



A Review On Nutrient Requirement Of Duck And Goose

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Review article

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ABSTRACT

Duck and geese rearing have rapidly increased in recent years. But most of the farmers still follow the feeding practice of the fowl. Since the digestion physiology and the nutrition requirement of the duck and geese differ than that of fowl, there should be specific feeding pattern for duck and geese. This review paper presents the nutrient requirement of the ducks and geese at their different stage of development on the basis of the research carried out by different scientists.

INTRODUCTION

There has been considerable interest in the rearing of ducks and geese. Ducks and geese rearing have rapidly increased in recent years, mainly for the use in meat and eggs. With the growing concern in scientific rearing of ducks and geese, people are becoming more conscious about the feeding and nutritional requirement of ducks and geese. Many industries in Europe and America produce special pellet feed for ducks and geese. Commercial feeds are available in mash, pelleted or crumble form. Mainly three types of ration are prepared for ducks and geese.

1. Starting - Up to 2 weeks of age
2. Growing - 2 weeks to 5 weeks
3. Finishing - > 5 weeks

Now, breeder ration is also produced for breeding ducks and geese. The duck's digestive system seems capable of digesting food as fast as supplied; therefore high density ration is important. Ducks will eat some green feed, but are not good at foraging as geese. So, pasture is not necessary for ducks. But on the other hand geese are largely herbivorous, and once started can grow to maturity on grasses alone, if these are young and tender. Geese are produced in two ways:

- a. By relying completely upon forage for nutrients.
- b. Feeding complete diets

In the former case, gains are comparatively slow; with a complete feeding program, gains are extremely rapid. Timothy, blue grass, white clover, broom grass are good pasture. Geese do not eat alfa alfa, sweet clover or lespedeza.

Needless to say balanced ration is of utmost importance for maximum production. To formulate a balanced ration we should be familiar with the nutrient requirement of the ducks and geese. There have been only a few researches done in this area. This review paper deals with the nutrient requirement and feeding management of ducks and geese.

LITERATURE REVIEW:

Ducks and geese have relatively high water requirements and this is likely associated with the increased rate of passage of digesta. Reducing access time to water, as a means of controlling litter moisture, most often results in reduced feed intake and reduced growth rate although two to four hour periods of water seems to be a compromise situation. There does not seem to be need to provide water such that ducks can either swim or immerse their heads and so bell-type or even nipple drinkers are acceptable. The water intake value of duck and goose is given in the table below:

FOR DUCKS:

Age (Weeks)	20°C	32°C
1	28	52
4	120	230
8	330	640
Duck Breeder	240	450

FOR GEESE:

Age (Weeks)	20°C	32°C
1	28	50
4	250	450
12	350	620
Breeder	350	600

Table 1 : Water requirement for ducks and geese (litres/1000 birds). (Leasons et al, 1993)

A) DUCK:

Relatively little researches have been conducted into the nutritional requirement of ducks and it is generally considered that their needs resemble to those of fowls. Growth up to 4 weeks of age is improved by approximately 30% when pelleted rations are used instead of crumbled mashes. Duckling should not be fed on a dry mash as they waste a considerable amount trying to wet a meal in the water troughs and may not consume sufficient food. Duckling is usually fed with 22% protein for 3 weeks, followed by 17% protein until slaughter. The starting rations are high protein, high-energy, vitamin-fortified and high density. Special pellet binders are used to increase density. During on eight week fattening period a duckling will consume a total of 7.0 to 6.8 kg of food. Duckling reared for laying purpose is fed with 15% protein and a medium energy level after 7 weeks old. Rations containing 16% or more protein have produced normal growth with energy levels ranging from 950 to 1350 cal metabolizable energy per lb ration. With ration containing 16-18% protein, higher energy levels produce ducks with higher carcass-fat content. As the energy content of the diet is increased over ranges from 800-1250 cal M.E. per lb diet, efficiency of feed utilization is improved. Breeding ducks will respond to regular chicken-egg rations. They don't need high energy or excessive calcium. A level of 2.2 to 2.6% calcium is adequate. A duck of one of the laying breeds requires about 200gm of concentrate food daily if kept confined, but running of pasture ducks eat a smaller amount of concentrate food as they supplement their diet with grass, slugs and insects.

High energy diets are often blamed for the high levels of fat seen in the carcass. All ducks are very much susceptible to mycotoxins and in particular aflatoxins. With low-protein diets the symptoms are greatly accentuated, and onset occurs more quickly. Heavy metal toxicity has also been seen in ducks. Grits should always be available for both growing and adult ducks.

B) GOOSE:

Commercial gosling grows so rapidly and in such concentrations that pasture is hard to keep up. Gosling can be reared in confinement, if fed a properly balanced diet, but they are much more easily managed and economically reared on pasture with grain added. Breeding geese, relish pasture which greatly reduces carry-over costs. A newly hatched gosling will live 48 hours, and probably up to 72 hours, before having to take food and drink. Then for the first three weeks a chick starter and for the next two weeks a chick grower rations can be fed to gosling.

Gosling can be fed on a pellet or pellet and grain system. Birds fed intensively in this way are killed at between 10 and 12 weeks of age by the time they will have consumed between 20.4 and 22.7 kg of food per head respectively. Home grown grains such as wheat, barley or oats may be used to replace a part of the compounded diet. Although the protein requirement of gosling is 20%, 24% produces better feathers and growth. Young geese are good grainers to the age of about 8 weeks showing a very fast growth rate. Starting at about 20 weeks of age, geese again begin gaining rapidly during the fattening period.

