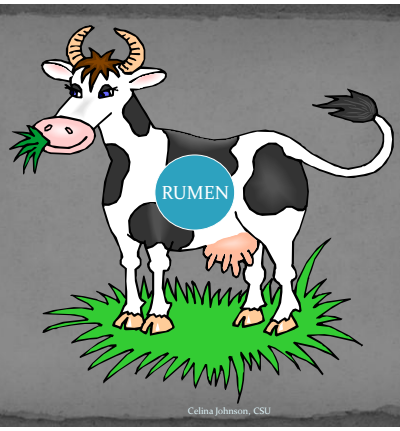
Animal Digestion

Animal Digestion

- Digestion
  - The process of breaking down food material into their various nutrient forms that can be absorbed into the bloodstream
- 2 types of digestive systems
  - Ruminants – multi stomach compartments
  - Non ruminants – single stomach

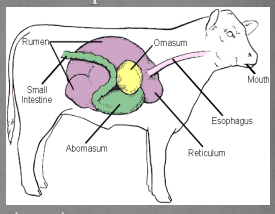
Ruminant Animals

- 4 compartments to stomach
- Ability to get nutrients from forages

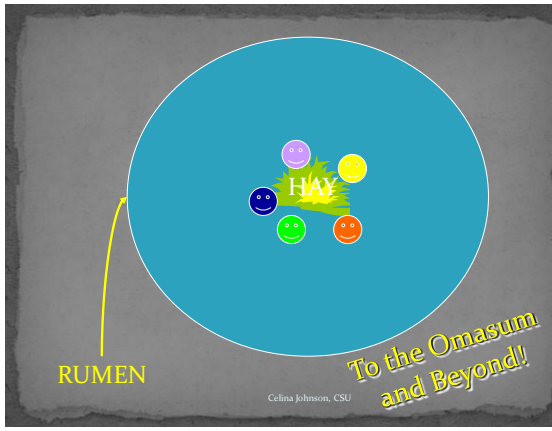


Ruminant stomach compartments

- 1. Reticulum
  - Traps foreign material

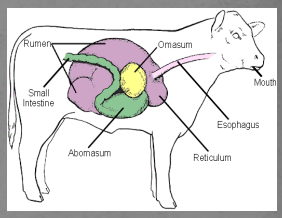


- 2. Rumen
  - Largest of the 4 compartments
  - Microbes digest feeds
  - Animal digests microbes



Ruminant stomach compartments

- 3. Omasum
  - Water absorption
- 4. Abomasum
  - true stomach
  - Similar to yours!
  - Begin digestion of microbes



Non-Ruminant animals

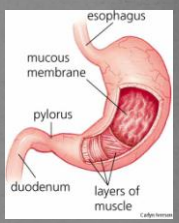
- Most of small animal pets are non ruminant animals
- Humans

The digestive process

- Step 1 – Chewing
  - breaking, tearing, cutting and grinding
  - Saliva is mixed with food
    - saliva contains amylase – digestive enzyme
- Step 2 - Swallowing
  - Esophogus transports food
  - Involutary muscle contractions

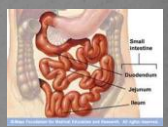
The digestive process

- Step 3 – Stomach
  - Break down food material by muscular movement
  - Secrete digestive juices
    - Begins the breakdown of proteins and fats



The digestive process

- Step 4 – Small intestine
  - Primary site for digestion and absorption of carbohydrates, fats, proteins
  - 3 sections:
    - Duodenum – breaks down fats
      - Enzymes from the Pancreas
      - bile from the liver
    - Jejunum
      - More enzymes complete the breakdown of food
      - Some nutrient absorption
    - Ileum
      - Remaining nutrient absorption

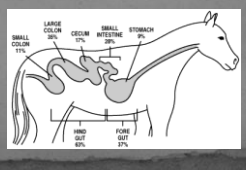


The digestive process

- Step 5 – the large intestine
  - Primary function is to absorb water from the undigested material
  - 3 sections
    - Cecum
    - Colon
    - Rectum
- Step 6
  - Remaining material moves out the anus

Horse and rabbit digestion

- Consume large amount of forage
- Large cecum and colon between small and large intestines
- Bacterial action in cecum
  - Allows for forage digestion
  - Not as efficient as ruminant

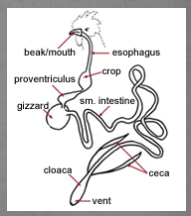


Rabbits

- Coprophagy
  - The act of consuming feces
- Food material is not held in digestive system long enough to absorb all available nutrients
- Allows the digestive system to make full used of the bacteria action of the cecum

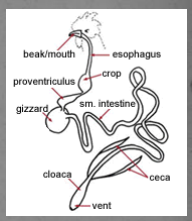
Birds

- No teeth
- Crop
  - Enlargement of the esophogus
  - Storage area for food
- Proventriculus
  - True stomach
  - Enzymes secreted



Birds

- Ventriculus (gizzard)
  - Heavily muscled, lined structure
  - Purpose
    - to grind and crush food before it enters the small intestine
  - Grit = crushed rock to aid in grinding



Birds

- Ceca
  - Pouches between small and large intestines
  - Some bacteria
  - Very little digestion here
  -
- Cloaca
  - Common junction of a birds digestive, urinary and reproductive systems