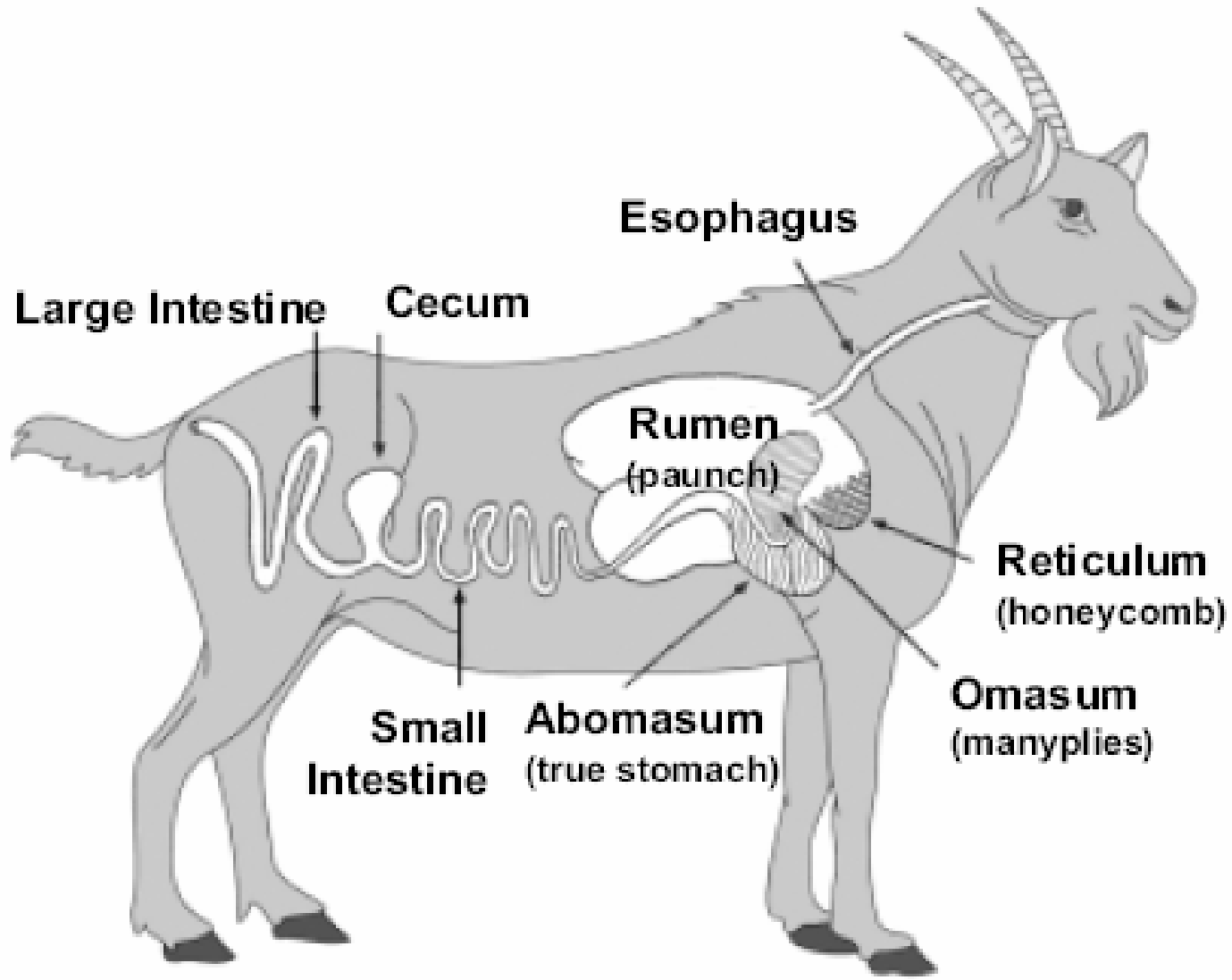


# Nutrition management of goats

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The digestive tract of goats.

# Nutrition management of goats

- Energy : age, body, size, growth, level of activity, pregnancy, lactation, and environment affect the energy requirements of goats.
- Carbohydrates and fats supply most of the energy requirements of the animal body.
- Much of the goat's energy comes from the breakdown of cellulose in roughages and the breakdown of starch and fat in concentrates.

