“UNDERSTANDING VITAMINS FOR POULTRY”

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CHICKS WITH VITAMIN DEFICIENCIES

Even in this day of popular commercial feeds and the general knowledge that all living creatures, human and animal alike, need vitamins at times there still is that one bird or small flock that needs extra help. This article hopefully will help you find the right vitamin to correct any problems that occur.

This article is written to help our new, young poultry lovers and those new adults in poultry understand the importance of vitamins. Today expectant mothers are given vitamin supplements, we give our children vitamin supplements and as we get older we are recommended vitamins to sustain our health & stamina. The same goes for poultry although most vitamins are provided in our modern commercial feeds. As the old saying goes, “a little knowledge doesn’t hurt”.

The pictures of birds with vitamin deficiencies obtained from an old magazine ad, circa. 1940 encouraged me to research the cause and help we can obtain by knowing our available vitamins for poultry. The photo’s shown here are graphic and might be upsetting, but they are true problems that can arise in our coops or brooders on rare occasions if the birds are not fed and cared for properly.

It is important to understand that some of the symptoms you will see in the pictures can also be caused by certain diseases; therefore, it’s highly recommended that you call someone for help and advice.

Figure 1 – Vitamin A deficiency vs. a normal chick
Figure 2 – Vitamin E deficiency
Figure 3 – Vitamin K deficiency
Figure 4 – This could be a form of Leucosis, Merek’s or other disease, also know as “crazy chick disease”.
Figure 5 – Vitamin B 5 (Panfothenic acid) deficiency
Figure 6 – Vitamin G deficiency
Figure 7 – Vitamin B-1 deficiency
Figure 8 – Vitamin D deficiency

We are so fortunate that today there is more known about vitamins than there was in the early 1900’s. Vitamins are basically understood in their entirety but even today new vitamins are constantly being discovered. Vitamins have been split up into several parts and now scientists refer to them as factors. Not all of the known vitamins or factors have any direct bearing on the health of poultry but the pictures below and the following narrative show the effect of deficiencies of the most important vitamins or factors affecting poultry.

VITAMIN A

Figure 1 shows a normal chick together with a chick of the same age deficient in vitamin A. Vitamin A is needed by chicks for growth and by adult birds to maintain good health, egg production, and hatchability.

A severe vitamin A deficiency gives birds the appearance of having a form of chronic respiratory disease, a cold, or other such diagnosis. There is a discharge from one or both nostrils, swelling of the face around the eyes, and the eyelids may be glued together by a discharge from them; yellowish white, round, cheesy patches about the size of a pinhead may be seen in the mouth and throat. These same symptoms are also caused by some common poultry virus or disease.

Sources of vitamin A are green grass, alfalfa, good quality alfalfa meal, kale, yellow carrots, and fish oils. Commercial mixed feeds put out by reliable manufactures contain sufficient vitamin A to affordable protection. Grazing on green grass, feeding kale or finely graded carrots and even alfalfa seeds are nice treats for your birds and are healthy for them too. These work well as a training treat when preparing your birds to show. It is important for those of you that raise turkeys to note that twice as much vitamin A is required by this bird compared to a chicken.

VITAMIN B

Vitamin B has been split into several different groups. The one that is of interest to us is vitamin B-1, also known a thiamin.

Figure 7 shows how a bird's neck is affected by a deficiency of this vitamin. A deficiency of this vitamin involves the nervous system and young birds are most likely to be affected. Affected birds show weakness, particularly of the legs, with loss of weight, in coordination and jerky movements of the neck and legs.

Thankfully we rarely see a deficiency of this particular vitamin today.

VITAMIN D

Figure 8 shows a chick that is Vitamin D: the weak legs, ruffled feathers, and a general unthrifty condition are typical. In this particular individual even the beak is soft and out of shape, which is not, however, always a symptom accompanying leg weakness. These symptoms normally show up between the 4th and 11th weeks of brooding. This might happen if you are brooding are large group of chicks in ratio to one feed dish. If a chick is not feisty or strong enough to fight though to the dish before it is empty or he's pushed out of the way he will lack the amount of feed & vitamins necessary sustain his need. Be aware that these same symptoms can be attributed to what is known as perosis or slipped tendon in which the legs are bowed or twisted in spite of the fact that the bones are well calcified and hard.

