

Introduction

In the Philippines, two of most popular small ruminants are goats and sheep. Both are part of farming in the country. Ruminants — the world ruminant comes from the Latin “ruminare,” which means “to chew over again” — are mammals that are able to acquire nutrients from plant-based food by fermenting it in a specialized stomach prior to digestion, principally through bacterial actions.

Breeds of Goats

- ⊙ Anglo Nubians = 70-90 kgs (and 1-2 liters of milk daily)
- ⊙ Boer = 80-90 kgs ave. (1.5-2 liters of milk daily)
- ⊙ Saanen = 60-70 kgs (1.8 liters of milk daily)
- ⊙ Toggenburg = 50-60 kgs (1.5 liters of milk daily)
- ⊙ Alpine = 50-60 kgs (1.5 liters of milk daily)
- ⊙ Philippine Goat or Common Goat = 20-30 kgs (milk is just enough for its kids)
- ⊙ Didiangas Goat = 40-50 kgs (ave. of 1 li. of milk daily)

Breeds of Sheeps

- ⊙ Meat Sheep Breeds (Cheviot, Dorset, Hampshire, Montadale, etc.)
- ⊙ Long Wool Sheep Breeds (Border Leicester, Coopworth, Cotswold, Lincoln, etc.)
- ⊙ Fine Wool Sheep Breeds (American Cormo, Booroola Merino, Debouillet, Delaine-Merino, etc.)
- ⊙ Dual Purpose Breeds (Miniature Brecknock, Columbia, Corriedale, Panama, etc.)
- ⊙ Hair Sheep Breeds (American Blackbelly, Barbados Blackbelly, California Red, Dorper, etc.)
- ⊙ Minor Sheep Breeds (Black Welsh Mountain, Blueface Leicester, California Variegated Mutant, Icelandic, etc.)

ADVANTAGES OF RAISING GOATS

- ⊙ Goats require smaller capital investment than cattle.
- ⊙ Goats multiply faster than cattle or carabaos. Before a goat is three years old, she can give birth to as many as five kids.
- ⊙ Although a goat is small, she can produce as much four liters of milk everyday if she is pure-bred and is given a ration to meet all of nutritional requirements.
- ⊙ Goats require less feeds than cows and carabaos. About ten native goats can be feed on the feedstuffs sufficient for one cow. And about 6-7 purebred dairy goats can be fed on the feedstuff sufficient for one dairy cow.

- ⊙ Goats are usually docile and can be raised by anyone. Where cows or carabaos may be too large for women or children to handle, the goats is just right size of animals for them to raise.
- ⊙ Goats are friendly and intelligent.
- ⊙ Goats are clean animals. They do not thrive in filthy places. Also, they do not eat rotten or spoiled feeds.
- ⊙ A few can be tethered along farm fences and boundaries or along roads and can be even be confined in pins and given yard clippings and branches or tree and shrubs. A herd can be raised easily on open lands.
- ⊙ Under orchards and coconut plantation, goats are good clippers of weeds.
- ⊙ Goats provide manure for fishponds, farms and gardens.
- ⊙ Farmers, in some cases, can use goats “insurance” against the failure of their crops.
- ⊙ A family milk goat can provide just the right amount of milk for the farm family at very economical price.

ADVANTAGES OF SHEEP FARMING

- ⊙ Multi-faceted utility: meat, wool, skin, manure, and to some extent milk and transport.
- ⊙ The production of wool, meat and manure provides three different sources of income per year.
- ⊙ Since the two major products of sheep (wool & mutton/ meat) are entirely different in their production and utilization, the price of one may not necessarily have a bearing on the other.
- ⊙ A crop of lambs may be marketed from 5-6 months onwards (preferably before one year), bringing rather a quick return.
- ⊙ Most suitable of the small ruminants to utilize the sparse vegetation in dry-land areas through rangeland management & developed (reseeded) pasture.
- ⊙ Unlike goats, sheep hardly damage any tree.
- ⊙ Better adapted to arid & semi-arid tropics with marginal & sub-marginal lands, otherwise unfit for crops, due to their superior water and feed (esp. protein) economy.
- ⊙ Since sheep eat more different type of plants than any other kind of livestock, they can turn waste into profit & at the same time improve the appearance of many farms (i.e. excellent weed destroyer).
- ⊙ Sheep dung is a valuable fertilizer, and since they are grazed on sub-marginal lands, their droppings are the only means of improving the growth of plants in such areas.

Unique Characteristics of Sheep

- ⊙ Strong hard instincts of sheep make them excellent ranch animals as they keep together in tight & easily managed flocks and do not disperse widely all over the available land, which would make it difficult to protect them from predators & difficult to round up.
- ⊙ Excellent ability to survive over a prolonged period of drought and semi-starvation.
- ⊙ Sheep have the ability to produce prime carcasses on roughage alone, thus they are well adapted to many areas unable to produce grain profitability.
- ⊙ The structure of their lips helps them clean grains lost at harvest time, and thus convert waste feed into profitable products.
- ⊙ Less prone to extreme weather conditions, ectoparasites (external-ticks, lice, etc.) as well as other diseases.
- ⊙ Unique, ever-growing fibre which allows ventilation & also protects skin from the hot sun, rain and abrasions.
- ⊙ Sheep can also constrict or relax blood vessels in the face, legs and ear for control of heat loss.
- ⊙ Their visual sense is exceedingly well-developed, they can discern movement far better than humans, but cannot distinguish shapes as well as man.
- ⊙ Sheep do not need expensive buildings to house them.
- ⊙ Sheep require less labor than other kinds of livestock.

