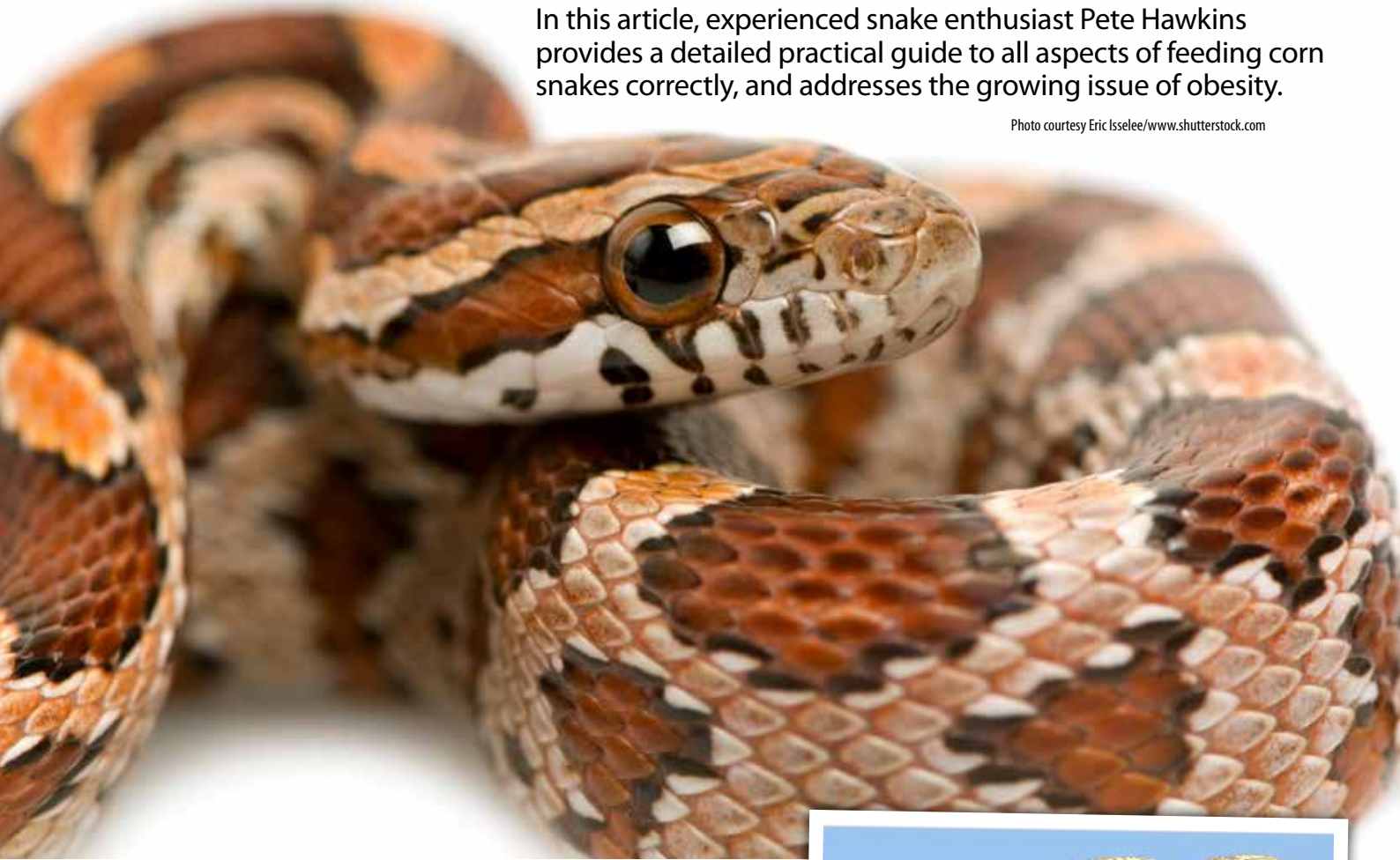


Feeding corns correctly

In this article, experienced snake enthusiast Pete Hawkins provides a detailed practical guide to all aspects of feeding corn snakes correctly, and addresses the growing issue of obesity.

Photo courtesy Eric Isselee/www.shutterstock.com



In common with other snakes, the popular corn snake (*Pantherophis guttatus*) is carnivorous. In their natural habitat, which is southern and central parts of the USA, these snakes readily hunt a wide variety of prey. They are opportunistic predators, frequently taking mice and other rodents, but are also known to feed on amphibians, birds and sometimes even birds' eggs as well.