Vitamin D is sometimes called the sunshine vitamin. This vitamin is necessary to prevent rickets in growing chicks and to prevent a condition often known as egg paralysis that accompanies the production of soft shelled eggs in laying birds.

When consideration is taken to supplement vitamin D, the calcium and mineral content of the ration must also be considered. A consultation with your vet would be very appropriate in this instance. Most commercial feeds contain the supplements to prevent this condition.

Sources for Vitamin D are fish liver oils, such as cod liver oil and sardine oil. This can be drizzled on their daily ration for several days with good results but as mentioned above, is a longer dosage is needed a consult with your vet would be appropriate.

Let me point out that direct contact with the ultra-violet rays of the sun enables chickens to produce within themselves the necessary vitamin D, enabling them to make the best use of their feed. Birds kept in an enclosed barn; coop or other places that do not have direct sunlight available are the birds that might require this vitamin supplement.

VITAMIN E

Figure 2 shows a chick that is deficient in Vitamin E. Vitamin E seems to be essential for normal reproduction in hatching. Young chicks grown on a vitamin E deficient diet from the time of hatching develop a condition of imbalance and loss of muscular control about the third week. These chicks are found staggering around the pen or lying on their sides.

The most concentrated source of Vitamin E is wheat germ oil and will undoubtedly prove beneficial in increasing hatchability.

VITAMIN G

Figure 6 shows a chick that has been fed a diet deficient in Vitamin G. Vitamin G is most commonly known as riboflavin. A deficiency in this vitamin results in nutritional leg paralysis in growing chicks due to degeneration in the nerve tissue and results also in reduced egg production and lowered hatchability in mature hens.

In addition to the curled toes, chicks affected with this vitamin deficiency will walk on their hocks and appear unable to stand on their feet. It is interesting to note that adult hens deficient in vitamin G, riboflavin, pass this deficiency through the egg which in turn affects the embryonic growth and condition of the chicks at hatching.

Sources for Vitamin G are milk products (many breeders add yogurt to their feed during egg lying season), yeast and alfalfa. Note: Yogurt has also been proven to aid in digestion and replace enzymes sometimes lacking in the stomach.

VITAMIN K

Figure 3 shows a deficiency of vitamin K. This is not visible to the naked eye. The picture taken shows us the research taken to find the cause of death. Today this is *extremely rare*. Vitamin K is known to preserve the clotting power of blood. In the absence of this vitamin, chicks bleed to death from any injury causing a rupture of the blood vessel walls.

FIGURE 4 - Encephalomalacia

Figure 4 shows a chick with what is sometimes called crazy chick disease. This is rare in today's era of the bird fancy. The brain is affected by this disease and it's not known to be caused by a vitamin deficiency. It is most common seen in chicks 1 to 8 weeks of age. There is a sudden loss of balance with legs outstretched, toes flexed, head pulled in or bent back, flapping wings and more. Chicks become paralyzed and death occurs. No known treatment.

VITAMIN B-5 - PANTOTHENIC ACID – (CHICK DERMATITIS)

In figure 5 (you will have to look closely) shows a chick with this deficiency. A chick affected with this vitamin deficiency is shown with scabby lesions on the margin of the eyelids, at the corners of the mandibles of the beak, and on the feet. These lesions sometimes also appear around the vent. Evidently the first symptom is the chick sitting back on its hocks and is not willing to move around from the discomfort and weakness.

Sources for this vitamin are milk by-products, liver meal, yeast, alfalfa meal, green grass or cane molasses. Rations that provide a fairly liberal amount of the products will provide adequate amounts of this vitamin. Most commercial feed contains Enough milk byproduct to provide our chicks with the correct percentage needed for good health. Panothenic acid in adult birds causes reduced reproduction, and the hatchlings are weak.