



Over the years, I have changed my practice from a hospital that merely treats birds to a partnership between my clients, their birds and me. Each of us becomes willing to make a commitment to do what is necessary to transform the bird from a caged pet (possibly with behavior problems) to a healthy, full-fledged family member. The annual Parrot Walk and Picnic becomes a celebration of this commitment.

Taking the bird from a biting, screaming, feather picking, fearful, maladjusted bird

**As I See It**

**Great Goal for  
an Avian Practice:  
Annual Parrot Walk**

Dr. Jan Hooimeijer  
*Meppel, The Netherlands*

to a family member requires a strict protocol. Basically I teach the owners to become "actors" and to behave as if

they feel great, are having fun, love the bird, and yet make the parrot do simple things and accept a

procedure that is directed by the owner instead of by the parrot.

I teach them when to ignore the bird and how to approach and handle the bird. I teach them to never have the bird on their shoulder and to create a cage that places the parrot at chest-high level. I teach them that whatever they give the bird for food or treats, it should always be part of a behavioral protocol that makes the treat/food a reward for desired behavior. This is

*Continued on page 2*



Dr. Hooimeijer (left) and some of his clients enjoy the most recent Parrot Walk.

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all about positive reinforcement.

Part of the behavioral consultation is wing-clipping to enable the owner/family to take the bird outside for a walk as soon as possible.

Organizing the Parrot Walk/Picnic has become one of the most rewarding and positive outcomes for me as an avian veterinarian. During those events I am no longer the veterinarian but someone who is having a great and comfortable day with my fellow parrot owners. There is a lot of mutual respect. Some clients have become great friends. It is real fun to see owners walking and playing or biking with their parrots — in the past they would not believe they could ever be able to do that.

For further information and additional photos about the Parrot Walk in the Netherlands, access our web site: < [www.harrisonsbirdfoods.com](http://www.harrisonsbirdfoods.com). >



# S U M M A R I E S

## of Ongoing N U T R I T I O N A L R E S E A R C H

*As presented at HBD Chat held in conjunction with AAV Annual Conference, Monterey, California, August, 2002*

### **Calcium Metabolism in Grey Parrots: The Effects of Husbandry**

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**H**ypocalcemia is a recognized syndrome in captive grey parrots, although the etiology is still unconfirmed. It is proposed that seed-based diets containing low calcium and vitamin D<sub>3</sub> concentrations contribute to the hypocalcemic syndrome, but primary hypoparathyroidism may also have a role.



Dr. Greg Harrison and Dr. Michael Stanford at Beck's Bird Barn, where the grey parrots are being studied.

The purpose of this study was to evaluate calcium metabolism in the grey parrot, including the measurement of parathyroid hormone and vitamin D<sub>3</sub> metabolites for the first time. Ongoing research is also looking at the effects that husbandry changes, in particular, ultraviolet light and diet, may have on the calcium status of the grey parrot.

#### **Study Group**

The study group consists of 100 grey parrots kept in separate adult pairs on a commercial parrot farm in the United Kingdom. The

birds are housed in the same building in separate cages 2 m x 1.5 m. Prior to beginning the study, the birds were examined by endoscopy, routine blood analysis (including PCR tests for circovirus, polyomavirus and chlamydia) and fecal analysis to ensure their health. The birds were initially fed a traditional seed mix diet with fruit supplementation for one year. The ultraviolet light levels were constantly monitored during the study.