Geese go into a molt at 10 weeks of age and are not completely feathered out until 16 weeks. Geese weigh 9.9 lb using 3 lb feed and are comparatively free of pin feathers. Geese receiving a low energy feed do not grow as fast as those receiving a high-energy feed. Goslings fed high-fat rations are heavy and show excellent efficiency of feed utilization.

% protein	Ducks Feeds(Pellet Form Only)				Goose Feeds(Pellet Form Only)		
	Starter 18%	Finisher 16%	Breeder Developer 18%	Breeder 18%	Starter 24%	Grower Finisher 16%	Breeder 18%
Time to Feed/Weeks	0-2	3-8	Feed as a Maintenance Ration After 9 th Week	Start Feeding 4 weeks Before Collecting Hatching Eggs	0-6	7-18	Start Feeding 4 Weeks Before Collecting Hatching Eggs
Ingredients	lb	lb	Lb	lb	lb	lb	lb
Corn, yellow, medium grind	485	615	320	490	395	600	480
Alfaalfa meal, dehyd. 17% protein	30	25	15	100	30	25	100
Soybean meal, solvent, 45% protein	145	170	-	130	320	160	140
Wheat middlings, standard	100	50	175	50	100	100	50
Oats or barley, ground	100	50	-	50	40	-	50
Corn distillers dried soluble	40	-	-	25	20	-	25
Grain screenings	-	-	400	-	-	-	-
Molasses, cane	-	25	50	-	-	50	-
Meat and bone scraps, 50%	20	20	15	20	20	20	20

Whey, dried	20	10	-	30	20	10	30
Fishmeal. 60% protein	25	-	5	40	25	5	40
Salt	5	5	5	5	5	5	5
Di-calcium phosphate	15	15	5	10	10	10	15
Limestone, ground	10	10	5	45	10	10	40
Vitamin-trace mineral premix	2.5 or 5	2.5 or 5	2.5 or 5	2.5 or 5	205 or 5	2.5 or 5	2.5 or 5
Total	1000	1000	1000	1000	1000	1000	1000

Table 2: Practical feed formulas for ducks and geese (1000 lb mix)

Approximate analysis	Duck				Goose		
	Starter	Finisher	Breeder Development	Breeder	Starter	Grower Finisher	Breeder
Crude protein	18.0	16.1	13.4	18.1	24.2	16.3	18.4
Crude fat	3.4	3.1	4.2	3.2	2.8	3.1	3.2
Crude fiber	5.2	4.3	6.3	5.8	5.3	4.0	5.8
Productive energy Cal per lb	872.0	919.0	592.0	829.0	784.0	907.0	818.0
Calcium %	1.0	0.9	0.7	2.6	1.1	1.0	2.4
Phosphorus %	0.9	0.7	0.6	0.7	0.8	0.7	0.8
Salt(added) %	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Manganese(added) mg per lb	28.0	28.0	28.0	28.0	28.0	25.0	28.0
Vitamin IU per lb	4985.0	4680.0	3216.0	12373.0	1843.0	4658.0	12350.0
Vitamin D3 ICU per lb	700.0	700.0	700.0	500.0	700.0	700.0	500.0
Vitamin E IU per lb	5.5	4.3	3.8	12.2	5.1	4.6	12.4
Vitamin B12 mcg per lb	4.9	4.1	3.7	6.2	5.0	4.1	6.2
Riboflavin mg per lb	2.9	2.5	2.0	3.1	2.9	2.5	3.1
Niacin mg per lb	23.9	20.1	20.7	21.9	23.7	23.0	21.9
Panthothenic acid mg per lb	7.1	6.6	5.3	7.3	7.5	7.2	7.3
Choline mg per lb	67.0	551.0	377.0	605.0	784.0	552.0	613.0

Table 3: Nutritional Requirement for Duck And Goose

CONCLUSION:

Since these birds grown very fast, the big management and nutrition problem is to develop legs to support the body. Some starting ducklings grow from 40g at 1 day of age to 640 g at 14 days- a 16 fold increases in weight. The characteristic bone problem is “bowed-legs”. Added niacin and choline can play an important part in alleviating this bone abnormality. From the nutrition standpoint, as stated, dietary addition of the vitamin, niacin corrects a troublesome leg weakness problem. We must be careful that riboflavin tends to be deficient in practical-type starter diets. Ducks and geese meat are very often implicated for containing high carcass-fat content. In such condition energy in feeds should be reduced. But if they are sold on time this wont be a great problem. If a commercial feed for ducks or geese is not available, a chicken feed may be used. However, be sure that the chicken feed does not contain a coccidiostat if it is used for ducks or geese. Ducks and geese should be prevented from mycotoxins and metal toxicity which is normally encountered in contaminated commercial feeds.

One acre of pasture will feed about 20 birds. It is very much important to provide fresh water to ducks and geese at all times. They consume large amount of water. The waterers should be designed in such a way that the birds cannot get into them to swim water for swimming is not necessary. They need grit at all times. Chick size grit should be supplied at hatching but as the birds increase in size any small stones or hard grit will serve to grind the food in the gizzard. Ducks will be ready for market in 7-8 week. But geese are ready for market in 24-30 weeks.

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