

# FEEDS AND FEEDING

WHAT ARE THE NUTRITIONAL NEEDS OF MY  
POULTRY?



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UNIVERSITY OF  
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EXTENSION

# What is a nutrient?

There are six classes of nutrients:

1. Carbohydrates
  2. Fats
  3. Proteins
  4. Vitamins
  5. Minerals
  6. Water
- } Energy

<b>Nutrition Facts</b>	
Per 1 large egg (53 g)	
Amount	% Daily Value
<b>Calories</b> 70	
<b>Fat</b> 5 g	<b>8 %</b>
Saturated 1.5 g	<b>8 %</b>
+ trans 0 g	
<b>Cholesterol</b> 195 mg	
<b>Sodium</b> 65 mg	<b>3 %</b>
<b>Carbohydrate</b> 1 g	<b>1 %</b>
Fibre 0 g	<b>0 %</b>
Sugars 0 g	
<b>Protein</b> 6 g	
Vitamin A 10 %	Vitamin C 0 %
Calcium 2 %	Iron 6 %
Vitamin D 15 %	Vitamin E 15 %
Riboflavin 15 %	Niacin 8 %
Vitamin B <sub>12</sub> 50 %	Folate 15 %

# Carbohydrates

- Composed of sugars, starches, and cellulose
- Birds can not use cellulose
- Carbohydrates serve as a major energy source of the diet.
- Carbohydrates are the cheapest source of energy



# Carbohydrates

Sources include:

- Corn
- Wheat
- Barley
- Rice
- Sorghums, etc.



# Fats

- No dietary requirement exists for fats except for the essential fatty acids they contain
- Also function as a carrier of fat soluble vitamins
- Improves feed palatability

# Fats

- Serve as a concentrated energy source
- Contains 2.25 times the calories per gram than protein or carbohydrates
- Animal and vegetable fats are the highest energy sources in feedstuffs



# Proteins

- Made up of different amino acids
- There are 12 non-dispensable amino acids required for poultry
- Amino acids are the building blocks of body tissue and other components



# Proteins

Sources include:

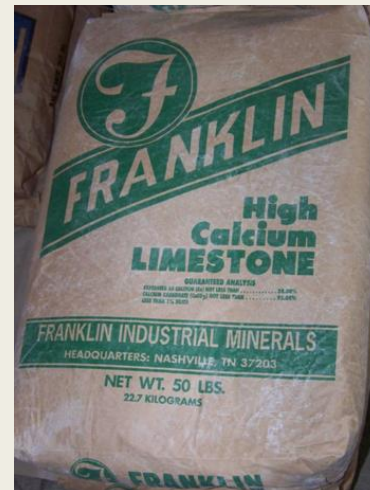
- Soybean meal
- Canola
- Cottonseed meal
- Corn gluten meal
- Sunflower seed meal





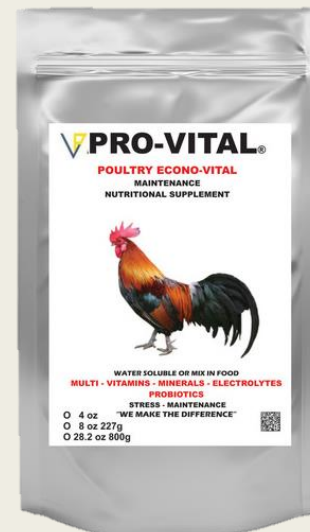
# Minerals

- 22 metal elements known to be required by animals
- Involved in the body's enzyme systems, structural components of skeleton, oxygen transport, etc.
- Grains are low in minerals so supplements are necessary



# Vitamins

- Trace organic nutrients
- Occur in feedstuffs in varying quantities and in different combinations
- Required for growth, reproduction and the maintenance of health



# Vitamins

Two groups:

- Fat soluble: A, D, E, and K
- Water soluble: C, thiamin, riboflavin, pantothenic acid, niacin, pyridoxine, choline biotin, folic acid, B12





# What is a nutrient requirement?

- Minimal amount of a nutrient that a bird must have to permit maximal performance
- Performance can be measured in terms of growth, egg production, hatchability, feed efficiency, etc.
- Nutrient requirements of poultry are published by the National Research Council, 1994

