – where's your light meter?"

"We haven't one."

"Okay," I reply, "How do you know if you are reaching the right levels or not?"

My point is that many pig breeders just do not realise what degree of brightness is needed, and a light meter is a vital tool to make sure that there is enough – and occasionally too much.

These sows in an organic sow farm do get ample amounts of natural lighting. *Photo: Jan Willem Schouten*

## 4 examples showing the importance of lighting

Here is the proof from several sources, highlighted in various tables. *Table 1* shows overall throughput.

*Table 2* deals with the question how to reduce autumn [infertility](#).

*Table 3* deals with the lighting of farrowing rooms to the latest standards for at least 16 hours per day, compared to extinguishing the main lights when staff vacate the room (50 lux). In this table, each litter had the same numbers. Two beneficial effects could be seen here. Re-breeding was smoother and either the sows let down more milk or the piglets consumed more.

Last but not least, *Tables 4a* and *4b* show figures of the effects of providing shade in bright spring and early summer weather. It shows before-and-after results from three farms. Shade levels about 50-80 lux compared to 360-420 lux outside, and temperatures some 3°C lower. 2 farms benefited from early summer shading, 1 did not. American results on shading their outside runs seem to give similar or better results.

## Summary

- Much better awareness of correct levels of lighting is needed, even in modern pig buildings.
- This cannot be done accurately enough without the regular use of a light meter.
- Pig farmers – unlike the poultry industry who realise how important light is to birds – do not realise how bright the light needs to be in the breeding barn and in the farrowing house.

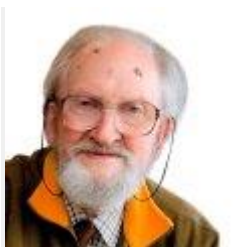
- Careful control of the lengths of light and dark periods seems to be essential.
- Manipulating light levels is one method (out of many) of lessening the effect of both the autumn and late winter/spring variants of seasonal **infertility**.
- Measuring light should be just in front of the sow's eyes (common sense!) not anywhere in the building.
- Control of light for outdoor sows is understandably very difficult.
- Control for sows indoors in groups and in outside runs is much easier.

**Previous articles from the series:**

**[Light \(I\): Seasonal infertility](#)**

**[Light \(II\): How much and for how long?](#)**

*References are available on request.*



**John Gadd**

Topic: Pig Management

I came across this on pigprogress.net:

<http://www.pigprogress.net/Sows/Articles/2016/5/Light-I-Seasonal-infertility-2791430W/>

<http://www.pigprogress.net/Sows/Articles/2016/6/Light-II-How-much-and-for-how-long-2804768W/>

<http://www.pigprogress.net/Sows/Articles/2016/7/Light-III-4-proofs-that-correct-levels-are-vital-2828653W/?intcmp=related-content>