Blood samples were taken under sevoflurane anesthesia from 40 birds (20 birds of

each sex) chosen randomly from the building. Half of this group was then placed on Harrison's High Potency Coarse nuggets and the other 20 birds remained on the seed mix as a control group. After another 12 months, further blood tests were taken from the 40 birds. All the blood samples were analyzed using a standardized biochemical and hematologic profile. In addition, the samples were analyzed for 25(OH) vitamin D<sub>3</sub>, ionized calcium and parathyroid hormone. It is from this group of birds

that the following results of studies are based.\*

#### Measurement of Ionized Calcium

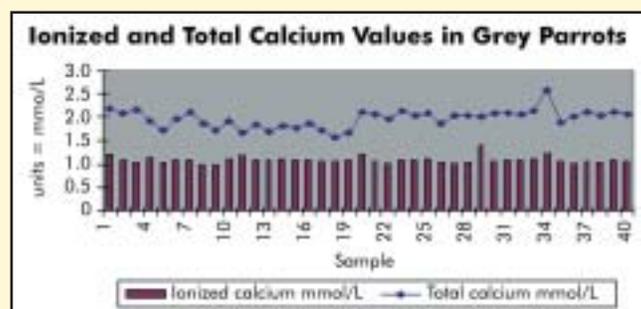
Calcium is distributed in the plasma as free calcium ions, bound calcium (mainly to albumin) and complex calcium (bound to anions). The traditional measurement of total calcium does not give the clinician an accurate picture of the bioavailable calcium in exotic species.

Whereas the results of measuring total calcium vary widely depending on protein levels in the bird, ionized calcium values are found within a narrow range. The measurement of ionized calcium is considered to be a more accurate reflection of the calcium status of a patient. Limitations of ionized calcium depend greatly on whether the sample has been exposed to significant pH changes prior to sampling. Contact with ambient air will cause a loss of CO<sub>2</sub> in the sample, and the subsequent rise in pH will cause a 25-hydroxy reduction in ionized calcium.

#### Measurement of 25-Hydroxy Vitamin D<sub>3</sub> in Seed-fed Psittacines

The aim of this study was to assess the vitamin D status of this colony of grey parrots fed an unsupplemented seed diet. Six of the 40 birds were determined to be unhealthy and were removed from this study.

Table 1. Forty grey parrots as described were analyzed for ionized and total calcium with the following results:



The results were subjected to statistical analysis using a modified t test to produce a normal range for ionized calcium of 0.96-1.20 mmol/L.

Vitamin D status is best assessed by assay of 25-hydroxy vitamin D due to its long half-life compared with other vitamin D metabolites. Traditionally, radioimmunoassays (RIA) have been used to assay 25-hydroxy vitamin D, but more recently enzyme immunoassays (EIA) have become available with the advantages of both simplicity and economy.

A special kit (IDS OCTEIA 25-Hydroxy Vitamin D kit) was used to quantitate 25-hydroxy vitamin D in the samples. Each sample was assayed in duplicate. The results indicated a range of 25-hydroxy vitamin D between 5.1-380 nmol/L with a mean of 119 nmol/L.

The results showed a wide variation in the level of 25-hydroxy Vitamin D in seed-fed grey parrots. In mammals, vitamin D levels below 50 nmol/L are considered a vitamin D deficiency. Chronic vitamin D deficiency

would lead to hypocalcemia due to nutritional secondary hyperparathyroidism. Analysis of the seed diet using the Zootrition™ program (Bronx Zoo) indicated a vitamin D level of 0.1%.

This study suggests that the vitamin D levels were low in 18 of the 34 birds sampled. All the birds had normal ionized calcium levels at the time of the study. Further parathyroid studies on the same group are being carried out to analyze the effect on the vitamin D levels of increasing levels of UV light in the 285-315 nm spectrum and a dietary change to a formulated diet. Initial observations on 5 grey parrots kept on formulated food (Harrison's High Potency Coarse) under the same husbandry conditions indicate higher levels of 25-hydroxy vitamin D compared with the seed-fed birds. Further tests on the study birds will see if there is a statistically signifi-

cant difference between the vitamin D<sub>3</sub> levels in seed-fed greys and pellet-fed greys.