# What are some factors that can affect nutrient requirements?

- Age of animal
- Environment
- Disease and parasites
- Species
- Activity level



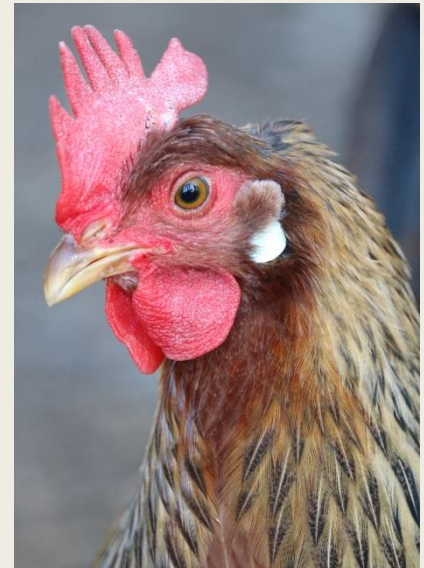
# Feeding the right ration

- Commercial poultry feeds contain numerous similar feed ingredients
- Most convenient way to feed birds
- Several types of rations are available (ie. starter, grower, finisher, and layer rations)
- Designed to meet nutrient needs of different types of birds

# Feeding the right ration

Choosing the best ration for your flock, you need to know the answers to these questions:

- *What age birds are you feeding?*
- *What kind of birds are you feeding?*
- *Are the birds being raised for meat or to produce eggs or for show?*





# Common percentages of nutrients found in poultry feeds

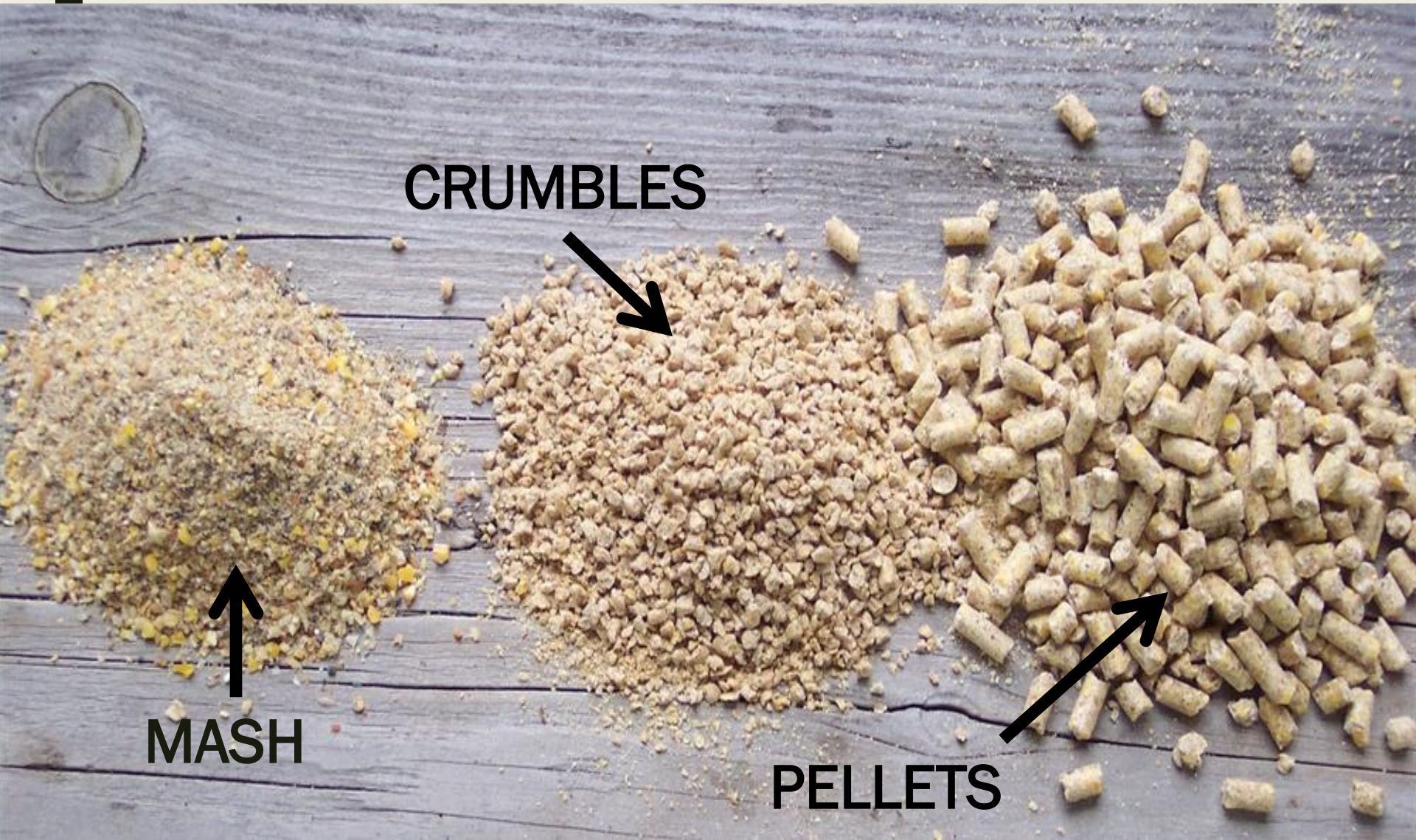
	Protein, %	Calcium, %	Phosphorus, %	Fat, %
<b><u>Broilers</u></b>				
Starter, 1 to 3 wks	22-23	0.9	0.6	6.0
Finisher, 4 to 7 wks	19	0.8	0.5	7.0
<b><u>Pullets</u></b>				
Starter, 1 to 6 wks	20	0.9	0.5	4.0
Grower, 7 to 18 wks	17	0.8	0.5	3.5
<b><u>Laying Hens</u></b>				
Layer 19 wks >	16-18	3.3-4.0	0.5	3.5

