

# HAND-FEEDING FORMULAS

Is there another revolution on the horizon?

by Mark Moore

When Rick Jordan wrote the book on hand-feeding parrots back in the early 80's, he was a staunch advocate of home-made formulas, as many of us were. This was despite the fact that there were several, commercial instant formulas available that were being used on parrot chicks and with good results. But a skeptic he was, and therefore his home-made formulas, despite burning out several blenders annually, and despite that it was probably never consistent in nutrition from one batch to another, was his choice.

Those of you that have been around for a while might remember your favorite hand-feeding formula recipe. Many of them had some type of monkey chow or primate chow base, and were topped off with human baby foods, peanut butter, water, and maybe some type of vegetable or fruit. Many formulas had to be cooked to boiling, then cooled or frozen until time of use. I remember freezing baby formula in ice cube trays and then heating what was needed for each feeding. Even though this was a lot of extra work, for many, it was preferable over the instant formulas that we knew so little about. I think the hesitation was that there really was so little actually known about the dietary needs of the baby birds, we all tried to compensate in our own way. Of course that was not to say that our formula were nutritionally better, only that it worked for us and our babies looked good and seemed very healthy.

As the next decade rolled around, many of us got further and further behind in the nursery as our collections grew. Time management gave us the perfect opportunity to investigate some of the instant commercial formulas, and we did. Most of them that were tried worked well, but many of us still had that internal need to "add something" as it was being prepared. So for every different brand tried, we also added our own twists, be it peanut butter or papaya or even vitamin powders. Of course some of us have since learned of the risks involved with overdoing vitamins and even the toxic effects

(hypervitaminosis) that some nutrients create when overdosed in baby formulas. So hopefully we all have stopped adding excessive vitamins to commercial formulas where calculated amounts are already present.

Even with the sporadic problems that some companies have experienced, where too much Vitamin D3 accidentally ended up in the final product, it seems that commercial hand-feeding formulas have come a long way, and have revolutionized hand-feeding in psittacine nurseries. In fact, today there are even species specific formulas and higher fat versus higher protein formulas being produced. But this too requires some knowledge on the breeder's part, regarding the needs of specific birds, if they are to be utilized properly. We have learned a lot about avian nutrition over the past few decades, but putting that into practice is not always an easy task, especially in a mixed collection.

The one thing that any experienced hand-feeder has to admit is that when the parents feed the chicks, they are almost always fatter, grow faster and seem more robust. Despite trying many different nutrients, and many different fat levels or protein levels, parent-reared chicks will most certainly grow faster and look better. At weaning time, hand-reared and parent-reared chicks seem to be about the same in weight and size; but it does take a bit longer for those reared on commercial or even homemade formulas to achieve their adult mass.

These differences have always puzzled us. I've studied the research on "crop milk" which seems to indicate that parrots really don't produce it, not in the sense that *Columbiformes* do. We continue to speculate what the differences are in parent-fed diets and commercial hand-feeding diets. There is a theory that parent birds can force food, and thus, nutrients, up from deeper in the digestive tract when they regurgitate for their young. But collecting and studying crop contents of parent-fed chicks has yet to really uncover any secrets that could be used to close the gap between hand-fed and parent-fed chicks.

Close observation of the methods, or better yet, the consistency of foods fed to chicks in the nestbox reveals one very obvious difference: the parents feed chunky foods, not liquids to the chicks. This is not to say there are no liquids, but the consistency of the food fed is not "formula-like" at all. It looks as



Mark Moore with baby Black Palm Cockatoo

though they simply chew up their food and feed it to the chicks whole. So, of course we have tried that too, with dismal failures that often included dehydration of the chicks, crop problems, slow or static digestion, and more. The addition of digestive enzymes or probiotics did not help either when trying to feed a diet more closely resembling that fed by the parents. So, what the heck was the secret? What do parrots do that helps the chicks digest normal foods better in the nestbox?