Adaptable - up to a point!

This suggests that corn snakes are very adaptable in their feeding habits, and that is certainly true - but only up to a point! People often have strange ideas about what type of food to offer them. Over the years, I've been asked as to whether they can eat roaches or fish? What about meat such as beef or pork, and how about eggs or fish - or even



▲ The natural distribution of the corn snake.

Artwork courtesy Nk/Wikipedia/ CC BY-SA 3.0

vegetables? And the answers vary from no, definitely not, in the case of vegetables through to possibly so in terms of eggs.

In many cases, food of this type is nutritionally poor - particularly in terms of its calcium: phosphorus ratio. Snakes consume whole animals and benefit from the calcium locked up in their bones, in which beef on its own, for example, is significantly deficient.

◀ Quail eggs can be offered to provide variety in a corn snake's diet. Photo courtesy Nattika/www.shutterstock.com

The other thing is that if you offer an unsuitable food such as vegetables to a corn snake, then this will not elicit a feeding response in any case. Even offering insects



such as roaches will be unlikely to attract your snake's attention and encourage it to strike.

I have to admit that I do know keepers who have fed fish to their corn snakes, and they have taken it, but for me, this is not part of their natural diet and so I won't use it. I have occasionally provided quail eggs to members of the rat snake group in the past, including corns, but haven't done so recently, as this is not a staple food for them.

Suitable foods

As interest in keeping snakes has continued to grow throughout this century, so has the range of food that is commercially available for them. It has now reached the stage where there is really little point feeding the above foods that they will eat, even for the sake of variety. It is quite possible to achieve this aim now simply by using a number of the different items that are now available from many reptile stores, as well as specialist mail-order suppliers.

Items that I can now buy and offer to my corns (as well as my other snakes) are:

- Rats
- Mice
- Chicks
- Hamsters
- Gerbils
- Quails
- Multimammate mice
- Guinea pigs

▲ The multimammate mouse (*Mastomys natalensis*) is a relatively new addition to the list of commercially available foods for snakes, although it has been bred for laboratory research for nearly 80 years. It is a rodent that is naturally found widely across Africa and is slightly larger in size than a house mouse.

Photo courtesy Rosa Jay/
www.shutterstock.com



I purchase all of the above in a frozen form, and have them delivered direct to me. This then ensures that I have a variety of options available at all times, to suit my snakes. As you can see, there is really therefore no excuse for not being able to offer a range of different foods to your snake. This approach also allows you to cater easily for new arrivals, and get them eating well, although you do need a small freezer for this purpose, in order to store their food.

How often should I feed my corn snake?

The answer to this question depends very much on the age and size of

your snake, as well as the size of the feeder animals that you have available, to a lesser extent. Some breeders recommend feeding hatchling corns two or three times a week, with a pinky mouse. I feel this is excessive, and can store up problems in the future. My advice would be to offer food every five days at that stage, through until the snake is 6-7 months of age.

After this stage, I would then recommend feeding every 7-10 days for corn snakes, up until about two years of age. After this stage, I then increase the feeding interval to 14-21 days, not forgetting that as your snake grows, so it can be offered larger prey. For the first two months, ➤

The feeding frequency - and not just the food offered - depends on the size of your corn snake.

Photo courtesy bluedogstudios/www.shutterstock.com



your corn snake will only be able to eat pinkies, but subsequently, you can start to introduce rat pups to the feeding menu.

It is a good idea to rotate the food that you provide, especially as rats are nutritionally superior to mice. They tend to have more muscle and less fat in their bodies, making them a better food source in the longer term, but dietary variety is valuable too, so do not exclude mice on this basis.

Feeding habits

Snakes in the wild are dependent on catching prey, and hunting opportunities are obviously limited. Even if they have a chance to strike, there is no guarantee that they will be successful in obtaining a meal. Therefore, they are unsurprisingly conditioned to eat when an opportunity presents itself.

In vivarium surroundings therefore, corn snakes would probably eat almost every day if you provided them with food, especially bearing in mind their relatively high metabolism. But in terms of their health, this would inevitably lead to obesity, significant weight-related issues, breeding disappointments and ultimately, a serious likelihood of premature death.

The routine that I have outlined above is one that I have used successfully for well over 30 years with my corns, and passed on to other owners who have used it with great success too. My corns have been healthy, in terms of their diet and weight, on this feeding routine.

