

**University of Diyala**  
**College of Vet. Medicine**  
**Department of Anatomy and Histology**  
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# **Anatomy of Digestive system (3)**

**Assistant Prof.Dr.**  
**Khalid Ibrahim**

# **Anatomy of Tongue**

## **Tongue:-**

It is a musculo-membranous mobile organ located in the floor of mouth cavity and it is fill the mouth cavity proper

# Parts of Tongue:

1. **Root (radix):-** it is a caudal part of tongue which is attached with lingual process of the hyoid bone and attached with soft palate by palatoglossal arch. It is thick and has **3** surfaces (dorsal and two lateral surfaces).

Dorsal surface is the only surface which is free and called *dorsum*.

2. **Body:-** is a middle part of tongue which has dorsal surface (dorsum), and the two lateral surfaces.

3. Apex or (tip) or (free part):- It is a free part of the tongue, which has ventral and dorsal surfaces, and has lateral borders. The mucous membrane that covering the tip of the tongue extend from the ventral surface of the tongue to the floor of mouth cavity and attached with it by a fold called *frenulum*.

# The tongue consists from the following structures :

1. Intrinsic muscles:- these muscles are formed the substance of tongue and directed in longitudinal, transverse and oblique directions.
2. Extrinsic muscles:- these muscles are originated or inserted in the tongue.
3. Mucous membrane of the mouth cavity which is covered the tongue has two types of papillae:

## Types of Papillae on the Tongue

### **1. Mechanical papillae:**

- a) Lenticular papillae.
- b) Conical papillae.
- c) Filiform papillae.

### **2. Gustatory papillae:**

- a) Fungiform papillae.
- b) Vallate papillae.
- c) Foliate papillae.

- Blood supply of the tongue:

1. Lingual artery.
2. Sublingual artery.

- Veins of the tongue:

1. Lingual vein.
2. Maxillary vein.

- Lymphatic vessels of the tongue:

All lymphatic vessels of the tongue are going to the retropharyngeal lymph center (medial and lateral).



- **NERVES SUPPLY OF TONGUE:**

1. Lingual nerve (branch from trigeminal N.): sensory nerve for pain, temperature (all parts of tongue).
2. Glossopharyngeal: sensory nerve which supplies the caudal third (1/3) of the tongue.
3. Hypoglossal: it is motor and supply the intrinsic muscles of tongue.
4. Chorda timpani: this is branching from the facial nerve. It is sensory for the cranial two third (2/3) of the tongue.

# Comparative of the tongue:

## 1. Horse.

a) Shape:- spatula like.

b) C.S.:- there is cord like structure made from fibrous connective tissue.

c) M.M.:- has only four types of papillae.

1. Filiform papillae:- they are fine, threads like projection present in dorsum and the sides of the tip.

2. Fungiform papillae:- they are large papillae present mainly on the lateral side of tip and also few numbers in dorsum.

3. Vallate papillae:- usually they are only 2-3 large papillae present in caudal part of the dorsum.

4. Foliate papillae:- is about 1.5-2 cm present just cranial to palatoglossal arch on each side of tongue.

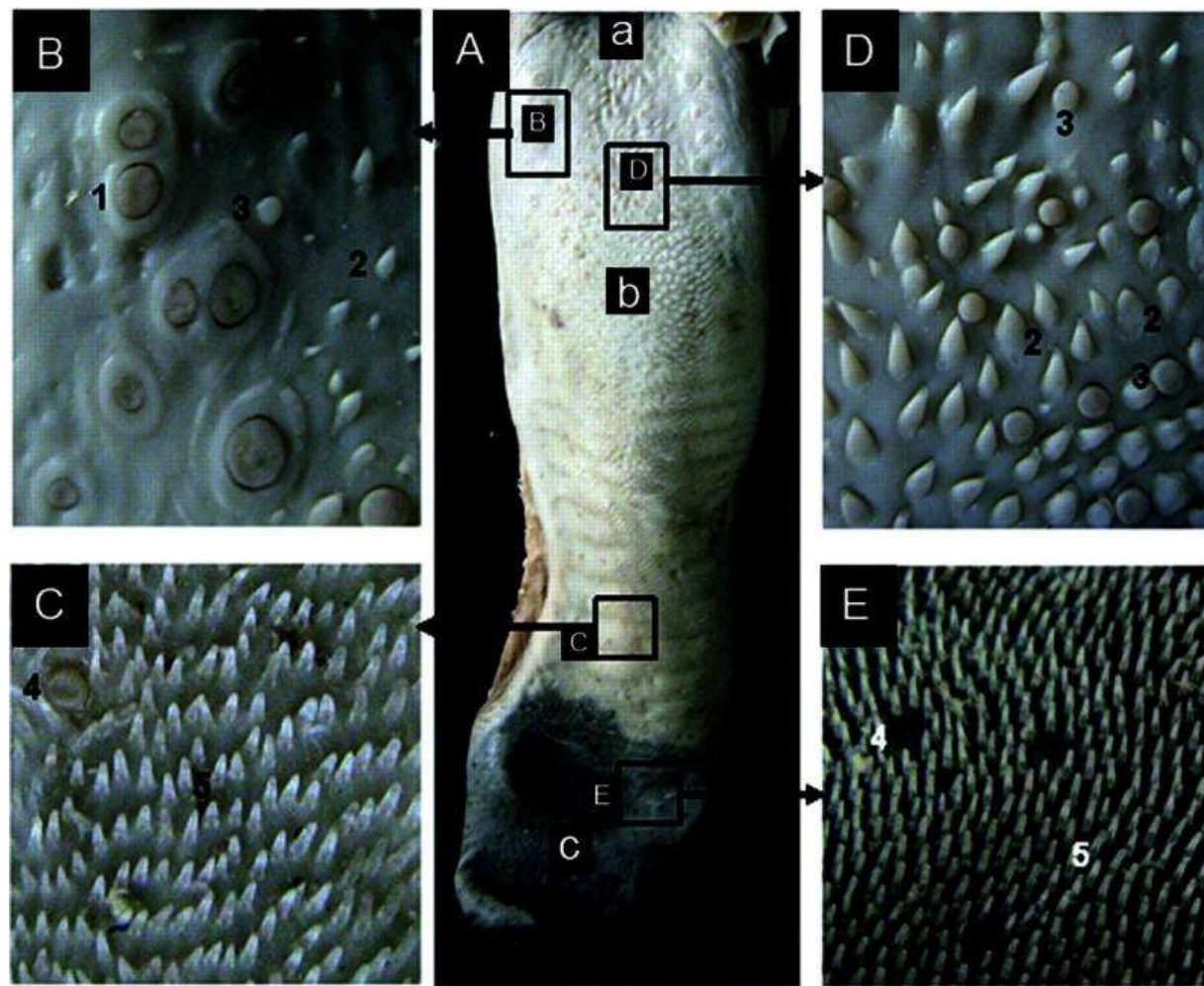
1.

