

Bird Nutrition Can Be Improved

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Dr. Thornberry specializes in field research to help solve producer problems. He is a prolific writer with more than 200 industry articles on poultry management, environment and nutrition. His writings include a chapter on poultry in the 1980 USDA Yearbook of Agriculture.

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An extensive evaluation of nutritional programs used by pet bird producers has shown many flocks receive diets which contain excessive amounts of fat and which are low to marginally deficient in protein and essential amino acids and one or more vitamins. Nutrients in these diets are generally sufficient to sustain adults. However, nutritional deficiencies often become evident over time in breeders and in young birds at various stages of development. Deficiency symptoms include low production, poor fertility, embryonic mortality, low hatchability, overly fat breeders, slow growth, poor feathering, and a variety of nutritional diseases.

Various dietary supplements are commonly fed in attempts to alleviate problems or improve performance. In the best of situations the flock nutritional situation is improved. In most cases excessively expensive or complicated supplements are fed with minimal benefit. Some are actually detrimental to flock performance.

Discussions with producers have yielded little evidence that basic scientific knowledge is used in the development or formulation of dietary programs. Instead, bird feeding appears to border on being an art form. Most diets appear to be varied modifications based on the recommendations of experienced breeders and suppliers of seed or vitamin, mineral or protein supplements. A few are based on recommendations of self professed experts or consultants who often have minimal formal experience or training in avian nutrition or physiology. Some producers feel birds must be fed feedstuffs available in the wild. Various materials are sometimes included in diets because birds appear to relish them more than other feedstuffs. Often an item is fed because the owner "just feels it should be included."

If nutrition is to be improved, producers must realize that birds and other animals, including man, do not necessarily choose foodstuffs which provide nutrients most conducive to good health. It must be understood, too, that wild birds eat whatever is palatable and available and not necessarily what is best for them. Undernourished populations in third world nations often are hesitant to accept and consume nutritious foodstuffs different from those they are accustomed to. Children, as a rule, prefer candy, sodas and other sweets and junk foods to milk, meat and vegetables. Dogs normally prefer table leftovers to a nutritionally balanced prepared dog food. As a further illustration, many

producers feed large amounts of high fat sunflower or safflower seeds because their psittacines like them. Then, complaints are voiced because the excessively fat birds breed poorly.

A review of the literature reveals very little authentic pet bird research in management and nutrition by trained scientists. Reasons for neglect by the scientific community are numerous. The availability of public research funds is largely dependent on political pressures exerted by industry organizations. The pet bird industry has, in the past, been poorly organized. However, the American Federation of Aviculture and affiliated organizations appear to be in the process of alleviating this shortcoming. The industry's importance to the states and the nation is totally insignificant when compared to the economic and nutritional importance of food animal industries.

However, the pet bird industry has benefitted and can do so even more by increasing its knowledge and use of information derived from research and experience with poultry. Most of what is known about the physiology, nutritional requirements, growth and development of birds is the direct result of scientific research with poultry. In fact, more is known about the nutrition of the chicken than any other animal, including man.

A very high degree of technology is required to economically produce the more than four billion broiler chickens or fryers and over 270 million laying hens each year in the United States. Scientific research and training over the past forty years have made this technology possible.

Commercial poultry including chickens, turkeys, guineas, pheasant, chukars, quail, ducks and geese are provided economical scientifically balanced complete diets or rations which are fed in mash, crumble or pellet form. The rations are formulated using high quality plant and animal protein sources and other natural ingredients to provide required amounts of protein and essential amino acids, vitamins, minerals, fats and carbohydrate.

Water soluble vitamin and mineral formulations are often used to supplement the diets of stressed flocks or to administer immediate treatment to the rare juvenile flock with a vitamin D₃ or A deficiency. These formulations are quite effective and easy to use. Unlike similar preparations commonly used by bird producers, they are very inexpensive. The fat soluble vitamins

(A, D₃, E and K) are compounded with a starch or protein emulsifier to enhance dispersion and availability in water.

The common and expected results of scientific management and complete scientifically balanced diets for commercial poultry flocks in a highly competitive economic environment are consistent high fertility and hatchability, high liveability, rapid and efficient growth, full and rapid feathering and a very low incidence of nutritionally related disease problems. These accomplishments are identical to goals set, but seldom reached, by many bird producers.

Most members of the pet bird industry have consistently chosen to either ignore or remain uninformed of valid basic nutritional knowledge about poultry. Those having some knowledge of poultry nutrition appear at times to be trying to "re-invent the wheel" in their work.

A number of complete rations and protein supplements for pet birds are currently marketed. A few appear legitimate, containing basic ingredients providing nutrient levels necessary for optimum performance. Others are a hodge-podge of ingredients which are little different in make-up from conventional diets in widespread use. All appear vastly overpriced.

Most vitamin and mineral formulations marketed for pet birds appear to be effective. Prices, however, are much higher than commercially available poultry preparations of similar composition.

Extensive field research by the author during the past several years has shown conclusively that improved performance can be attained in the majority of flocks of parakeets, cockatiels and zebra finches if protein and vitamin nutritional levels are increased by providing the flock with access to high protein poultry feeds. Extra vitamins are generally not needed. However, vitamins added in the water at reduced levels often appear to have an immediate therapeutic effect on flocks. They are also cheap insurance against a possible deficiency.

An effective program consists of feeding a mixture of millet and 20 to 22 percent protein broiler crumbles free choice along with a complete water soluble vitamin supplement in the water at approximately 2/3 the recommended level for poultry. The addition of other seeds, greens, vegetables, chopped egg, etc. is not recommended or needed if the birds are receiving a

good quality broiler crumble manufactured by a reputable company. Some flocks, usually older birds, are slow in accepting the crumble feed. Birds with young, however, generally accept the feed rapidly.

A few producers have successfully eliminated seed entirely from the diet and feed only broiler crumbles or a game bird starter ration containing 26 to 28 percent protein along with poultry vitamins in the water. Others feed their birds a mixture of seed and game bird breeder crumbles (20 percent protein).

Breeder feeds generally contain 3.0 to 3.5 percent calcium and should probably not be fed alone. Consumption of seed, which contains little calcium, along with the breeder feed will reduce calcium intake to a permissible level.

A comparison of three brands of broiler crumbles has shown texture affects acceptability, with one brand consistently having a higher acceptance rate than others with similar nutrient compositions. The highly accepted brand has a slightly firmer crumble. Less waste due to "fines" in the feed is evident with this feed.

University of California, Davis, researchers published an article in the October 15, 1984 issue of *Feedstuffs* providing laboratory data from cockatiel studies. Conclusions were very similar to field observations reported here.

Costs in Texas (1985) for 20 to 22 percent protein broiler feed is \$7.00 to \$7.75 per 50 pound sack. The poultry vitamin and electrolyte pack now in increasing use by Texas producers costs \$1.65 to \$2.00 retail. The eight ounce pack is sufficient to treat approximately 150 gallons of drinking water at the recommended dose level.

In conclusion, feeding a free choice seed and broiler crumble diet and the use of poultry vitamins and electrolytes is paying dividends for an increasing number of parakeet, cockatiel and zebra finch producers. Benefits include reductions in feed costs, reduced labor in diet preparation, healthier birds and improved sanitation via the elimination of perishable feedstuffs, improved performance of breeders and more quality market birds.

Several preliminary field reports indicate practices reported here are proving successful in the production of larger Psittacines. One producer recently informed the author of her success in hand rearing young on broiler feed. ●



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