You can usually tell when your corn snake is wanting food by its behaviour, as it will show signs of increased activity, hunting around for food. It will appear more lively than usual, effectively pacing around its enclosure at this stage. This does not mean that you need to offer



▼ **Pinkies and fuzzies, showing the different in size. Note also the presence of milk, in the case of the young pinkie lying on its side.**

Photo courtesy Mirek Kijewski/www.shutterstock.com

food instantly though, especially if a feed is not due at that stage. This type of hunting behaviour reflects the snake's natural way of seeking food, and can be considered to be a good form of exercise in vivarium surroundings as well.

Size matters...

The different descriptions given to rodents used as reptile food can be

rather confusing, especially when you first begin keeping snakes. Starting with the smallest size, a pinkie is the description given to a newborn mouse. It can range from 1-3g (0.04-0.1oz) in weight, depending on the supplier.

Pinkies have no fur and although often considered to be quite fatty, they are in fact high in protein and are actually lower in fat than is popularly believed. Their calcium content will be improved, if they have fed, as may be evident from a white blob seen through the translucent skin in the vicinity of the stomach.

The next stage up is described as a fuzzy. This is a baby mouse which is starting to show signs of developing fur. Obviously bigger in size and weight than a pinkie, fuzzies typically weigh between 3-5g (0.1-0.12oz). Larger still are so-called 'hoppers'. These young mice are around 5-9g (0.12-0.31oz) in weight, and look rather like miniature adults.

Working through equivalent sizes in the case of rats, a new-born individual is known as a pup. These are slightly bigger in size than pinkies, weighing around 5g (0.12oz). The rat equivalent of the fuzzy is called a fluff. By this stage, there is





already a more marked variation in weight, with fluffs typically weighing in between 10-25g (0.35-0.88oz).

Weaners correspond to hoppers, although the difference in size is even more pronounced, with these young rats averaging between 25-50g (0.88-1.76oz). You then move on to fully grown rats and

mice, in size terms, usually with a division between smaller and larger individuals, depending on the seller.

When to move up in feeder size?

Snakes will have different weights at the same age, depending on the diet that they have been receiving,

▲ **A corn snake on the hunt. Note its alert demeanour.**

Photo courtesy Salvira/www.shutterstock.com

as well as their frequency of feeding. Always ask the vendor therefore for an individual's feeding regime, when acquiring a new snake.

With a young corn snake, I feed it on pinkies up until its weight is around 25-30g (0.88-1.05oz). I then move up a feeder size to using fuzzies for it. As a general guide though, when deciding what size of mice or rat to offer to your corn snake, it's a good rule to choose a feeder that is roughly the size - in terms of width - to that of the snake's mid-body section. Slightly bigger shouldn't be a significant issue, but if you choose food that is too large, then it can lead to issues such as regurgitation, which in turn causes stress, and that is definitely not good.

Another point to remember is that if you choose larger prey items, then you will need to increase the time between feeds. It is certainly not uncommon for a corn snake that has been fed a weaner rat not to require feeding again for 10 to 14 days, and sometimes longer, with absolutely no issues arising.

When to feed?

This can be based on your own schedule. In fact, the time of day is almost irrelevant, as long as you have a regular feeding cycle for your snake. Nevertheless, I have known the occasional corn snake that would only feed in darkness, but behaviour of this type is not common.

Offering treats

There is little in the way of treats that are suitable for corn snakes. Some keepers regard chicks as treat items, but nutritionally, apart from having a slightly higher fat content, they are not that dissimilar in nutritional terms from the rodents forming their regular diet. The only common side-effect is the fact that feeding a chick to your snake will often cause it to produce more loose faecal waste than normal, which is why this should be classed as a treat food. Quail eggs too could be offered occasionally, as mentioned earlier.

How long will frozen food keep in the freezer?

Firstly, it is important to use a proper freezer, intended specifically for deep freeze storage, rather than the quick freeze compartment at the top of your fridge. You can purchase quite small deep freeze units which are ideal for storing snake food, keeping it totally separate from



▲ **Matching the size of prey to that of your snake is very important, so that it can be swallowed easily and will not be regurgitated.** Photo courtesy Marek Velechovsky/www.shutterstock.com

human food.

Bear in mind that the packaging plays an important role as far as storage is concerned. Always choose a good quality, thick freezer bag if the food is not supplied already individually bagged and sealed. In all cases, get it back into a freezer as soon as possible after it is delivered or you collect it, so it cannot start to defrost. Should the items need repackaging, then be sure to exclude as much air as possible, before sealing each bag with a paper and wire tie.