# Nutrition management of goats

- Energy deficiency in goats results in reduced growth or weight loss, reduced reproductive performance, reduced milk or fiber production, and reduced resistance to infectious diseases and internal parasites.

# Nutrition management of goats

- Protein : protein consists of AAs that are the basic units of all body cells. Goats requires protein for growth, reproduction, milk production, disease resistance, and general maintenance.
- Mature goats rely on rumen microorganisms to synthesize essential AAs

# Nutrition management of goats

- Protein deficiencies in the diet of goats result in depleted stores in muscles, retarded fetal development, low birth weights, reduced growth, and depressed milk production

# Nutrition management of goats

- Vitamins : vitamins are organic compounds required in small amounts by the goat's body
- All the B vitamins and vitamin K are synthesized by microorganisms in the rumen, and vitamin C is synthesized in body tissues
- Mature goats require only dietary sources of the fat soluble vitamins A, D, and E.

# Nutrition management of goats

- During the grazing season, goats can obtain sufficient fat-soluble vitamins from green pastures and plenty of sunlight.
- Goats can also store adequate supply of these vitamins to maintain production for 3 to 4 months.



# Nutrition management of goats

- Vitamin A deficiency – abnormal bone development, low resistance to infections, night blindness, birth of abnormal kids
- Vitamin D deficiency – bone abnormalities
- Vitamin E prevents nutritional muscular dystrophy.
- Selenium is also effective in preventing nutritional muscular dystrophy in young kids

# Nutrition management of goats

- Minerals – major macrominerals are common salt (NaCl), Ca, P, Mg, K, and S
- Trace minerals – Co, Cu, Mo, F, I, Fe, Mn, Se, Zn
- In the goat feeding, most minerals are usually added to mixed feeds. It is also recommended that the C : P ratio be kept in approximately 2 : 1

# Nutrition management of goats

- Water – the least expensive nutrient and the largest component of live plant and animal tissue
- Environmental factors, age, growth, pregnancy, lactation, and level of activity affect the water requirements of goats
- Adequate supply of fresh, clean water is critical to goats during their entire life cycle.

# Nutrition management of goats

- Feedstuffs – goats prefer to eat browse (brushy plants) and can efficiently digest coarse, fibrous feeds.
- Goats will consume and effectively utilize a wide variety of woody and weedy plant species found on ranges

# Nutrition management of goats

- Meat goats are raised primarily on unimproved pastures and rangelands
- Meat goats do not need extra feed if they are grazing on land areas with a variety of brush, weeds and grass.
- If pasture or range conditions become adverse and supplemental hay is of poor quality, provide supplemental concentrates for maximum performance.

# Nutrition management of goats

- Cereal grains such as corn, oats, barley, and wheat, are the common energy ingredients of concentrate mixtures of goats.
- Oil meals – cottonseed meal and soybean meal are probably the most widely used sources of protein of goats.
- Commercial supplements containing other nutrients may be preferable

# Nutrition management of goats

- Kids – newborn kids should be allowed to nurse their dams to obtain colostrum (first milk)
- Colostrum contains antibodies that protect young kids against diseases
- Early forage consumption will lead to early rumen development

# Nutrition management of goats

- To encourage young kids to consume solid feed at about 2 to 3 wk of age, fine hay can be offered
- If pasture or range conditions are poor, however, kids should have access to good quality hay plus about 0.75 pounds of a grain mixture daily



# Nutrition management of goats

- Replacements – after 4 to 6 months of age, replacement does and bucks can do well on good pasture or good quality hay alone
- A daily allotment of 0.5 pounds of a concentrate mixture should lead to ample growth
- If the pasture or hay is of poor quality, however, replacement animals may require 1 to 1.5 pounds of concentrate per day.

