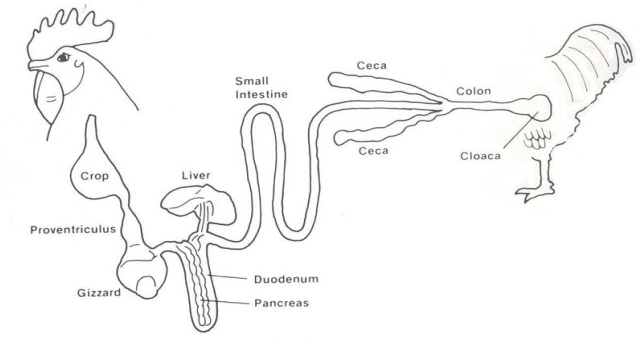
Animal digestion and nutrition

Protein for poultry

Background Info: Review the digestive system of chickens.



Problem: How much protein is available for an egg-laying hen from a protein treat after digestion?

Hypothesis:

Variables:

Independent:

Dependent:

Controls:

Materials
protein treats (Baked chicken treats activity)
Bradford solution
beakers
filter paper
gastric juice (Flinn Scientific - Item #: G0012)
protein standards
mortar/pestle

Procedure: Preparation of treat sample before digestion

1. Weigh out 5g of treat sample in a weigh boat using electronic balance, then add sample into a mortar.
2. Add 20 mL of distilled water to treat sample in mortar and grind sample with a pestle to make into a slurry.
3. Filter slurry using filter paper and funnel to collect liquid food sample into a small graduated cylinder or beaker.
4. Use the filtrate in the bottom of the cup to complete the Protein Indicator Test.

Preparation of treat sample after digestion

1. Weigh out 5g of treat sample using electronic balance and add to labeled beaker with 25mL of gastric juice. Place treat samples in gastric juice for 6 hours at 42 degrees Celsius.
2. Filter the gastric mixture (using procedure from step 3 above) into a clean labeled plastic cup after incubation time.
3. Use the gastric filtrate in the bottom of the cup to complete the Protein Indicator Test.

Protein Indicator Test

1. Pipette 30µL of sample into appropriately-labeled micro test tube.
2. Add 500µL of the Bradford reagent to each tube and mix well on the vortex.
3. Incubate for 5 minutes at room temperature.
4. Using the known protein standards, measure the percent protein in test sample.
5. Record result in data table. Repeat steps 1-5 for all samples and trials.

Data

Protein Concentration of Poultry Treat

Trials	Before Digestion (%)	After Digestion (%)
1		
2		
3		
4		
5		
Average Percentage		

Conclusion:

REE: Restate evidence (describe results-discuss actual quantifiable data)....were there any changes in the protein percentage after digestion? Are you able to accept or reject your hypothesis??

PE: Discuss potential errors and ways to improve the lab. Can be in T-Chart format

Potential errors	Ways to improve

PA: Practical Application of the lab (why is lab important?)

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GrowNextGen and The Ohio Soybean Council and soybean checkoff.