As a guide, you should use hairless/furless animals within six months, or 6-9 months for those with hair, fur or feathers. The storage period may be extended slightly in the case of those where the packaging is unopened, but always use food in rotation.

Bear in mind as well that anything kept in the freezer in a ripped bag or unbagged will rapidly develop freezer burns. Such items tend to look all crystallised and almost grey in colour. Although a corn snake may probably still eat this type of food once it has thawed out and I doubt it would make them ill, it may be far less appetising of course. Think of a freezer-burnt burger or sausage: it just doesn't taste so good, and the texture isn't right either. So avoid offering food in this state to your corn snake if at all possible.

Obesity

This is an increasing problem in reptiles and amphibians generally today, and is something that I and

many others in the hobby have been seeking to raise awareness about now for a number of years. The basic problem is that people frequently don't understand the nutritional needs and feeding habits of reptiles, and so feed them almost like they would a dog or cat. Unfortunately, corn snakes have certainly not escaped unscathed from this lack of knowledge and nutritional understanding. People fail to appreciate that their metabolism is not geared to eating every single day of the week, and that they may be less active in any case in vivarium surroundings, where food is provided for them!

What makes the situation more difficult, however, is that it's actually hard to lay down ideal weights for corn snakes, because of the wide variety of morphs that are now available, which does impact on the weight of the snake, quite apart from the fact that some lineages of corn snakes are naturally bigger in size, reflecting the situation in the wild.

The best thing to do, however, in the case of an individual snake is to weigh it every month, and note this figure in a diary. This will reveal any unexpected changes, and can be very useful information should your snake fall ill, and you need to seek veterinary advice. You can weigh a corn snake either in a bag using a spring balance, or on a suitable pair of scales in a sealed plastic container, always remembering to deduct the weight of the

Corn snake morphs do vary in size, and this will be reflected in their weight. You therefore need to consider the body condition of your snake, to determine whether it could be starting to get overweight. This is an example of the candy cane morph. Photo courtesy Eric Isselee/www.shutterstock.com



enclosure from the overall figure, to obtain the snake's true weight.

Recognising the signs

A snake's body will also provide a clear insight into its condition, and whether it is becoming overweight or even obese. You can obtain the best insight by looking at the shape of the snake via the circumference of its body.

An individual of healthy weight will have a flat underside and an almost semi-circle body. This reflects the fact that the snake utilises as much of the surface area on its stomach as possible for traction, facilitating its movement. An overweight snake will be much more rounded in cross-section. This means that the sides of the belly will not touch the ground as it moves.

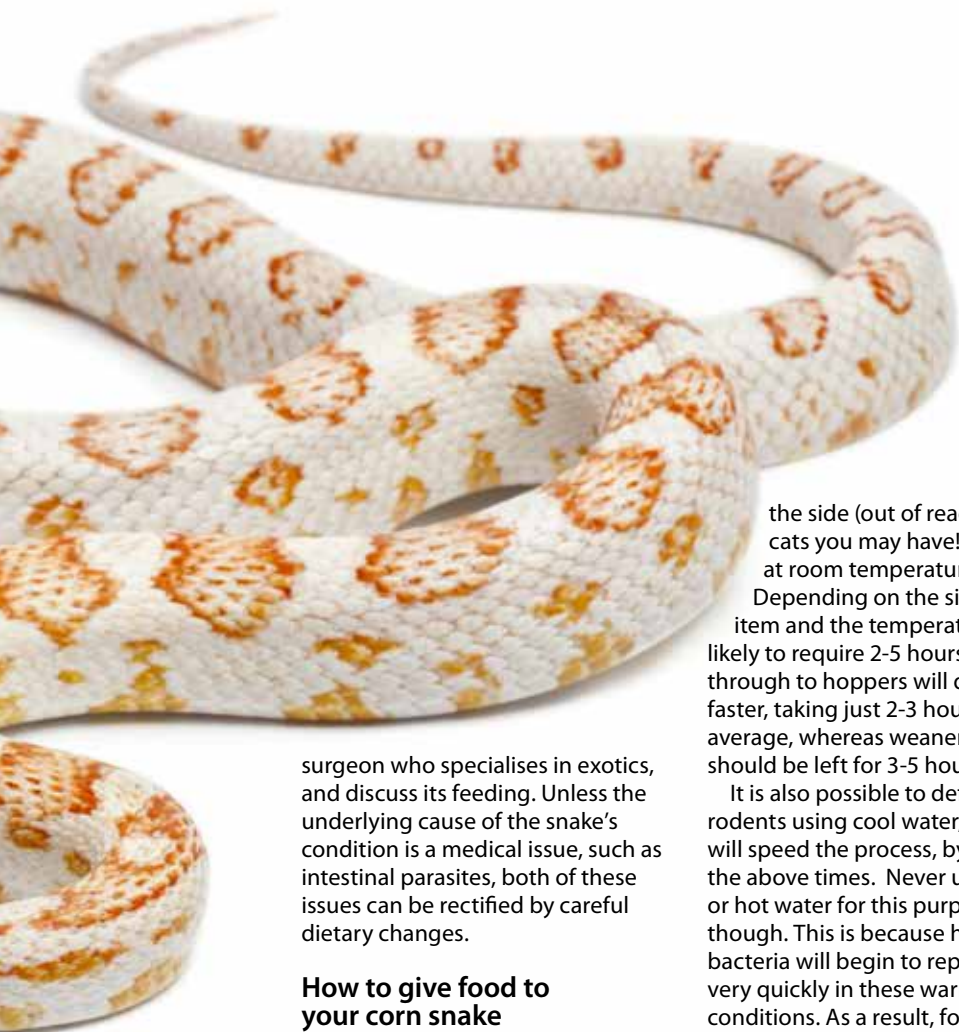
On the other hand, an underweight snake will look almost triangular in shape in cross-section. The sides of the body appear quite vertical, leading straight up to the spine. Should you have a snake that is either underweight or overweight, you should consult a veterinary