#### Measurement of Parathyroid Hormone in Psittacines

Previous studies of hypocalcemia in grey parrots have been unable to investigate hypoparathyroidism or nutritional secondary hyperparathyroidism due to the lack of an avian parathyroid (PTH) assay. Mammalian PTH assays will not isolate avian PTH due to poor homology between mammalian and avian PTH molecules. Avian PTH is a chain of 88 amino acids compared with 84 in mammals. A 1-34 human PTH assay was used to assay grey parrot blood samples and PTH was found to be consistently recoverable. Using this information peptide sequencing was used to make the purified peptide 1-34. The peptide was used with further samples of grey parrot blood to produce antiserum to grey parrot PTH. The antigen was used to create custom enzyme-immunoassay kits specific for grey parrot blood.

The assay was used to measure PTH in a group of grey parrots (n= 40) kept on different dietary regimes under monitored UVB light conditions to produce normal PTH levels for the species. Results are forthcoming.

\*The building is now being lit artificially with ultraviolet tubes for a further year while the same diets are maintained. A third and final sample will then be taken in September 2003. Michael's work is supported with a grant from HBD International, Inc.

## Health Foods for Backyard Birds?

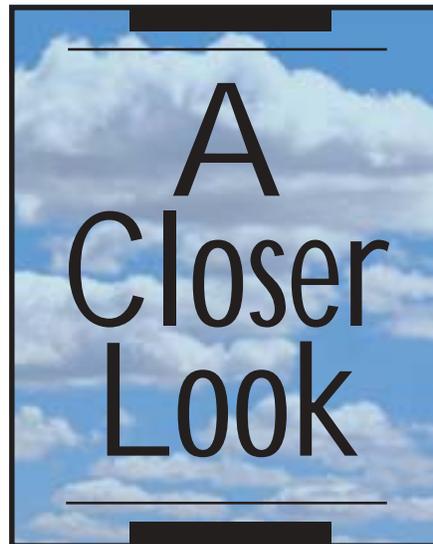
**B**ackyard birding — which is one of the most popular hobbies in this country during the winter months — can actually be dangerous to birds' health. Most of the seeds that are sold in grocery stores and pet shops to attract birds have residues of agricultural chemicals. The accumulation of these pesticides, herbicides and chemical fertilizers can lead to serious disorders — disorientation, neurological problems, soft-shelled eggs, and even early death. It is estimated that of the roughly 672 million birds exposed annually to pesticides in U.S. agricultural lands, 10% or over 72 million die as a result of this exposure.

According to an article in the *Journal of Wildlife Diseases*,<sup>1</sup> another potential problem for backyard birds is the presence of aflatoxin, which can affect wildlife that are fed contaminated grain. A study was initiated to determine if songbirds were being exposed to aflatoxin-contaminated feed throughout Texas. Bags of wild birdseed (n = 142) were purchased from grain cooperatives, grocery stores, and pet shops located in various regions of Texas. Aflatoxin concentrations in birdseed ranged from non-detectable to 2,780 mcg/kg. Overall, 17% of samples had aflatoxin concentrations greater than 100 mcg/kg, of which 83% contained corn as an ingredient. Granivorous songbirds in Texas are exposed to aflatoxins at backyard feeders, which may be a significant morbidity and mortality factor.

One solution to upgrade what is fed at backyard feeders is to offer organic seeds. Wild Wings Organic Wild Bird Foods are



Special handmade bird feeders, such as these with natural branches, are available from HBD International for offering organic seeds or water to backyard birds.



premium, OCIA-certified organic seeds and blends that offer guilt-free, pesticide-free wild bird feeding. As opposed to seeds grown with traditional farming methods, the ingredients for the Wild Wings' unique mixes are specifically grown to be free of pesticides, herbicides, fungicides and chemical fertilizers, making them strikingly different from anything else in the wild bird marketplace.

In addition to the more common organic black sunflower seeds or

safflower seeds, Wild Wings includes an eclectic array of special seed combinations with names like Hopper Topper, No Filler Bird Thriller, and Feeder Frenzy. Uncommon birds may be attracted to these mixes. "For the first time ever, I got indigo buntings to come to my feeders," said Roy Neher, professional wild bird photographer and videographer, whose "Roy's Pond" program is seen on PBS.