# Nutrition management of goats

- Does – feeding does during a dry period is important for development of the unborn kids and for obtaining proper body condition of the does for adequate nutrition of the newborn kids
- The unborn kid develops 70% of its birth weight during the dry period (last 6 wk of pregnancy)

# Nutrition management of goats

- If pasture and hay are poor quality, provide supplemental feeds such as goat range cubes at the rate of 0.5 to 0.75 pound per head per day
- A doe should be in good flesh but not fat at time of kidding

# Nutrition management of goats

- Lactating does on good quality range or pasture may require daily supplementation of 0.5 to 0.75 pounds of grain mixture or range cubes that contain approximately 20% protein
- If the quality of range feed is poor, a higher protein supplement may be needed at the rate of 0.25 pound per head per day

# Nutrition management of goats

- Bucks – young bucks should be fed in the same manner as replacement does, but they will require more feed because of their size
- Supplemental grain or concentrates should be fed according to the condition of the pasture and the bucks

# Nutrition management of goats

- During the breeding season, however, grain or supplement should be provided at the rate of 0.3 to 0.5 pound per head per day
- If the buck becomes too fat or inactive, grain can be withdrawn

<b>Feed</b>	<b>TDN, %*</b>
Alfalfa	58
Sorghum sudangrass	56
Bermudagrass	46
Whole shelled corn	90
Oats	77
Whole cottonseed	96
Cottonseed meal	76
Soybean meal	84
Cane molasses	72
*100% dry matter basis.	

**Table 1 Suggested Feeding Rates for MEAT Goats**

<b>Stage</b>	<b>% Protein</b>	<b>Amount Daily (per head)*</b>
<b>Pre-weaning/Creep feed</b>	<b>18%</b>	<b>0.25-0.33 lb</b>
<b>Weanlings</b>	<b>16%</b>	<b>0.5-0.75 lb</b>
<b>Growing/Finishing</b>	<b>14%</b>	<b>1 lb</b>
<b>Flushing (1 month prior to through 1 month after breeding)</b>	<b>14-16%</b>	<b>1-3 lb</b>
<b>Gestation (2<sup>nd</sup>-3<sup>rd</sup> month)</b>	<b>14-16%</b>	<b>0.5-1 lb</b>
<b>Gestation (last 6 weeks)</b>	<b>14-16%</b>	<b>0.75-2 lb</b>
<b>Lactation (avg., single kid)</b>	<b>14-16%</b>	<b>0.75-1.25 lb</b>
<b>Lactation (heavy, twins)</b>	<b>14-16%</b>	<b>2 lb</b>
<b>Replacement does</b>	<b>16%</b>	<b>0.5-1 lb</b>
<b>Billies (adult, non-breeding)</b>	<b>14%</b>	<b>≤0.5 lb</b>

**Provide free-choice access to forage and ensure goats have unlimited supply of clean, fresh water. Provide free-choice mineral supplementation.**

**\*Feeding rate may vary for medicated feed products. Refer to product feeding directions.**



**Table 2 Suggested Feeding Rates for DAIRY Goats**

<b>Stage</b>	<b>% Protein</b>	<b>Amount Daily (per head)</b>
<b>Pre-weaning/starter feed (2 to 4 months)</b>	<b>18%</b>	<b>Free-choice</b>
<b>Growing goats (4 months to 6-8 weeks prior to kidding)</b>	<b>14-16%</b>	<b>1-1.5 lb</b>
<b>Dry does (6-8 weeks prior to kidding)</b>	<b>14-16%</b>	<b>1-2 lb</b>
<b>Lactating does</b>	<b>14-16%</b>	<b>1 lb for each 3 lb of milk produced</b>

**Provide free-choice access to forage and ensure goats have unlimited supply of clean, fresh water. Provide free-choice mineral supplementation.**

<b><u>Animal</u></b>	<b><u>Protein</u></b>	<b><u>Energy</u></b>
Bucks	11% CP	60% TDN
Dry doe	10% CP	55% TDN
Late gestation	11% CP	60% TDN
Lactation (avg. milk)	11% CP	60% TDN
Lactation (high milk)	14% CP	65% TDN
Kid (30 lbs, >.4 lbs/day)	14% CP	68% TDN
Yearlings (60 lbs.)	12% CP	65% TDN

