

AgScience Poultry Science Curriculum
Feeds and Feeding of Commercial Poultry
Section 5
Problem Set

1. Fill in the following table:

<u>Ingredient</u>	<u>Total Lysine (%)</u>	<u>Digestibility (%)</u>	<u>Amount of Digestible Lysine in Ingredient (%)</u>
A	3.00		2.76
B	2.42	83.5	
C		90.0	0.95

2. The following diet is being prepared for broilers during the starter period (0-3 weeks of age):

<u>Ingredient</u>	<u>%</u>
Corn	67.5
Soybean meal	29.5

Analytical values for corn, soybean meal and meat and bone meal are as follows:

<u>Ingredient</u>	<u>Crude Protein (%)</u>	<u>Total Lysine (%)</u>	<u>Lysine Digestibility (%)</u>	<u>Total Methionine (%)</u>	<u>Methionine Digestibility (%)</u>
Corn	7.8	0.26	82.0	0.18	91.0
Soybean meal	47.5	2.98	90.0	0.65	90.0

Nutrient requirements for the chicken during the grower period are:

Digestible lysine 1.00% Digestible methionine 0.36%

- A. What is the total crude protein level (%) of this diet?
 - B. Calculate the digestible levels (%) of lysine and methionine in the diet, and indicate which amino acid is more limiting.
3. Describe what a limiting amino acid is in a poultry diet. How will the limiting amino acid effect bird growth if requirement not met? In poultry diets what combination of ingredients is typically used to alleviate amino acid deficiency and why is this combination effective?
 4. Diagram how broilers' nutrient requirements change over the life of the bird. How have commercial nutritionists use these changing requirements to reduce dietary cost?
 5. Compare and contrast diets formulated for different segments of the poultry industry. What do these different formulations indicate about nutrient requirements in commercial poultry?