HBD's Tanya and Jean Coffinberry have placed a variety of bird feeder styles in their backyard in Franklin, Tennessee, and are currently attracting rufous towhees, tufted titmice, dark-eyed juncos, cardinals, chickadees, goldfinches, purple finches, woodpeckers, white-crowned sparrows and even bluebirds with organic safflower seed alone.

### Reference

1. Henke SE, Gallardo VC, Martinez B, Bailey R: Survey of aflatoxin concentrations in wild bird seed purchased in Texas. *J Wildl Dis* 37(4):831-835, 2001.



*Wild Wings Organic Wild Bird Foods (health foods for backyard birds) are available from HBD at 7108 Crossroads Blvd., Suite 325 in Brentwood, TN, 800-346-0269, or can be ordered online at [www.wildwingsorganic.com](http://www.wildwingsorganic.com).*

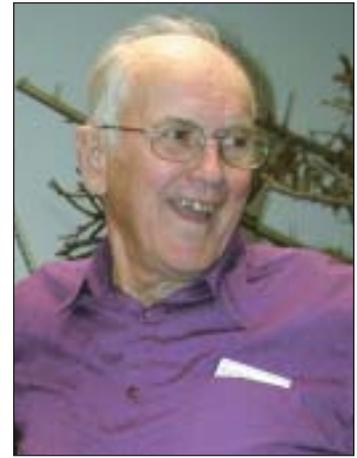
# HBD NEWS



Tanya Harrison Coffinberry

## Open House for New Facilities

HBD International, Inc. and Wild Wings were officially introduced to the Nashville community in November with an open house celebration. Special guests included Don and David Vetter from Grain Place Foods in Nebraska (the source of the organic ingredients for the HBD formulations) and Brian and Sheila Stockdale who came from the United Kingdom (distributors of Harrison's products in England).



Don Vetter has been an organic farmer since 1954.

## What's New?

- The Juvenile Hand-feeding Formula has a new ingredient to make it better. Tapioca malt dextrin is now being used as the emulsifier instead of milk. This has resulted in a product that is smooth, simple to mix and easy to go through a tube for feeding. Because it is now free of animal products, it is easier to import.
- Avizyme, which originally came in a coarse meal, is now available as a finely ground powder. This should make it easier to administer when combined with food or liquids.
- Trial-sized packets of High Potency Fine (HPF) and Coarse Grind (HPC) are now available in new foil-lined envelopes.

This is the first time the High Potency formulation has been available in a trial packet. You may request a box of 50 samples (25 HPC, 25 HPF) to be shipped with your food order.

- Based on the experience of The Bird Hospital in using Sunshine Factor (the red palm carotino oil described in Avian Examiner #22), therapy recommendations are as follows: 1-6 drops per 100 g body weight PO or over food once daily for 3 weeks, then reduce administration to twice a week. Sunshine Factor is available in 1 oz, 4 oz, 8 oz, 16 oz and ½ gallon sizes. Because the oil is semi-solid at room temperature, the bottle may be placed in hot water to liquefy before use, if desired.



## HBD's Team

Staff members for the new warehouse and office complex include (clockwise from left): Terry Knight, Warehouse Manager (kneeling), Nancy Coste, Office Manager, Jean Coffinberry, Project Manager, Tanya Harrison Coffinberry, Vice-president HBD, Greg Harrison, DVM, President HBD, Teresa Spier (Quality Assurance in Nebraska), Tim Boyce, general warehouse, Julie Anthony, Customer Service, and Karen Hazelrigg, Customer Service. Not pictured is Jonathan Hall, general warehouse.



## Are You Missing Something?

The following publications and products are available through the HBD Office and can be ordered and shipped with your food order. Call the HBD Office at **800-346-0269** to place your order (prices listed do not include shipping charges).

