

<p>Domestic cats <i>Felis catus</i> African wild cat <i>Felis lybica</i> 60+ breeds of domestic cats Obligate carnivores</p> <p>Dangers of raw Meat/BARF diet: Bird flu (H5N1) - virus <i>Salmonella</i> - bacteria Toxoplasmosis – protist</p> <p>High protein requirements (30% DM basis) Mouse protein = 50-60% DM basis</p> <p>How to convert WM to DM basis How to calculate cat energy requirements (Formula will be provided)</p> <p><u>Taurine</u> (essential amino acid) deficiency: Retinal degeneration, cardiomyopathy, fetal problems</p> <p><u>Arginine</u> (essential amino acid) needed for: Urea cycle – remove excess nitrogen from high protein diet</p> <p>Little utilization of carbohydrates</p> <ul style="list-style-type: none"> - cannot digest lactose - hyperglycemia - no AAFCO recommendation for carbs <p><u>Chronic kidney disease (CKD)</u></p> <ul style="list-style-type: none"> - in 50% or more cats over 10 years old - Tx: more water and diet: reduced protein, high omega-3 fatty acids, low phosphorous, low sodium <p><u>Feline hepatic lipidosis (FHL)</u></p> <ul style="list-style-type: none"> - Fatty liver disease - Due to anorexia - Tx: more water and electrolytes, tube feed special diet 	<p>Cattle <i>Bos taurus</i> Aurochs <i>Bos primigenius</i> Hundreds of breeds Cow, Heifer, Steer, Bull Obligate herbivores</p> <p>Ruminants</p> <ul style="list-style-type: none"> - Rumen - Ruminant (bolus/cud, eructation) <p>Cattle lack cellulase, which breaks apart cellulose (β-1,4 linkage of glucose)</p> <p>Rumen microbes have cellulase, digest cellulose</p> <p>4-chambered stomach: <u>Reticulum</u> (“tripe” or “honeycomb”)</p> <ul style="list-style-type: none"> - Muscular, pushes food up <p><u>Rumen</u></p> <ul style="list-style-type: none"> - Largest stomach compartment - Microbes live there (bacteria > protists > fungi) - Rumen motility helps mix, sort food and saliva (30 gallons per day, contains bicarbonate) - Ruminant stasis causes bloat <p>Tx for bloat: tube or trocar and cannula</p> <ul style="list-style-type: none"> - at paralumbar fossa - bicarbonate if acidic - mineral oil if foamy <p><u>Omasum</u> (“many plies”)</p> <ul style="list-style-type: none"> - for absorption of water, electrolytes, microbial byproducts <p><u>Abomasum</u> (“true stomach”)</p> <ul style="list-style-type: none"> - hydrochloric acid - digests microbes <p>Microbial crude protein (MCP) from digested microbes</p>
---	--

Bacteria = unicellular prokaryotes
Protists = unicellular protists
Fungi = unicellular or multicellular eukaryotes

Volatile Fatty Acids (VFAs) or Short-Chain Fatty Acids (SCFAs) – provide 70-80% of energy requirements of cattle

Acetic acid, propionic acid, butyric acid

Bypass nutrients, ex. bypass protein

Rumensin (monensin sodium)

- defaunation (kills protists)
- more bacteria
- more VFAs, more MCP

Roughage (high-fiber) = more acetate

Concentrate (high-starch) = more propionate

Silage = fermented chopped plant waste

Ketosis

- Hepatic Lipidosis
- Ketones in blood
- Tx: IV glucose

Milk fat depression

- Low acetate
- Tx: roughage

Hypocalcemia (“milk fever”)

- Low blood calcium
- Tx: IV calcium

Hardware disease

- Metal in reticulum/rumen
- Tx: rumenotomy
- Cow magnets