We do know that most parrots will feed mostly liquid for a day or two after hatching. They may feed mushed up corn or some other super hydrated food, but for sure there is a lot of liquid in the crop of tiny, newly hatched baby birds. As the chick grows, even slightly, the parents tend to begin feeding chunkier foods to the chicks. At this point, the crop seems to be full almost round the clock. This led to the suspicion that the parents stuff them full of chunky foods and then only feed liquid until the crop contents begin to digest better. Some of this may be true, but it is not the main mechanism that differentiates between hand-fed and parent-fed chicks. After all, commercial formulas are chocked full of nutrients and vitamins. In fact, when you compare the crop contents of a ten day old nest hatched chick with formula ingredients, the formula would definitely be more nutritious.

Over the years I have tried to add different things to formulas to make them work just a little bit better. I realized that there is

a “method” as well as a “consistency” issue to be considered and implemented. Through conversations with Katie McElroy and other Palm cockatoo breeders it suddenly came to light that there is a way to feed baby parrots in the nursery in a similar way as that in the nestbox. For many years Palm cockatoos were something of a nightmare to hand-rear. Many would simply not do well after a certain point and would suffer severe anemia and other nutritional issues. But why was this species the only one that suffered from this problem? That simply did not make sense.

As I pondered this situation, I realized there were other species, though less critically affected, that “did not do that well” on commercial formulas, nor some of our homemade formulas, alone; Hyacinth macaws, Green-winged macaws, Caiques, Golden conures and others came to mind. Most of them survived and eventually were healthy, but they had slow, difficult starts, or were just not as “robust” as I thought they should be early on. And, like the Palm cockatoos that did survive our formulas in the nursery, at weaning time and shortly thereafter, these birds gained their strength and general

overall healthiness after beginning to consume weaning diets.

Putting all of this together with the new way that Katy McElroy has shared with us, as well as a few others who were hand-feeding Palm cockatoo chicks, it dawned on me there may be some mechanism in the digestive tract of baby parrots that is triggered, or simply works better, if there is roughage in the diet. Experimenting with forms of fiber simply did not do the trick either; the formula had to be chunky and have larger grit-like consistencies to work.

We learned fast that introducing chunky elements to hand-feeding formula had to be done correctly. Experimentation with babies that had already been on liquid formula for a few weeks showed that the addition of ground nuts or other chunky ingredients only caused crop stasis. Apparently the digestive tract gets “used” to a certain consistency or it adjusts to liquid formula within a few weeks of hatch. This is probably the reason that most of us, having tried to feed chunky foods in the past, have failed. Perhaps a very slow introduction would work at this stage, but it appears that beginning to introduce small flakes or chunks of nuts and vegetables

into the formula should be done within a few days of hatch, and continued at least once a day during the entire growth period. If the digestive tract is conditioned in this way, it can eventually handle a very thick, and course diet.

Using a food processor, we take raw hulled sunflower kernels, macadamia nuts, almonds, pine nuts, hazel nuts, Brazil nuts and sometimes even raw peanuts and grind them into a pulp mixture slightly more course than a heaping helping of southern grits. This is our smaller grind and it is used to introduce new chicks onto the chunky formulas. For about a week or two, this smaller grind is used at least two or three times a day to get the digestive tract used to processing more bulky foods. We have found it is easier to prepare the commercial formulas as directed, and then introduce the ground nuts into the already prepared slurry, making sure not to make it so thick that the chicks cannot digest it or that it causes dehydration. As chicks grow, the amount of nuts is increased as is the coarseness of the grind.

For day three chicks on up to a couple of weeks, and for most species, we usually introduce a heaping tablespoon full of ground nuts



The Long Island Parrot Society  
*presents*  
**Parrot EXPO 2013**

featuring **Dr. Irene Pepperberg**  
Lisa Bono, 'Meet the Vet',  
Interactive Education Center,  
HUGE Vendor Room & more!

*Long Island's only major exotic bird event!*

**Saturday, October 5, 2013 • 9AM-5PM**  
Freeport Recreation Center - 130 E. Merrick Rd., Freeport, NY  
*ATM & food for sale, handicapped accessible, convenient to parking, birds, music!*

**Parrot Society**

INFO & UPDATES:  
[www.liparrotsociety.org](http://www.liparrotsociety.org)  
**631-957-1100**



**Original Pet Tent**  
*(Birds Are Flocking To See What's New!)*

- Haven for Birds, Sugar Gliders and Other Small Animals.
- Easily Hangs in Cages or Play Gyms.
- Durable and Safe Construction
- Removable Firm Floor
- Numerous Adorable Styles.