## 2- Ruminant

- a) **Shape**:- the root and body are wide and thick, while the tip is pointed. The dorsum has round prominence called (*torus linguae*).
- b) **C.S.**:-similar to that in the horse.
- c) **M.M.**:- has five types of papillae:
1. Filiform papillae:- are long and cornified papillae mainly in the dorsum of the tip. It gives rough surface and present in few numbers on torus linguae.
  2. Fungiform papillae:- are present behind filiform and they are more in number in sheep and goat.
  3. Conical papillae:- are present in dorsum and lateral surfaces. They are long and direct caudally.
  4. Leniticular papillae:- are large and round in shape. They are present mainly in the torus linguae.
  5. Vallate papillae:- large in size in ox and goat, they are about 8-77 in number and irregular rows on each side of the caudal part of dorsum. In sheep they are 18-24 on each side.

Note

:- the foliate are absent in ruminant.



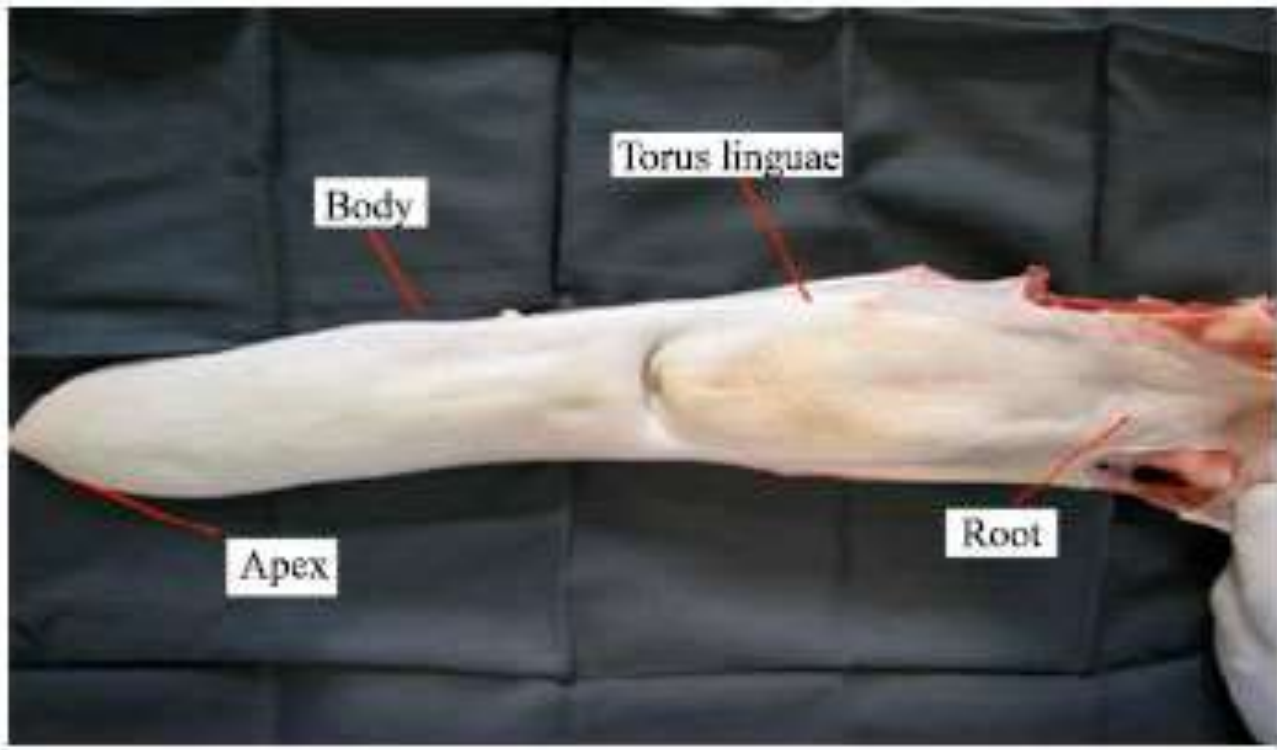
**Figure .**

The tongue of cattle: (A) a, lingual root; b, lingual body; c, lingual apex. (B) 1, vallate papillae; 2, conical papillae; 3, lenticular papillae. (C) 4, fungiform papillae; 5, filiform papillae. (D) 2, conical papillae; 3, lenticular papillae; (E) 4, fungiform papillae; 5, filiform papillae.

