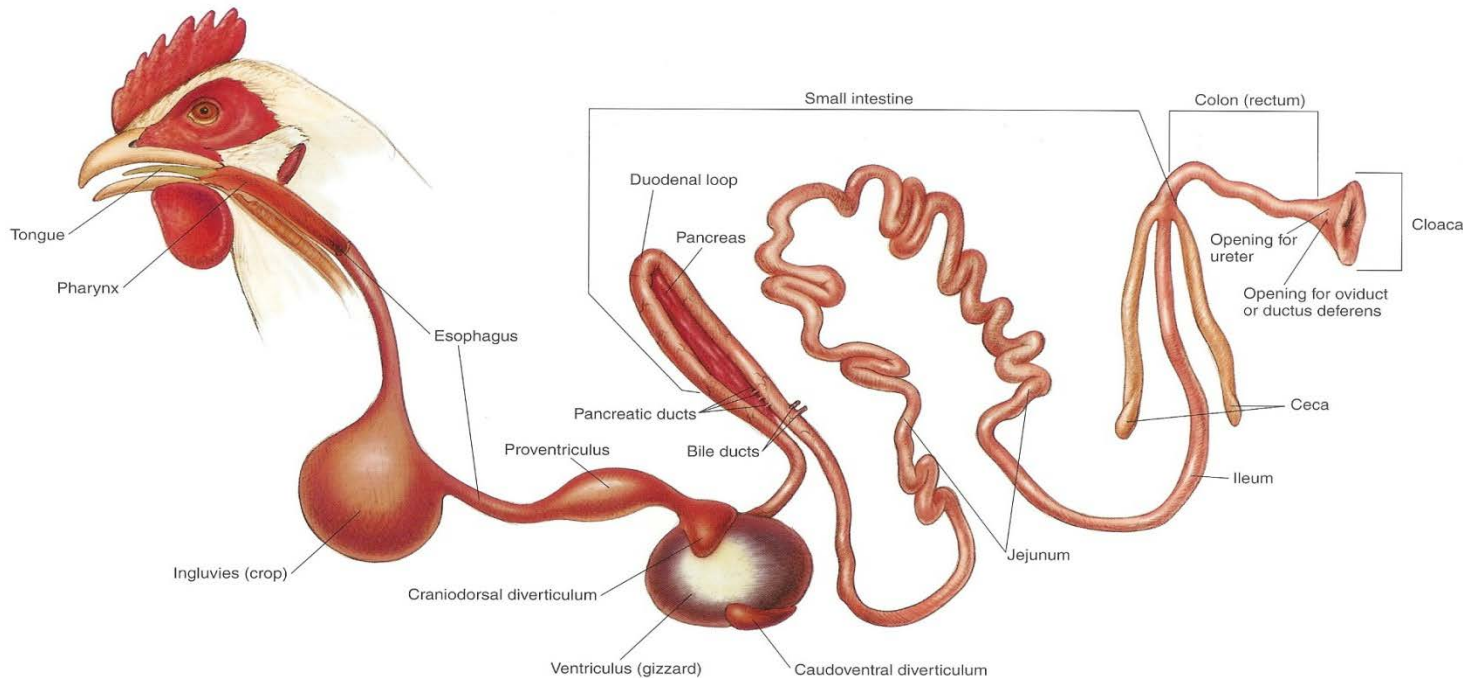


Digestive System of Poultry

The purpose of the poultry digestive system is to use nutrients found in feed through the processes of digestion and absorption. The digestive system begins at the oral cavity and ends at the **vent**.



1. Oral cavity

- Beak: Prehension of food.
- Tongue: the tongue functions to move food within the oral cavity and initiates **deglutition**, or swallowing of feed.
- Taste buds

2. Esophagus

- The esophagus is a flexible tube, carries food from the oral cavity to the **crop** and **proventriculus**.

3. Crop

- The crop is an outcropping, or pouch, of the esophagus.
- The crop functions to store feed. No digestion of food takes place in the crop.

4. Proventriculus

- The **proventriculus** is the true stomach of the bird, similar to the mammalian stomach.
- The proventriculus uses acid and other digestive enzymes to begin the chemical breakdown of food.

5. Gizzard

- The gizzard is also called the ventriculus.
- The gizzard contains well-developed musculature and functions by grinding and contacting to aid in the mechanical reduction of food particles.
- The gizzard may contain small pebbles or gravel from foraging to aid in the reduction of food particle size.