# Types of Poultry Feed

- Starter
- Grower
- Finisher
- Layer
- Pullet
- Turkey
- Goose/duck
- Multi-flock
- Organic
- Medicated



# Forms of Poultry Feeds



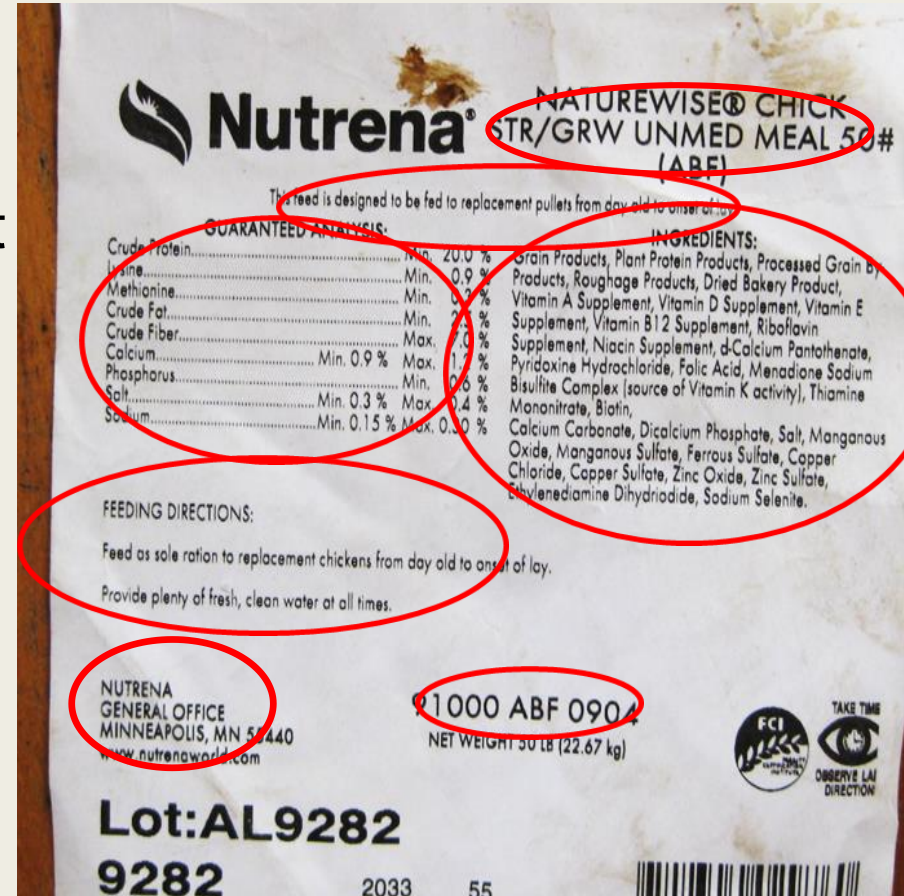
**CRUMBLES**

**MASH**

**PELLETS**

# The Feed Label

- ✓ Product Name
- ✓ Product Purpose Statement
- ✓ Drug Purpose Statement: “Medicated”
- ✓ Guaranteed Analysis
- ✓ Ingredient Statement
- ✓ Feeding Directions
- ✓ Warning Statements
- ✓ Manufacturer Information
- ✓ Quantity Statement



# Scratch Grains



- Cracked, rolled, or whole grains such as corn, barley, oats or wheat
- Usually low in protein and high in energy or fiber
- Promote scratching behavior
- Not necessary when birds are receiving a complete diet

# Scratch Grains



- Can dilute nutrient levels in formulated diets
- Rule of thumb: feed only as much scratch as the birds can consume in 20 minutes or about 10-15% of their total daily food consumption
- Provide an insoluble grit
- Birds with access to ground usually can find enough grit in form of pebbles and small rocks

# Table Scraps

- Excessive table scraps are not beneficial to birds or their productivity
- Okay to feed scraps as a “treat” for birds
- Rule of thumb: No more than can be consumed in about 20 minutes



# Pasture

- Potential to provide a source of protein, vitamins, and minerals (very little if any benefit)
- Remember the digestive system of bird is geared toward the digestion of insects, seeds, and grains
- Birds will still need a feed ration available to produce well





# Pasture

- Birds can make some use of high quality forages (legumes)
- Estimated chickens can obtain ~5% of their feed requirements by grazing
- Depends on forage quality and chicken breed
