

G. Nutrition

1. Which grain is better for poultry, corn, sorghum grain (milo), oats or wheat?

Generally corn and sorghum grain can be interchanged for each other in rations for chickens as they have almost the same nutritive value. More alfalfa meal or some other source of yellow pigment must be added to maintain yolk color if yellow corn is fully or partially replaced by other grains in a laying ration.

Wheat is very palatable for poultry. Wheat and milo have comparable energy contents, but slightly less (5-7%) than corn. Wheat is severely deficient in some amino acid, thus wheat should contribute only half of the grain in the ration unless the amino acids are balanced.

The physical form in which wheat is fed is important. Finely ground wheat becomes sticky when wet, sticks to the beaks of chickens and can cause beak impaction, (mouth ulcers) which may reduce feed consumption.

Oats are a good grain for growing chickens where rapid growth is not critical, such as egg-type pullets. Oats have a higher fiber content than other grains, thus are not recommended for layer or broiler rations.

2. How much water is needed for various types of poultry?

a. Estimated consumption/100 birds/day at 70°F.

Laying Hens -6.3 gal.

Turkeys -18.0 gal.

Broilers -6.2 gal.

Pullets -5.3 gal.

b. Follow these steps to estimate the gallons needed per minute. Allow at least a 10% margin of safety. Divide gallons/day by length of photo period to obtain gallons needed per hour. Divide this value by 60 to obtain gallons per minute.

c. Example - water capacity needed for 10,000 layers on a 14-hour light day.

$$100 \times 6.3 = \underline{630 \text{ gal.}} = \underline{45 \text{ gal./hr.}} = \underline{7.5 \text{ gal./min.}}$$

14 hr. 60 min.

d. Rate of egg production and temperature affect water consumption. For example, 100 egg-type pullets will consume 4.3 gal. at 50°F vs. 9.0 gal. at 90°F; 4.2 gal. at 30% production vs. 6.3 gal. at 90% production (70°F).

3. Is water quality important for poultry?

The following quality factors should be considered when evaluating water for poultry:

a. Contamination with infectious microorganisms or parasites. For this reason, do not use untreated water from creeks and ponds.

b. Mineral or solids content. Use the following as a guideline:

<u>Material</u>	<u>Recommended Maximum amount present</u>
Total solids content	3,000 ppm
Nitrate	1,200 ppm No. 3-N
Iron (if used to wash eggs)	2 ppm

c. Temperature - cool in the summer, warm in the winter.

4. Is it advisable to feed a breeding flock regular laying ration?

Better hatchability is obtained if breeders are fed a breeder ration. A breeder ration differs from most layer rations in that it contains more animal protein, such as fishmeal, meat and bone meal, and extra amounts of vitamins. Ref. H. Nutrition. Feeding Chickens – "K.S.U. 17% protein layer-breeder ration"

5. Is there an advantage to feeding poultry crumbled or pelleted instead of mash feed?

Ref. H. Nutrition. "Feeding Chickens"

Poultry generally grow faster and have improved feed conversions when fed pelleted rations. However, since egg layers aren't being fed for body weight gain, mash is OK for these birds.

6. Can molasses be used as an ingredient in poultry feeds?

It can be used as a source of energy provided the level doesn't exceed 5%. More than this will result in wet droppings because of its high mineral content.

7. Is cottonseed meal a suitable protein source for chickens?

Cottonseed meal contains two toxic substances for poultry. Gossypol causes yolk discoloration during storage and cyclopropenoic acid causes pink discoloration of the white. Poultry grade cottonseed meal has had these materials removed and is a satisfactory ingredient in poultry rations up to the 10% level. Do not use cattle grade cottonseed meal.

8. Is it safe to feed seed grains to poultry?

Not if the grains have been treated with a fungicide that contains heavy metal compounds such as mercury. Low levels of mercury will cause a severe depression in growth and in egg production and may cause death. This compound is concentrated in the liver, kidney, and muscle tissues.

9. What is the average feed conversions for various types of poultry?

<u>Type</u>	<u>Conversion</u>
Broilers	2.0 lb. feed/lb. live weight
Turkeys	3.0 lb. feed/lb. live weight
Layers	3.5 lb. feed/doz. of eggs

10. How much feed is required during the normal production cycle of various types of poultry?

<u>Type</u>	<u>Length of cycle</u>	<u>Total feed required/bird (lb.)</u>
Broilers	7-8 weeks	8-9
Egg-type pullets	18-20 weeks	16-20
Dual-purpose pullets	22 weeks	18-24
Brown-egg layers	12 months	80-90
White-egg layers	12 months	76-80
Turkey hens	18 weeks	45-50
Turkey toms	22 weeks	90-95
Ducks (meat-type)	7 weeks	8-9

11. Are raw soybeans a suitable feed ingredient for poultry?

Raw soybeans contains anti-nutritional factors, such as a trypsin inhibitor, which lowers their nutritional value, thus they should not be fed to poultry. Soybean meal has been heated during processing to inactivate these factors.

12. Do poultry need grit?

Grit is used by the bird's gizzard to grind the food as it passes through the digestive tract. Grit is advisable when birds are fed hard, coarse or fibrous feeds, such as whole grain. The value of grit is questionable when finely ground feed is fed. Sometimes grit reduces boredom of penned flocks.

13. Can poultry manure be fed to cattle?

Rations of up to 60 parts of dried poultry waste to 40 parts grain have given favorable results when fed to feeder cattle. Ensiling appears to be a good method of utilizing wet cage layer manure. Ideal manure-silage should have a moisture content of 40%, temperature range of 65 to 90°F, and a pH of 3.9 to 4.0. One report indicates 60 parts manure to 40 parts forage is a good mixture. Commercial poultry growers have fed processed poultry litter to cattle for decades with no adverse effects.

14. Should I worry about hormones in poultry feeds?

NO! Hormones are NEVER added or administered to any kind of chicken! They are illegal and they don't work.