Item	Price
Maximize Your Bird's Nutrition booklet	Free
What You Can See in a Fecal Gram's Stain	Free
Harrison's Bird Foods Available Here poster	Free
The Best of the Avian Examiner booklet (#1-12)	Free
HBD Product catalog	Free
Current Issue Avian Examiner (#22)	Free
Back issues Avian Examiner (#13-21)	Free
Miscellaneous issues Avian Caregiver	Free
Set of 50 foil High Potency samples	Free
Avian Medicine: Principles and Application book	\$99
Cockatoo Anatomy Acetate Overlay	\$15
Penetran (4 oz tube)	\$10
Penetran plus Aloe (½ oz bottle)	\$5
Organic Apple Cider Vinegar (12 oz bottle)	\$7
Milk Thistle (1 oz bottle)	\$10
Dandelion (1 oz bottle)	\$8
Echinacea (1 oz bottle)	\$10
Tyrode's Solution (packet)	\$7

## What You May Not Know about HBD

- HBD International has been instrumental in supporting the establishment of an avian nutrition consultancy in Australia. Debra McDonald, Director of Démac Wildlife Nutrition (DWN), is a specialist avian nutritionist and now has oversight of quality control and formulation of HBD products.
- HBD International is one of the few pet bird food companies that has *each* new batch of food analyzed at an independent laboratory to ensure the quality control of all products.
- Démac Wildlife Nutrition has been coordinating field research with an \$8,000 grant from HBD International to investigate the health and nutritional status of free-ranging psittacines in Australia. Data from these studies will provide reference ranges for clinicians to evaluate the health and well being of pet



Debra McDonald and Dr. Harrison in Australia

birds and diagnosis of any nutritional inadequacies.

- Early 2003 will see the establishment of the Avian Health and Conservation Research Initiative (AHCRI), with a startup research \$15,000 grant from HBD. This is a nonprofit organization coordinated by Démac Wildlife Nutrition involving professional scientists, veterinarians and students.

### Proposed activities for 2003 include:

- ✓ Evaluation of nutrient composition of crop contents of free-ranging neonate psittacines in Australia. This study will assist in the formulation of nutritionally balanced hand-rearing diets.
- ✓ Evaluation of nutritional status of free-ranging lorikeets. This study will facilitate the diagnosis of vitamin A toxicity in pet and aviary lorikeets maintained on commercial nectar mixes that provide excess vitamin A.
- ✓ Quantification of vitamin K content of termites. Vitamin K deficiency has been diagnosed in a number of fig parrots that nest in termitaria and it is possible that the high amounts of vitamin K produced by gut microbes of termites provide a dietary source for these birds.
- ✓ Plans for field studies are being extended to the free-ranging macaws at the Tambopata Reserve in Peru.



## Using Harrison's

### WE GET MAIL

**I** use Harrison's Bird Foods exclusively at my clinic. Over the past 3 years, I have seen a great improvement with my avian patients' general health and plumage. Clients are impressed by their pet's feather condition, consistent stools, and the fact that the exact amount of food being consumed can be monitored, especially because these factors are related to their bird's health.

Recently I had a case of proventricular dilatation disease in an African grey parrot, and its weight was dropping fast. Once it was started on Avizyme and HBD Juvenile hand-feeding formula (along with a new NSAID and proper antibiotics/antifungals), the grey began to gain and maintain weight immediately. The grey is back to its normal weight now and the barium radiographs are normal again. I now use Avizyme in all ill patients and feel it is helping for a more speedy recovery.

*Daniel T. Brauer, DVM  
Kettering, Ohio*

**W**e think the new Juvenile formula is the best thing since sliced bread at the practice, because

it is easy to mix and is still syringeable. Ill birds do really well on it too, so it is part of our standard nursing protocol now. We are happy with the results in rearing youngsters so I will keep using this same formula. We are hoping to develop some growth data following the breeding season.

