



**Q:** *“I’ve heard and read on the internet forums a lot of conflicting information about whether pythons need UV or normal lights in their vivariums to do well. You’ve got lots of different sorts of pythons, what do you think and what do you do at Southern Cross Reptiles.”*

**A:** Many species need exposure to sunlight to remain healthy. Recently, there has been commentary in the popular media about the need for people to have some exposure to the sun to synthesise vitamins which otherwise have to be taken as dietary

supplements. Like us, many lizards require exposure to sufficient ultra-violet light (UV) to synthesise vitamin D for calcium metabolism. Without exposure to sufficient light of the correct wavelength, the majority of commonly kept lizards, such as goan-nas and dragons, will be unable to

manufacture healthy bones and will surely die without their food being dusted with vitamin D3 and calcium powder.

Based on this effect on other species, lighting is certainly a relevant topic for a python keeper to ask questions about. When we first started keeping and breeding snakes around 20 years ago, we too were unsure whether UV had any health benefits or not, so we fitted all our cages with a double fluoro system. This consisted of a full spectrum tube and a UV tube.

While I cannot make a blanket statement about every species of snake on planet earth, I can say that no species we have kept or species I have ever read about, or discussed with other herps around the world, has shown a definite requirement for in-cage lighting, whether UV or not. We have kept and bred many species of python for decades in cages without lights. Perhaps, this is not surprising since pythons are nocturnal animals that tend to hide during the day. We have also kept diurnal species, like the common brown snake (*Pseudonaja textilis*), for many years in cages without lights and observed no ill effects.

All that said, at Southern Cross Reptiles we do keep a significant proportion of our collection in vivaria with lighting. At any one time, we would have around 500 plus captive snakes. All our pre-breeding snakes (say zero to two years old) we keep in plastic tubs on heat tape. Most of our young animals are kept in a purpose built room that has floor heating to supply gentle heat (it gets very cold in Adelaide during winter). Lighting is supplied by a lamp on a timer plus the natural lighting through a window.

The larger breeding animals are kept in vivaria that have in-cage lighting. We provide lighting for our breeding stock for three reasons – cage display, heating and breeding stimulus. The lighting consists of dual fluoro lights in our older cages and single fluros in our latest units. With the exception of the green tree pythons, all our cages also have infrared



While our vivaria are organised with efficiency in mind, I enjoy looking at our snakes and like to give them a more natural environment. Shown here are some of the cages where we are successfully breeding Green Tree Pythons.



Our larger breeding animals are kept in vivaria that have in-cage lighting. As shown here, it's important to have protective covers over lights so the snakes can't smash the globes or hurt themselves.

spot lights which shine onto pieces of slate to provide a concentrated basking area.

Many large breeders design their cages so that workload is minimised and with little interest in displaying their animals. While our vivaria are organised with efficiency in mind, I enjoy looking at our snakes and like to give them a more natural environment. It's hard to appreciate the beauty of a python in a dark cage and it's also more difficult to observe them easily if they are not in a cage that is illuminated internally with natural quality lighting. I love the look of brightly lit cages with basking pythons on display and find a room full of dark unlit cages with snakes hiding under sheets of newspaper almost depressing. This preference, however, is a personal choice and as much as I might like to anthropomorphise (i.e. attribute human characteristics and feelings to my snakes), it really has little to do with the snake's well being.

The second reason we provide fluoro lighting to our cages is for heating. Fluoro lights provide a surprising amount of heat. In fact, you need to

be careful that the fluoro provided is not too large for the cage and overheats it. With our cages stacked three high the fluoro in the bottom cage heats the cage above and the middle one the top one. This is a gentle heat and provides a nice gradient across the cage. In our bottom cages we put heat tape to simulate the effect of the fluros above and use them to keep species that require less warmth (e.g. Inland Carpets, Centralian Carpets, Jungle Pythons).

The final reason we provide in-cage, natural quality lighting is for breeding stimulation. The evidence that in-cage lighting supports breeding activity in snakes is not clear cut. It certainly has been demonstrated unequivocally in a wide variety of plant and vertebrate species. We operate our breeding room so that initially natural light shines through the windows in the morning then a timer switches on the main room lights and finally the in-cage lights come on followed half an hour later by the basking heat. During the evening this process is reversed. Thus the day length gradually increases through spring to summer and slowly decreases

through autumn to winter. We adjust the timers monthly. While I lack the scientific evidence to prove that this process makes a significant difference, I can say with virtually 100% breeding success that it certainly doesn't hurt. One other interesting point is that pythons appear to have a body clock like us. They quickly get used to the day/night cycle and will be come out shortly before the basking lights come on and expectantly wait for the heat, and they adjust their emergence with the timing of the lights.

So far I have explained that in-cage lighting is unnecessary for python health and if it has an effect on breeding success it is not great. However, too much light is quite a different story and can be detrimental both to the health of a snake and attempts at breeding. In the early days, we learnt the hard way that if some snakes are given 24 hour lighting (e.g. a normal spotlight providing a basking site) it can cause illness and even fatality. It seems that the constant exposure to light, probably in concert with artificial heating, upsets the endocrine organs of the snake and the resultant hormonal



of diamond pythons in inside vivaria. Although these vivaria have lights they are completely ineffective at providing a source of UV and yet my diamonds have survived in perfect health for over 10 years now.

The concern with albino pythons is whether or not in-cage lighting hurts their eyes and causes problems. We have had the most experience with albino carpet pythons and I have noticed that they don't like being outside on a bright sunny day and they do tend to hide their heads from the direct sunlight. However, we keep them in cages with full spectrum fluoro. They thrive under these conditions and show no hesitation to lie out in the open on their basking sites and, as the originator of this morph, clearly they have bred well for us in these conditions!

In closing, I should quickly mention the use of timers to control in-cage lighting. A few weeks ago we received an email from a person that wanted advice on breeding their pythons. They provided 24 hour heat for their snakes through the cage lighting. We wrote back that this was not good for the snakes and certainly would make breeding difficult. By return email they explained that their thermostat didn't have a timer and since they couldn't be sure they would remember to turn the power off and on they would leave the snakes on 24 hour light. For those of you that haven't worked it out, the solution is a cheap timer bought from somewhere like Bunnings or Mitre 10!!

Happy herping.

With our cages stacked three high, the fluoro in the bottom cage heats the cage above and the middle one the top one. This is a gentle heat and provides a nice gradient across the cage.

The two sorts of lighting are clearly shown with the white for display and gentle heat and the red for basking. The advantage of infrared light is that it can be provided at night without upsetting the snake's daily rhythms.

confusion in turn causes all sorts of metabolic problems. I have found that the effect is reversible if caught in time, but if left for too long the snake will eventually die. Symptoms can vary from shedding problems through to star gazing behaviour also seen with viral diseases like the dreaded IBD (Inclusion Body Disease). Even keeping snakes in rooms where there is lighting for the greater part of the day can upset hormonal levels and while this might not kill the snake, it certainly can make breeding difficult.

As an addendum to the subject of lighting, it is probably worth mentioning two special cases that I am often questioned about – diamond pythons and albinos. It is still common folk law that the reasons diamond pythons die when kept indoors is that they must have UV to survive. Many years ago I went through the anguish of losing a number of beautiful diamonds and ended up sending tissue samples all round the world to try and solve the problem. Today with 100% success, we keep and breed a number

### **Do you have a question for Doc Rock?**

If you have any questions you would like Doc Rock to answer, please send them to:

[docrock@reptilesaustralia.com.au](mailto:docrock@reptilesaustralia.com.au)

or write to:

Doc Rock Questions  
PO Box 4499, Knox City VIC 3152