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# CALCIUM / PHOSPHORUS RATIO IN FOOD OFFERED TO WILDLIFE

## SUMMARY

The internet is littered with advice about feeding hedgehogs and much of it seems to revolve around peanuts, sultanas, and mealworms. Following concerns that multiple young hedgehogs were coming in to rescues with deformities and pathological fractures from gardens where they had been fed exclusively on one particular food we decided to look into the issue further.

Lucy Kells RVN had discovered some information which it appears is well known amongst the horse fraternity that calcium/phosphorus ratios (Ca:P) could be the cause of the problem and certainly the food exclusively offered to these hedgehogs has turned out to have a poor ratio which, as a sole diet, appears to be contributing to metabolic bone disease.

## WHY IS THE CALCIUM TO PHOSPHORUS RATIO SO IMPORTANT?

For every milligram of Phosphorus you consume, you must consume another milligram of calcium. If you don't then calcium gets taken from your body's calcium stores - bones and teeth - in order to balance the phosphorus out.

*"The excess of phosphorus in today's modern diet is a major cause of bone diseases. The calcium to phosphorus ratio didn't used to be as big of a deal as it is now. Phosphorus in the soil and in the foods we consume is on the rise due to pesticide use, and calcium content is on the decline due to over-farming the same soils again and again with calcium-depleting crops."*

**(R Phoenix 2013)**

We all understand the importance of a balanced diet to stay healthy and hopefully keep our weight at an optimum level, but that realisation seems to go out the window when it comes to wildlife and people think it's OK to feed piles of the same thing, day after day, which is positively harmful. Certainly at our rescue we are told, at least once a week, that homeowners are putting out enormous bowls of mealworms, or peanuts, or sultanas, or a mixture of all three, to the exclusion of all else. When questioned on the source of their information it appears to be coming from some of the large animal charities not necessarily involved with wildlife, and more worryingly, hedgehog rescues.

The problem is to do with the Calcium/Phosphorus ratio (Ca:P) in foods which can actually strip calcium from the body and explains why we were getting deformed and 'bendy boned' babies

coming in from gardens where they chuck out mountains of mealworms “because the hedgehogs love them”.

A healthy balance is a Ca:P of 2:1, 1:1 or at most 1:2. Higher amounts of phosphorus cause problems - mealworms are between 1:7 and 1:11 unless they have been specifically bred and gut fed to increase calcium levels but that doesn't guarantee correct levels once provided as food.

Peanuts have a Ca:P of 1:6  
Sunflower hearts Ca:P of 1:7

Conversely sultanas have a low ratio of 1:1.6 which is good, yes? Well no. Sultanas have a high sugar content, they get stuck on hedgehog's back teeth which results in the high incidence of tooth decay rescues are dealing with.

*“When crickets and meal worms are used in the diet for exotic animals, calcium can be a limiting nutrient. Low dietary calcium and a calcium:phosphorus ratio that is lower than what is optimal for the animal's nutrient requirement can result in metabolic bone disease, which is a widespread cause of death and suffering”*

**(PMI Nutrition 2016)**

*“Recent publications are showing that excess phosphate can increase inflammation, tissue atrophy, calcification of blood vessels, cancer, dementia, and, in general, the processes of aging.”*

**(Ray Peat, PhD: 2009)**

*“Same thing happened here when they chucked out loads of peanuts on the ground - pathological leg fractures had 5 pts from same garden, had to get vet to phone them up wouldnt take it from me “*

**(Dru Burdon, Jersey Hedgehog Rescue 2016)**

## CONCLUSION

If people wish to feed animals in the wild they must be instructed to provide a balanced diet. Often rescues recommend a particular food and homeowners will provide an excess of that to the exclusion of all else thinking they are helping but they're not. Wild animals are used to eating what they find which will be a mixture of items.

There are proprietary brands of hedgehog food available which have been properly researched, Ark Wildlife or Spike's for example, and these contain everything needed.

If the homeowner finds them too expensive then good quality cat biscuits can be given, both of these help clean the teeth. It goes without saying that if dry food is offered plenty of fresh water is also required.

## References

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