### 3. Dog

- a) **Shape**:- wide and thin, has longitudinal groove.
- b) **C.S.**:- has fuseform cord like of cartilage called (lyssa), present in ventral side of the tip.
- c) **M.M.** has five types of papillae:
  1. Filiform papillae:- short, soft and pointed, they are increased in size toward pharynx.
  2. Conical papillae:- soft, long which are directed caudally.
  3. Fungiform papillae:- small and present in the dorsum.
  4. Vallate papillae:- are 2-3 on each side.
  5. Foliate papillae:- are present just cranial to the palatoglossal arch.





Apex

Body

Torus linguae

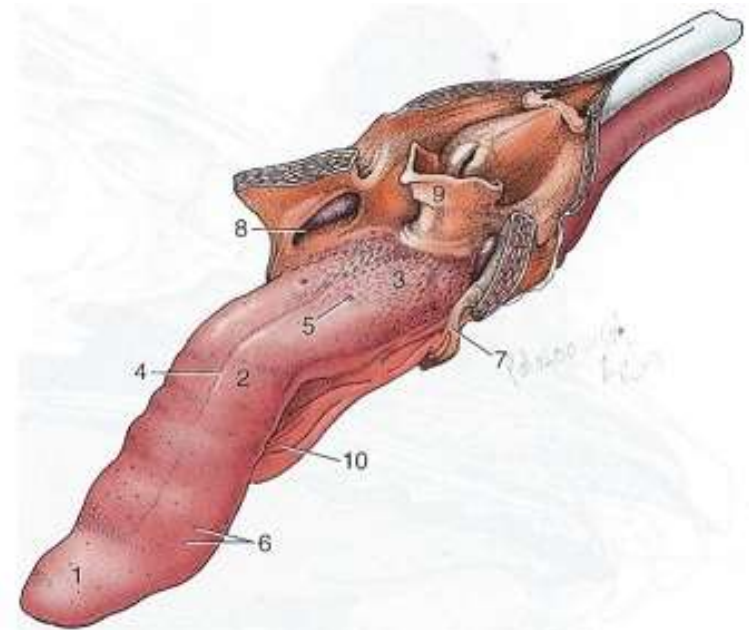
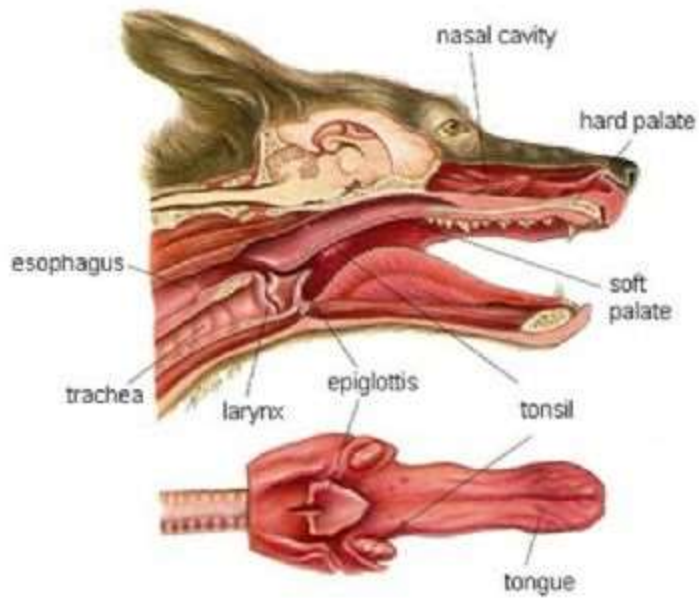
Root

# Bovine Tongue





## mouth



**Figure 3-8** The tongue of the dog. The soft palate and the esophagus are sectioned in the median plane. 1, Apex; 2, body; 3, root, forming floor of oropharynx; 4, median groove; 5, vallate papilla; 6, fungiform papillae; 7, palatoglossal arch; 8, palatine tonsil in tonsillar fossa; 9, epiglottis; 10, frenulum.