▲ Typical signs of freezer burn. The risk is greater if you use thin storage bags. Photo courtesy Tim Belyk/www.shutterstock.com



▲ A small deep freezer unit will be ideal for snake food, but put date labels on the bags so you can use them in rotation, keeping the food fresh and free from freezer burn. Photo courtesy MStock00/www.shutterstock.com



surgeon who specialises in exotics, and discuss its feeding. Unless the underlying cause of the snake's condition is a medical issue, such as intestinal parasites, both of these issues can be rectified by careful dietary changes.

How to give food to your corn snake

Start by taking the frozen food item out of the deep freeze, and if it is packaged individually, which makes the process much easier, leave it in the bag at this stage (although you don't have to do so). Then ideally, defrost it overnight in the fridge, and it will be ready to use the next day, although check it has thawed out thoroughly before offering it to your snake.

You can also place the package on

the side (out of reach of any cats you may have!), leaving it at room temperature in a tub.

Depending on the size of the item and the temperature, this is likely to require 2-5 hours. Pinkies through to hoppers will defrost faster, taking just 2-3 hours on average, whereas weaners upwards should be left for 3-5 hours.

It is also possible to defrost the rodents using cool water, and this will speed the process, by halving the above times. Never use warm or hot water for this purpose though. This is because harmful bacteria will begin to reproduce very quickly in these warm, wet conditions. As a result, following a period of defrosting in this way for a few hours, there will be a lot of dangerous bacteria that you'll be feeding to your corn snake.

Microwaves can be dangerous too, as they can easily leave ice crystals out of sight in the body cavity. There are also disaster stories of rodents exploding within a microwave on occasions, and that is something which I'd definitely not want to be cleaning up! The safest way of defrosting food for your snake is simply to leave it in the fridge, just as it is with our food!

The feeding process

Once you are absolutely certain that the frozen snake food has thawed properly, you then need to warm it up, which will increase its appeal. There are many methods used for this purpose. Some snake keepers will place the food in hot (but not boiling) water and leave it for five minutes, before offering it to their snake.

Personally, I'm a dunker! I'll submerge the top half of the prey in very hot water for about 30 seconds (but again, not boiling water). And then I'll offer it directly to the snake via some large metal tongs. These forceps must have rounded rather than pointed ends for the snake's safety, as it may well lunge at its food.

This method has served me



▲ There are several potential hazards linked with using a microwave to defrost snake food. Photo courtesy Volodymyr_Shtun/www.shutterstock.com

well over the years, although very occasionally, I have had some snakes that refuse to feed on wet prey. I don't know why, but that was definitely the case. So then I'd resort to heating the head end of the prey with a hairdryer for about five minutes. Although a nuisance, this method worked and these individuals would then eat normally.

Feeding in or out of the enclosure?

This is something that I have strong views about! I see it in my Snake Network - my Facebook group - and elsewhere online that people often remove the snake from its vivarium in order to feed it, transferring it to a tub or tub for this purpose, or even a different tank. There seems to be a widespread belief that if you feed the snake in its set-up, it will become aggressive in these surroundings.

