Preliminary Aviculture Studies Using Organic Formulated Diets

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Use of Formulated Diets

Formulated Diets:

- high rates of infertility
- poor hatching,
- weak, non-thriving chicks (with a high percentage of gram negative bacterial problems), yeast excesses, bent legs, crop emptying problems
- high chick mortality.
- failure of parental incubation
  - decreased hatchability,
  - decreased parent-raising if eggs hatch,
  - increase in the time spent hand-rearing and hand-feeding chicks.

Reports of breeder mortality have also been recorded.

Experimental

Florida:

- eight psittacine species including: African grey parrots (*Psittacus erithacus*), Amazons (*Amazona* spp), cockatoos (*Cactua galerita, C. moluccensis, C. galerita* triton), eclectus (*Eclectus* roratus) and macaws (*Ara spp* and *Anodorhynchus* spp)
- maintained on a variety of commercial bird pellets composed of nonorganic ingredients for over 15 years, before being transferred to commercial products composed of organic ingredients (HBD Adult Lifetime Coarse for maintenance and HBD High Potency Coarse for breeding)
- resulted in an increase in breeding success from 0.87 chicks per pair (n = 150 pairs) to in excess of three chicks per pair,
- reduction in embryonic death, poor chick development and adult aggression,
- improvement in parental care eliminating the need to hand-rear chicks, which is not only costly but can also result in compromised immune systems.
- Variations in nutrient composition include: higher levels of preformed vitamin A (5-15 IU/kg vs. 0.4-5.7 IU/kg), copper (15-17 mg/kg vs. 7-13

mg/kg), iron (110-214 vs. 103-124 mg/kg) and zinc (95-118 mg/kg nonorganic, 70-81 organic breeding, 43-45 organic maintenance) in the nonorganic products with higher levels of fat detected in the organic diet for breeders (20-29% vs. 11-21% nonorganic). Vitamin E values were comparable for two of the nonorganic and organic maintenance diets (153-253 mg/kg), with higher values in one of the nonorganic diets and the organic breeding diets (223-305 mg/kg).

UK:

- 30 pairs of Blue and Gold macaws were maintained on nonorganic diets.
- Only one chick was produced and diagnosed to be of poor health.
- Productivity increased to 120 chicks when transferred to the organic products, all in good health.
- Birds were transferred to nonorganic diets during the nonbreeding season and only returned to the organic diets just prior to the breeding season, resulting in only nine chicks, indicating a requirement to maintain birds on diets of superior quality all year round.

Tenerife:

- health problems with chicks
- poor breeding in adults
- organic diets increased productivity
- improved health and survivorship of chicks

It is unclear whether the organic nature of the products in these studies, or variations in nutrient composition are implicated but nutritionally balanced diets composed of organic ingredients are certainly indicated.

These studies highlight the need to better understand the nutritional requirements of psittacines and consider the implications for the effects of pesticide contamination on the health of birds maintained in captivity on formulated diets composed of nonorganic ingredients.