*Michael Stanford, UK*

**I** raise African greys and have had excellent results with Harrison's Juvenile hand-feeding formula. And there are definitely differences among brands. In talking with other avian veterinarians who also breed birds, some formulas have caused gout in baby macaws (too much vitamin D, presumably) and another formula contains human-

grade dried egg whites can contain clostridium. The clostridium apparently doesn't affect humans, but in baby birds it can be a problem. As far as switching formulas, we have clients gradually mix the original formula with the new until the bird has totally converted to the new formula.

*Gwen Flinchum, DVM  
Lake Worth, Florida*

**I**n my practice baby cockatiels do the best, by far, on Harrison's Juvenile diet. Once on this, converting to Harrison's pellets is a snap. Before Oxbow's Critical Care, I used this formula in many anorexic small exotic mammals, as well.

*Shawn Ashley, DVM*



# The Results Speak for Themselves



"Scarlett," a green-cheeked conure owned by Sarah McFarlane, was presented to The Bird Hospital with severe and chronic pododermatitis and severe feather discoloration. The bird had been eating a combination of two different pellets supplemented with fruits and vegetables.



Two months after being converted to Harrison's High Potency, the feathers still needed some more time to transform; however, the feet had totally healed.

## Reminders for Veterinary Staff

- Although the new packaging eliminates the need for refrigeration of HBD products, please check expiration dates on HBD packages frequently and rotate stock on your display shelves. Discard food that is past the printed expiration date.
- All birds converting to HBD for the first time should be started on High Potency formulation. Depending on the response of the bird, it may be continued on High Potency for up to 9-12 months.
- The extrusion process used for Harrison's Bird Food products does not reach the high temperatures that are required for processing similar foods. Therefore, heat-sensitive nutrients are not affected during the manufacture of Harrison's.
- Drop-shipping may be the easiest way for you to get small orders to bird clients. We ship the product directly to your client with a packing slip only — you get the invoice and charge the client.
- Several issues of the Avian Caregiver, a 2-page newsletter that promotes avian veterinary medicine, are available online to be downloaded and printed for your bird clients. You may access these at [www.harrisonsbirdfoods.com/avian\\_caregiver/main.htm](http://www.harrisonsbirdfoods.com/avian_caregiver/main.htm)



F10 IS NOW AVAILABLE from The Bird Hospital in Lake Worth.  
Contact 561-964-2121 or [thebirdhospital@aol.com](mailto:thebirdhospital@aol.com) for information.

HBD's Avian Examiner is brought to you as a service of HBD International, Inc., manufacturer and distributor of Harrison's Bird Foods. This publication is part of HBD's commitment to building avian practice through education and nutritionally sound diets. Although every effort has been made to ensure the accuracy of the information presented herein (particularly drug doses), it is the responsibility of the clinician to critically evaluate the contents, to stay informed of pharmacokinetic information and to observe recommendations provided in the manufacturers' inserts. Reader responses, comments and suggestions are encouraged. Please mail to Avian Examiner, 7108 Crossroads Blvd., Suite 325, Brentwood, TN 37027 or fax to 800-279-5984.



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### Example of Comments from Avian Medicine Online Discussion Site

*Frank Golder, BVSc, PhD, Dipl ACVA*

With the introduction of warm air blowers (e.g., Bair Huggers), body temperature loss has become much easier to control in human anesthesia and in many large veterinary teaching hospitals. They function by blowing warm air into an expandable hollow blanket that has small holes, which allows the air to circulate around the body. In anesthetized birds, instead of covering the animal,

I cover the table with the blanket, place a perforated tray over the blanket and place the bird on top of this. I have used steel trays (such as for surgical instrument packs), but a home-made one would suffice. The tray needs to be elevated off the blanket a small distance so that the blanket can inflate and air can circulate under it. Humidification of inspired air is also very important.