

## SICK BUDGIE BREAKTHROUGH

*by Don Burke*

For many years budgie breeders have had awful disease problems. Many breeders have encountered disease outbreaks that almost destroyed their whole flock. Many times, even in 'Budgerigar World', you hear of breeders despairing and reluctant to continue breeding our precious little birds. The list of diseases and problems is truly awful:

- Viral diseases that cause feather loss in adult birds (flightless and tailless wonders) and French moult.
- A debilitating disease first called megabacteria but which now is avian gastric yeast.
- Chronic runny noses and sneezing
- Constantly infected eyes
- Rampant infertility
- Coccidiosis

On top of that, many birds just never seem well. Many sit on the aviary floor all day. The list goes on and on.

You hear from many excellent breeders that antibiotics and general bird medicines are of little help. Many say that taking your birds to the vet is a waste of time and money.

I have written previously that auctions, and shows like the Nationals in Australia are partly to blame. Intimately mixing birds from many breeders from all over the country (and the world) spreads diseases at an incredibly fast rate. Perhaps too fast for the immune systems of budgies to cope.

Nonetheless, the disease rate seems preposterous. When I started breeding budgies in the 1950s diseases were never a problem of this scale. Clearly something is seriously wrong – some new thing has happened. Time and time again I looked at my birds as they too declined into a crevasse of morbidity. My average dropped from five chicks per nest to less than one.

Yet I had a wonderful set of bird rooms and aviaries. People call it the Budgie Hilton. The aviaries were super clean (not dirty as they used to be) and very dry to prevent disease spread. The general care was meticulous and the feeding was excellent.

Yet still they died or failed to reproduce. What had I done wrong? The diseases also produced egg binding and I lost quite a few hens. I attributed this to the fact that many of my birds were overweight. Yet I couldn't get them to lose weight, even if I fed them on just a basic diet of Hungarian millet and water.

By now many of you must be saying, yeah, I've got (or have had) that problem. Well, about a year ago I read some extraordinary new research on Vitamin D3. I had always assumed that D3 helped Calcium absorption for bones and eggs, and did little else.

The extensive new research done on humans is breathtaking in its revelations and their possible relevance to budgies. Vitamin D3 does a lot more than build bones, it is a powerful anticancer agent and it regulates the immune system. Low Vitamin D3 levels in humans have been linked to many serious illnesses: various infectious diseases, cancers (such as breast and prostate) and autoimmune conditions. Identical twin studies showed that increased sun exposure as children can reduce the chance of developing Multiple Sclerosis by up to 57%. The same applies to autoimmune diabetes, Crohn's Disease and tuberculosis.

New research has also confirmed that, in humans, vitamin D3 deficiency has been linked to infertility in women and poor quality sperm and lower fertility in men. This is exactly what we have seen in budgies.

Vitamin D3 is actually not a vitamin at all since we make it ourselves (as do birds) and it acts more like a hormone: that is a messenger chemical that controls various functions. It controls well over 1,000 genes in the human body.

In humans, ultraviolet B light (which is part of normal sunlight) acts on oil on your skin and turns it into Vitamin D3, which is then re-absorbed. In budgies oil is taken from the preen gland at the base of the tail during preening and is spread all over the feathers. This is turned into Vitamin D3 by sunlight and the birds consume it later on during further preening. This is essential for the budgies' health.

Here's the rub though: ultraviolet B light (UVB) does not travel through glass or clear plastic or fibreglass. Sunlight in general goes through, but not UVB light. So today's modern aviaries and bird rooms are death traps for birds since little or no UVB light reaches the budgies themselves.

It gets worse. Even "full spectrum" fluorescent lights lack UVB light. They produce the wrong sort of UV light, that is UVA. While certain foods contain Vitamin D3 such as cod liver oil, this is a messy and dangerous supplement that does far too little to help. It may assist in safe egg laying and other calcium issues, but not much more.

So I decided twelve months ago to try some experiments. My birds had sadly ceased breeding in their fully enclosed aviaries with glass or clear fibreglass roofs and windows.

- 1 I removed all of my glass windows and doors. I also removed all of the clear fibreglass roofing.
- 2 I installed reptile versions of full spectrum lights which had a fair amount of UVB emissions (timed to come on when I was absent).
- 3 I approached a local bird medications company (Vetafarm) in Australia to create a new supplement which was high in Vitamin D3 and which could be added to the birds' water. In this, I am indebted to avian veterinarian Dr. Tony Gestier of Vetafarm.

It's now a year later. The results are spectacular. Although I have discontinued all the fiddly food supplements and all bird medicines, my birds have leapt back to health. Egg binding is now down to zero. Most pairs have around four chicks per nest. The chicks are huge, often bigger than their parents. Some pairs have seven babies per nest.

Some previously infertile birds are now fertile again. Some incapacitated birds are managing to breed five babies in a nest. Many older birds (over 4 years) are healthier but have not hatched babies. But they are at least laying eggs.

I have no sick birds and have only had two sick birds (out of 350) in the last six months: both recovered and have babies. Several died of old age (over six years old).

The worst part was that, for six months after I started to feed them the supplement, nothing happened. It took around seven months to start to work. Many of my best birds seem beyond help, but the younger ones are rallying.

My aviaries get rain in them now. They smell a bit (like they used to before the clear roofing - but my breeding successes were huge then). The aviaries are windy too and my birds get wet. And I

couldn't care less. I have babies again and no sick birds. I have huge clearwing babies that are as big as normals.