6. Small Intestine

- After passing the gizzard and being reduced to the proper particle size, food enters the small intestine for further digestion and absorption.
- There are three regions of the small intestine:
 - Duodenum**
 - Jejunum**
 - Ileum**
- The small intestine has a very large absorptive area due to many folds and finger-like projections located along its length.

7. Ceca

- a. Poultry have two **ceca**, while mammals have one (appendix).
- b. The ceca are two dead-end pouches that contain microbes.
- c. The microbes ferment any leftover food particles and produce molecules that the bird can use as an energy source.

8. Colon

- a. Also referred to as the large intestine.
- b. This is a short section of the digestive tract that starts after the ceca and ends at the **cloaca**.
- c. The function of the colon is to absorb water.

9. Cloaca

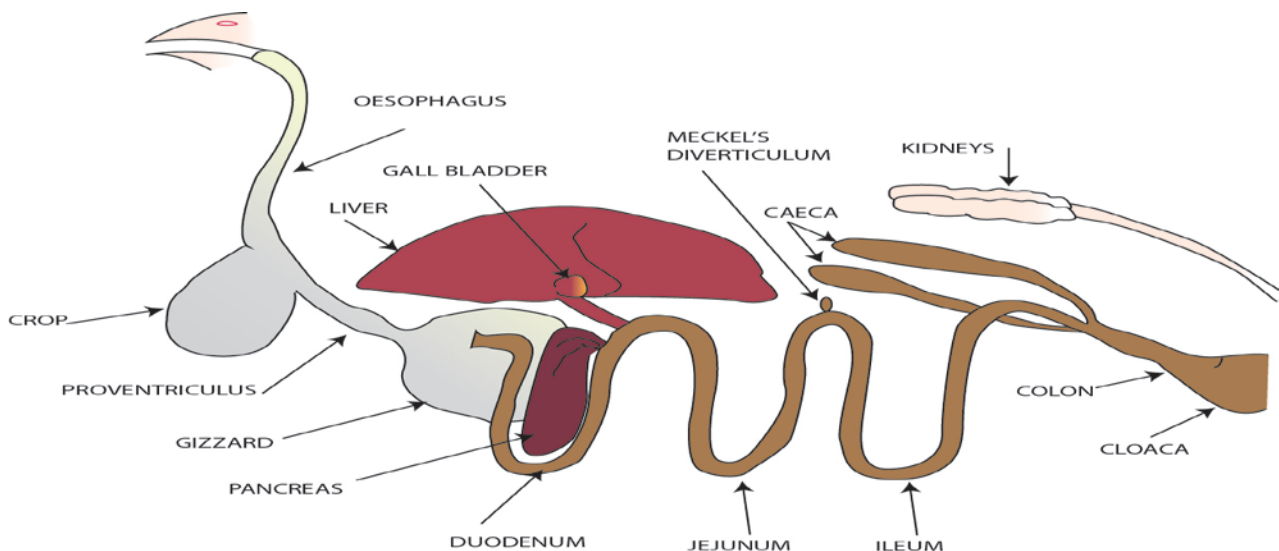
- a. This is also known as the vestibule and is the chamber responsible for the expulsion of feces and urine.

10. Liver

- a. The liver is an accessory organ of the digestive system.
- b. The liver produces a substance called **bile**, which helps to digest fats. Bile is stored in the gall bladder.

11. Pancreas

- a. The pancreas is an accessory organ of the digestive system.
- b. This is a yellow organ located in the loop of the duodenum.
- c. The pancreas produces digestive enzymes that are released into the small intestine to help digest protein and carbohydrate.
- d. The pancreas produces the hormones insulin and glucagon, which work together to control blood-sugar level.



DIGESTIVE ENZYME ACTIVITY

Location	ph	Enzyme	Substrate	Product
Mouth	7.0-7.5	Saliva (Amylase)	Lubricates feed Starch Dextrin	Dextrin Glucose
Crop	4.5	Mucus	Softens feed	
Gizzard and Proventriculus	2.5	HCL	Lower digesta pH, initiates protein cleavage	
		Pepsin	proteins	Polypeptides
		Lipase	triglyceride	Fatty acids, monoglycerides
Duodenum	6.0-6.8	Amylase	Starch, dextrin	Maltose, glucose
		Trypsin, chymotrypsin and esterase	Proteins, peptides	Peptides and amino acids
		Carboxypeptidases collagenase	Peptides collagen	Amino acids, peptides