Orders or Wholesale Information:  
contact **310-397-5506** HANGALL ETC. [www.pettent.com](http://www.pettent.com)  
fax **310-391-7687** 12748 Starwood Drive - Los Angeles CA, 90066



**WINGDOW**

Quality, elegant, one-of-a-kind products for companion birds.

[www.window.com](http://www.window.com)  
Chicago, IL USA  
**(866) WINGDOW**  
U.S. Pat. No. 6,287,394

into a ½ cup of prepared formula. Growth rates are dramatically increased and a new robustness will result as the bird ages and the nut formula is further enriched with larger pieces and at a higher ratio. After about week three, the nut mixture is ground a little more coarsely. At this stage we have found that a properly conditioned chick can take chunks as large as or larger than whole hulled sunflower nuts in the formula. Additionally, we tend to increase the amount of nuts as the chicks grow, too. By the time a chick is three to five weeks old, the mixture is virtually half and half, formula to ground nuts.

The biggest drawback to feeding chunky formulas is that chicks must be fed with a spoon. This slows down the feeding process, but we also find that the number of times a chick needs to be fed will slow, too. Strangely enough, digestion is not nearly as slowed as one would expect. In fact, some chicks will digest the chunky formula at the same rate as they would liquid formulas.

Pay attention to the chick's feces when you feed chunky formula. You will notice that some of the nut meat is not really digested and will pass through the system in the feces. This is not necessarily a symptom

of a problem and do not confuse it with viral issues or disease of the proventriculus. This seems to be perfectly normal in younger chicks and may continue up through the weaning process. After a bird is eating regular parrot fare, they will digest their food and produce the expected fecal material and urates of an adult. Also, at any time during hand-feeding, if the chick begins to dehydrate or the crop slows so much that it is worrisome, thin the formula back down by adding more water. If slow digestion continues for more than a few "normal feeding times", it may be time to visit a veterinarian and to check for bacterial issues in the digestive tract.

As more and more aviculturists begin to adopt a chunky diet for hand-feeding baby birds, perhaps the need for a "base formula" will evolve. I have suggested this to companies that produce hand-feeding formulas in the past, but they were hesitant to take on the liability that breeders may not balance the nutrition properly with their own additives. Many of us add stuff to our existing commercial formulas as it is, probably throwing off the "needed" balance of nutrients, but in the long run, our babies are healthy and, to

us, it seems to be rewarding. I know I am one who still throws in a spoonful of peanut butter or mixes in some processed papaya once in a while. So, what would be perfect for me is a base formula that is manufactured with lower fat and lower protein, with the understanding that I, the breeder, will add the things I prefer to the combine, bringing it up to par for each species. Of course this may create a situation for some breeders where some birds could be fed an unbalanced diet and that alone makes it improbable that a base formula will be manufactured in our near future on a commercial level. In the mean time we can add the ground nuts and make our formulas more closely resemble the consistency of those the natural parent birds might be feeding. Who knows, with the increased vigor in their digestive systems and their overall health, we may be taking steps that extend the lives, or certainly the overall health of our companion and breeding captive parrots. But, only our continued efforts and hands-on research will provide these answers and many more. I'd like to personally thank Katy McElroy for sharing her years of experience with the readers and shedding a light on this complex issue.

**Be Prepared! Order Today!**



# AFA LEG BANDS



- Open and closed bands available.
- Suitable band sizes from Canary to Macaw.
- Imprinted with the AFA logo.
- Traceable through a special coding and numbering system.
- Open bands: AFA logo 300 series stainless steel. (No customization available.)

- Closed bands available in 3 styles:
  - AFA logo stock closed aluminum
  - AFA logo custom closed aluminum
  - AFA logo custom closed stainless steel
- Special band applicator pliers are required to properly apply and close the open bands. AFA offers a tool for each band size.

Size requirements for individual birds may vary.  
 The band sizes are suggested by the manufacturer.  
 The AFA does not take responsibility for the suggested sizes.  
 Individual states may have their own banding requirements for exotic birds. AFA cannot guarantee that these bands comply with those requirements.  
 Each aviculturist should independently verify these requirements.