<b><u>Feedstuff</u></b>	<b><u>Protein</u></b>	<b><u>Energy</u></b>
Mature pasture	8% CP	50% TDN
Clover pasture	25% CP	69% TDN
Orchard grass pasture	18% CP	65% TDN
Browse (Honeysuckle)	16% CP	72% TDN
Soybean meal	44% CP	88% TDN
Complete pellets	12% CP	78% TDN
Barley grain	13.5% CP	84% TDN
Corn grain	10% CP	89% TDN
Poor hay	8% CP	50% TDN
Grass hay	12% CP	58% TDN
Mixed hay	15% CP	60% TDN
Legume hay	18% CP	62% TDN

วัตถุดิบ (กก.)	ลูกแพะหลังหย่านม		
	อายุประมาณ 3-7 เดือน		
	สูตร1	สูตร2	สูตร3
ข้าวโพดบด	40	-	-
ปลายข้าว	-	40	-
มันเส้น	-	-	36
รำละเอียด	20	20	25
กากถั่วเหลือง(โปรตีน44%)	8	8	12
กากมะพร้าว	24.5	25.5	19.5
กากเนื้อในเมล็ดปาล์ม	-	-	-
ใบกระถินแห้ง(คุณภาพดี)	5	5	5
กากเต้าหู้แห้ง	-	-	-
ยูเรีย(46-0-0)	-	-	-
กระดูกป่น/ไคแคลเซียมฟอสเฟต	1	1	1
เกลือป่น	1	1	1
แร่ธาตุ+วิตามิน/พรีมิกซ์สำเร็จรูป	0.5	0.5	0.5
กำมะถันผง	-	-	-
รวม	100	100	100

วัตถุดิบ (กก.)	แพะระยะขุนส่งตลาด				
	(อายุประมาณ 7 เดือนขึ้นไป)				
	สูตร1	สูตร2	สูตร3	สูตร4	สูตร5
ข้าวโพดบด	50	-	-	-	-
ปลายข้าว	-	50	-	-	-
มันเส้น	-	-	45	40	45
รำละเอียด	10	10	18	15	16
กากถั่วเหลือง(โปรตีน44%)	-	-	-	-	-
กากมะพร้าว	26.5	26.5	23.5	26.5	-
กากเนื้อในเมล็ดปาล์ม	-	-	-	-	20.5
ใบกระถินแห้ง(คุณภาพดี)	10	10	10	10	10
กากเต้าหู้แห้ง	-	-	-	5	5
ยูเรีย(46-0-0)	1.5	1.5	1.5	1.5	1.5
กระดูกป่น/ไคแคลเซียม ฟอสเฟต	1	1	1	1	1.5
เกลือป่น	0.9	0.9	0.9	0.9	0.9
แร่ธาตุ+วิตามิน/พรีมิกซ์ สำเร็จรูป	-	-	-	-	-
กำมะถันผง	0.1	0.1	0.1	0.1	0.1
รวม	100	100	100	100	100

วัตถุดิบ (กก.)	แม่แพะให้นมลูก			แพะธรรมดาท้องว่าง		
				(อายุเกิน 1 ปีขึ้นไป)		
	สูตร1	สูตร2	สูตร3	สูตร1	สูตร2	สูตร3
ข้าวโพดบด	50	-	-	56.5	-	-
ปลายข้าว	-	-	-	-	-	-
มันเส้น	-	46	45	-	46.5	45.5
รำละเอียด	10	-	-	20	-	-
กากถั่วเหลือง(โปรตีน44%)	-	-	-	-	-	-
กากมะพร้าว	26	25	20	-	20	18
กากเนื้อในเมล็ดปาล์ม	-	-	21	-	-	18
ใบกระถินแห้ง(คุณภาพดี)	10	10	10	15	15	15
กากเต้าหู้แห้ง	-	15	-	5	15	-
ยูเรีย(46-0-0)	1.5	1.5	1.5	1.5	1.5	1.5
กระดูกป่น/ไคแคลเซียมฟอสเฟต	1.5	1.5	1.5	1	1	1
เกลือป่น	0.9	0.9	0.9	0.9	0.9	0.9
แร่ธาตุ+วิตามิน/พรีมิกซ์สำเร็จรูป	-	-	-	-	-	-
กำมะถันผง	0.1	0.1	0.1	0.1	0.1	0.1
รวม	100	100	100	100	100	100