My research was done in Sydney, Australia. The vitamin supplement is added to the water - it is now released as Vetafarm Soluvite D Breeder. It contains 2,500,000 IU of Vitamin D3 – twice previous levels. I put it in their water all the time.

The lights I use are called Sylvania Reptistar. These need replacing every six months to maintain UVB output.

I feed the following:

Seed - 95% Hungarian millet and 5% plain canary

Other – fresh corn on the cob, silverbeet and carrot daily

Shellgrit and cuttlebone

Nothing else

### Summary

It now seems that the budgerigar diseases that have crippled our breeding for years have been caused by badly-designed aviaries that exclude UVB light which in turn causes a deficiency in Vitamin D3. This compromises the birds' immune systems, which leads to severe and constant disease problems. Viral feather diseases go unchecked, avian gastric yeast (normal in birds' tummies) goes feral and slowly kills birds and most other common diseases get out of hand. Fertility plummets and general budgerigar vigour collapses. When significant increases in Vitamin D3 are introduced, the problems begin to recede. Improvements are slow, but perhaps in one or two generations the younger generations will be fully healthy again. Even infected eyes have largely cleared up and no babies have this problem like they used to. I have no new cases of feather loss of any sort. A few old flightless birds can fly again (but not many). Obviously budgerigar aviaries or bird rooms which are open to direct sunlight will produce far healthier birds.

It also seems apparent that the older vitamin supplements fed to birds simply don't contain anywhere near enough Vitamin D3. Hopefully, the new one is far better.

For those wishing to read further on Vitamin D3, check out the November, 2007 issue of Scientific American pages 36 – 44. To read the entire article go to [www.sciam.com](http://www.sciam.com) & search for cell defences and the sunshine vitamin.

### **Acknowledgement**

These articles by Don Burke and Dr. Michael Cannon are supplied by the *World Budgerigar Organisation* ([www.world-budgerigar.org](http://www.world-budgerigar.org)), as part of their encouraged exchange of research information, and supplied to the WBO with kind permission by the *Budgerigar Society of New South Wales, Australia*.

## Comments on Sick Budgie Breakthrough

by *Michael Cannon BVSc, MACVSc*

I read Don's article with interest and I agree with much of what he has to say. The Scientific American articles were also fascinating and I recommend reading them to all of you.

The problems Don was experiencing were significant and extremely frustrating. I always find it sad when I am dealing with a bird breeder who has a chronic, seemingly untreatable problem and observe the frustration that is causing them to be depressed, eventually leading to the loss of their passion for bird breeding. In this case, the story has a happy ending and it is obvious that Don's passion is revitalized.

The comments on antibiotics are understandable. I have been concerned for some time of the use of antibiotics as a "cure all" when birds are sick. It worried me that people will use (or more correctly abuse) antibiotics by using them on a hunch ("my mate's birds looked the same and they improved on antibiotics"). It is equally concerning that some bird breeders use antibiotics for a few days to "clean them out". In the right situation antibiotics can be life savers, but if used incorrectly that are at best a waste of time and at worst can create resistance so in future they do not cure infections. A world where many antibiotics struggle to cure infections is a world that really scares me.

Until recently, we all thought that Vitamin D was only involved in controlling levels of calcium for bones and eggs. The new research found in Scientific American and other medical and scientific literature is definitely a breakthrough. The information about Vitamin D's anticancer role and its effect on the immune system has been a great step forward in our knowledge. The influence on such a large number of genes is also evidence of how powerful this vitamin can be, and how significant its deficiency can affect your birds. We also need to revise our opinion of the levels of Vitamin D that each individual requires.

For many years, it has been my observation that any disease is a complex of interactions between the patient, the organisms causing disease and the environment. These new revelations regarding UVB and Vitamin D reinforce how changes to the bird's environment can impact on the organisms that are continually attacking the bird as well as the impact on the bird's ability to defend itself from this attack.

For me the most fascinating revelation is the role Vitamin D and UVB plays in protecting our birds from chronic, recurring infections. This may help to explain some of the failed responses to antibiotics.

The concept to enclose aviaries, to control problems that were prevalent, was not a bad idea, it was its application that led to many of the problems. In every design you need to find a balance. Total enclosure in glass, plastic or fiberglass removed access to direct sunlight and the important UVB rays that were filtered out. Birds, just like people need some access to direct sunlight – if you have insufficient levels of Vitamin D in your diet or insufficient exposure to sunlight, you will develop disease, but on the other hand, if you have excessive Vitamin D in your diet or excessive exposure to sunlight you will also develop disease. The skill is in finding the balance for your birds. At the same time you do not want to return to the problems of the past where excessive exposure to the elements led to diseases, particularly problems with infections and parasites.

The challenge is to find the balance - How much exposure to the elements is good for your birds? How do you place appropriate sources of UVB in your aviaries? The answers to these and other questions are a challenge as well as a source of frustration. The answers will vary from site to site as well as person to person! You need to find out what works best with your birds, in your backyard and your aviaries. The only means to find the appropriate balance are trial and error – to make a

change and then be patient enough to allow it to develop. In Don's case this took several months, but it did eventually pay off. He will continue to tweak these changes until he has the success he seeks. This is the fun and unfortunately also the frustration of working with live animals such as birds.

I look forward to reading the ongoing research into vitamins and other aspects of diet and environmental changes that can assist us to maintain our birds as healthy as we can. Just when you think you know it all some new research comes along that changes how we need to treat the animals in our care and in this case how we treat ourselves as well.