This is simply not the case in my experience. The set-up is the snake's territory, so why would you remove it from surroundings where it is established? A place where it feels safe, confident and is stress-free, transferring it instead to a location which offers none of these benefits? Then subsequently, if you adopt this approach, you will need to move

▼ Corn snakes are active by nature, and will climb, as seen here, so that their vivarium needs to be designed accordingly, as this will also help to prevent obesity. Photo courtesy Jay Ondreicka. www.shutterstock.com



▲ A hairdryer can surprisingly be required on occasions when feeding corn snakes. Photo courtesy WAYHOME studio/www.shutterstock.com

the snake back into its usual set-up, assuming that it has eaten. This in turn causes a significant degree of stress, and risks the possibility of the snake regurgitating its food.

I would always recommend feeding your corn snake in its regular quarters. If it is aggressive here, then it is just being a snake. Feeding outside of its normal environment will not change this situation. If anything, this will just cause stress for the snake, which in turn, can increase the risk of illness.

How long will the food take to digest?

Providing you have the correct temperature gradient established within your setup, then the 48 hour "rule" is very useful. Throughout this period after a feed, do not handle your corn snake (or indeed, any snake), so as to allow the reptile to digest its food properly. Otherwise, the snake is likely to become stressed and will regurgitate its meal.

Should you find that your snake has regurgitated even without being handled, the chances are that the food it was offered was too large to digest. The best thing to do under these circumstances is simply to wait a few more days, and then try feeding the snake again with a smaller prey item.

Why is my corn snake not eating?

A large number of possible causes may explain why your snake has lost its appetite. The main reasons are likely to be that:

- shedding is imminent.



▲ **Shedding may affect the appetite of some but not all corn snakes**

Photo courtesy Murilo Mazzo/
www.shutterstock.com

▼ **Coming from a relatively temperate region, corn snakes may naturally suffer a loss of appetite over the winter months, but there can often be other more worrying causes responsible for a loss of interest in food.**

Photo courtesy Nashepard/
www.shutterstock.com



▲ **Corn snakes need to feel secure in their quarters if they are to feed properly.**

Photo courtesy BB1987/www.shutterstock.com

- it is winter.
- the temperature is incorrect.
- the snake is not hungry.
- the food is not warm.
- the snake is a fussy feeder.
- it is suffering from dehydration.
- it could be suffering from health issues such as mites and/or mouth rot.

Assuming an underlying medical reason can be ruled out, however, then changing the type of food offered can rekindle the snake's appetite. A switch from rats to mice or vice-versa often does the trick. This is actually another benefit of providing a varied diet, within reason, from an early stage, as you are then less likely to end up with a fussy feeder.

Snakes regularly lose their appetites during the shedding period, which can last for a couple of weeks. That said, many corn snakes will still eat regardless when they are about to shed, although if they are due to shed, I withheld food anyway.

This is because if they shed while digesting a meal, it can often lead to areas of the shedded skin becoming stuck on the new, because the skin is stretched as a result of the bulge on the body surface, created by the food in the digestive system. I would much rather not take this risk, preferring a hassle-free shed if at all possible.

What to do

If your corn does not take its food almost straightaway, you can leave this in the setup for another 2-3 hours. If it is not taken after this time, then you must discard it. The

feeding habits of snakes differ and it's also not uncommon for a corn snake to miss a scheduled feed or two while it is growing. If this is the case, just offer more food again in 5-7 days, and monitor the snake's weight closely, weighing it more frequently and making sure that it is adequately hydrated.

If you detect any significant weight loss or your snake continues to refuse to feed, you must consult a veterinary surgeon experienced with exotics, as there could well be some underlying issues present.

One of the most common mistakes is keeping a corn snake at an incorrect temperature. This will definitely stop a snake from feeding, regardless of species. With a digestion time of 24 to 48 hours under the correct conditions, if the temperature is sub-optimal, this will delay the process, which in turn can cause digestive issues.

Furthermore, being less active than normal, so the snake is unlikely to be seeking prey as would normally be the case. It is vital that you have a good heat gradient within the setup. Aim for a basking zone of around 30°C (86°F). A figure that is either a little higher or lower will not create much of an issue, providing there is ample coverage, and a variety of options for your snake to self-regulate its body temperature.

Always remember though, that provided everything is set up satisfactorily for your snake in the first instance, then you should not encounter any serious problems with regard to feeding behaviour going forwards, as long as you always use suitable food, and prepare it properly. ❖