Desirable Characteristics of Ruminants for Organic Production

- ⊙ Good teeth.
- ⊙ Good legs and feet.
- ⊙ Good skin and shiny hair.
- ⊙ Normal reproductive parts.

System of Raising Ruminants

- ⊙ Grazing System.
- ⊙ Cut and Carry System (confined).
- ⊙ Goat (or sheep)-Sloping Agricultural Land Technology (SALT) Integration System (SALT 2).

Nutrients Needed in Ruminants' Feed

- ⊙ **Energy.** Most energy required is supplied by carbohydrates and fats found in forage and grain.
- ⊙ **Protein.** This nutrient is essential for growth, repair of old tissues, milk production, and development of unborn kid.

- ⊙ **Minerals.** These are essential for growth and reproduction. These are mostly calcium and phosphorus, which are found chiefly in the skeleton.
- ⊙ **Vitamins.** These are feed nutrients which are needed in very small quantities but which are essential to life.
- ⊙ **Water.** The animal body is 56-70 percent water. Water helps liquefy the nutrients fermented in the digestive process.

Classification of Common Feed Ingredients for Ruminants

- ⊙ **Roughages.** These are feeds containing relatively large amounts of fiber or digestible material (legumes, ipil-ipil, napier, etc.).
- ⊙ **Concentrates.** These are feeds which have a comparatively high digestibility (rice bran, corn bran, bone meal, molasses, etc.).
- ⊙ **Feed Additives.** These are chemical compounds that are included in animal rations but do not supply nutrients to the animals (natural antibacterial/antimicrobial, etc.).
- ⊙ **Mineral Supplements.** The function of mineral elements in goats is to provide structural support for the body (salt, oyster shell, wood ash, CRH, mineral supplements).
- ⊙ **Vitamins' Supplements.** The dietary vitamin requirements of ruminants like goats are relatively simple due to the nature of feeds they ordinarily consume (FFJ, FPJ, OHN, LABS, IMO, etc.).

Some Local Ingredients for Ruminant Feed

- ⊙ **Corn.** This is the most popular grain used for feeds. High in total digestible nutrients, low in fiber, and higher in fat.
- ⊙ **Corn bran.** A by-product of corn milling industry. It consists of broken grains of corn and bran, rich in protein.
- ⊙ **Rice bran.** Called "tiki-tiki", the good quality fine rice bran contains an adequate amount of fat. First class bran contains approximately 11% crude protein.
- ⊙ **Sorghum.** This is very similar to corn in feed value except that it is lower in fat.
- ⊙ **Copra meal.** This is what is left of the coconut meat after the oil has been removed or extracted.
- ⊙ **Soybean oil meal.** This is a by-product after extracting the soybean oil. It contains about 44% crude protein and is also a good source of energy.
- ⊙ **Mungo.** This legume is a human food, it can also be given to goats in place of oil meal.
- ⊙ **Molasses.** This is practically all carbohydrates with only 3% crude protein.
- ⊙ **Ipil-ipil.** As a leaf meal, it contains 21% crude protein.

Pasture and Forage Crops for Ruminants

- ⊙ Grasses
- ⊙ Star grass (6.05% crude protein (CP))
- ⊙ Napier grass (1.57% crude protein)
- ⊙ Para grass (3.00% crude protein)

Legumes

- ⊙ Ipil-ipil (8.0% crude protein)
- ⊙ Calliandra (9.42% crude protein)
- ⊙ Kakawate (6.5% crude protein)
- ⊙ Kadios (5.37% CP)
- ⊙ Flemingia (6.0% CP)
- ⊙ Sesbania (5.65% CP)
- ⊙ Other local species

Feed Formulation for Organic Ruminants

| Component | Source | Percent | Weight |
|---------------|---|------------|--------------------|
| Protein | Fish (whole internal organ, gills, shells) Soybeans, Mungbean, Madre de agua (dried or fresh)) | 22 | 2.2 kgs |
| Lipids/Fats | Coconut meat, Vegetable oil, fish oil | 8 | 0.8 kg (800 gms) |
| Carbohydrates | Rice bran, corn bran, cassava, banana, camote tubers | 65 | 6.5 kgs |
| Vitamins | FFJ, FPJ, OHN, LABS, etc. | 2 | 0.2 (200 gms) |
| Minerals | Salt, Carbonized rice hull, charcoal, dried soil, etc. | 3 | 0.3 kgs (300 grms) |
| Total | | 100 | 10 kgs |

Note: Coconut meat when mixed with feeds has oil which will result to 1st class organic lipids.



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How to Raise Organic Small Ruminants (Goat and Sheep) for Food and Profit