- Recommended to use blend of grasses (orchardgrass, clovers or alfalfa)

# How Much Feed Do Birds Consume?

Amount and type of feed required for one chicken by age and purpose (Vest and Dale, 2002)

## Layers (Brown egg type)

<u>Age</u>	<u>Total feed (lbs)*</u>	<u>Ration type</u>
Day old to 6 wks	4	Starter
7 wks to 18 wks	46	Grower
19 wks to 70 wks	104	Layer

## Layers (White egg type)

<u>Age</u>	<u>Total feed (lbs)*</u>	<u>Ration type</u>
Day old to 6 wks	3	Starter
7 wks to 18 wks	12	Grower
19 wks to 70 wks	80	Layer

# How Much Feed Do Birds Consume?

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## Meat Birds

<u>Age</u>	<u>Total feed (lbs)*</u>	<u>Ration type</u>
Day old to 3 wks	2	Starter
4 wks to 7 wks	7	Finisher

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\*Amount and type of feed required for one chicken by age and purpose (Vest and Dale, 2002)

# 2 Major Feeding Mistakes

1. Feeding the wrong feed.
  - *Nutrient deficiencies may lead to:*
  - *Decrease production*
  - *Feather picking*
  - *Lameness*
  - *Death*
2. Not feeding enough of the appropriate feed.

# Feed is an Investment!

- 60-70% of the cost of raising poultry is feed
- Wide range of high quality commercially prepared feeds are available from many sources
- Use the right feed for the type and age of bird you are raising
- The better the birds are fed, the more productive they will be!



# Additional Resources

- Nutrient Requirements of Poultry. National Research Council, 1994.
- Wilson, K.J. and R.S. Beyer. 2000. Poultry Nutrition Information for the Small Flock. Kansas State University. EP80.
- Vest, L. and N. Dale. 2002. Nutrition for the Backyard Flock. The University of Georgia. Leaflet 396.

# Questions?



# Thank You

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