Goats Much Maligned but Necessary

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Except for the dog, the goat has the widest ecological range of any domestic animal. Goats can cope with a variety of dietary alternatives and they can flourish on forages and feeds, including kitchen refuse, that would otherwise be wasted. Goats are valuable for milk, meat, fiber, and leather and millions of people depend upon them for their livelihood. They are often called the poor man's cow because two does bred at alternate intervals can provide a family with a year-long supply of milk and their small size and relatively low cost makes them available to small farmers who have neither space nor capital for a cow. Their productivities can be astounding. For example, a lifetime record holding doe in Britain produced 16,968 kg (37,330 lb) of milk in 2,966 lactating days, an average of 5.7 kg (12.5 lb) per day. As a general rule, fertility is no problem and twinning or more than one gestation per year is quite common.

In spite of these attributes, the goat is the subject of a world-wide controversy and there are two opposing views about their role in land use. These are best expressed by quotations from two early references regarding the subject. Sir Daniel Hall in delivering the Heath Clark lectures for 1935 at the University of London, said: "The greatest danger, however, lies in the fact that overgrazing may so destroy the vegetation and bare the surface that soil erosion sets in. . . of all livestock the goats are the worst offenders. . . . The brunt of the campaign against overstocking should fall on the goats. . ." (Hall 1936). This view has been echoed by many sources since that time and in many cases goats have been categorically blamed as the cause of deforestation, rangeland destruction, erosion and desertification. Laws have been passed in some countries prohibiting the grazing of goats in certain areas and goat eradication campaigns have even been launched.

At about the same time that Hall was delivering his lectures, Hornby (1936) wrote: "The goat is often referred to as though its depredations exceeded those of other animals. This is not quite fair. The cattle and sheep have created a wilderness of gullies separated by dry ridges bearing nothing in the way of vegetation but the hardiest of shrubs, the cattle and sheep have departed with the last of the grass, the goat still to be found and as he valiantly extracts a livelihood where no other animal can live, he undoubtedly makes yet steeper the sides of gullies, and appears to be doing his best to remove the last of the plants and with them the last of the soil. But in reality, he is merely completing the destruction wrought by sheep, cattle, donkeys and man." This view has also been echoed by others and the goat has been defended on the grounds that the problem of vegetation deterioration does not lie with the goat *per se,* but rather instead with uncontrolled grazing and thus man is the true culprit.

We tend to agree with the latter view. To categorically blame the goat as though it has some special character which brings about vast destruction of pasture and forest resources is considered an unrealistic approach. A more realistic approach is a thorough understanding of the goat so that it can be placed into a rationalized grazing programme. However, the concern over the continued overgrazing with goats is justified. In some areas the appropriate question may be: "What other kind of livestock do we have to graze these lands with when goat pasturage is destroyed?" This stage has already been reached in vast areas of the Near East and now only the camel can survive.

While goats have many characteristics which make them suitable for various kinds of grazing programmes, their relationship with browse utilization deserves special consideration and is given major emphasis here. We have observed in many parts of the world that goats tend to graze woody species more than they do herbaceous ones, especially in respect to specific species. This has been supported by the literature. Wilson (1969) concluded from his review of the literature that goats eat more browse than sheep which in turn eat more than cattle. Edwards (1948) observed in Africa that goats never grazed grasses during the period of shrub leaf flush and Carrera (1969) reported that goats almost exclusively consumed browse in the arid zones of Mexico.

McMaham (1964) observed one goat's grazing behaviour in pastures in Texas with histories of heavy, moderate, light and no grazing use and concluded that browse constituted more than 50% of the annual diet regardless of past grazing use or forage availability. Huss et al. (1970) observed in a

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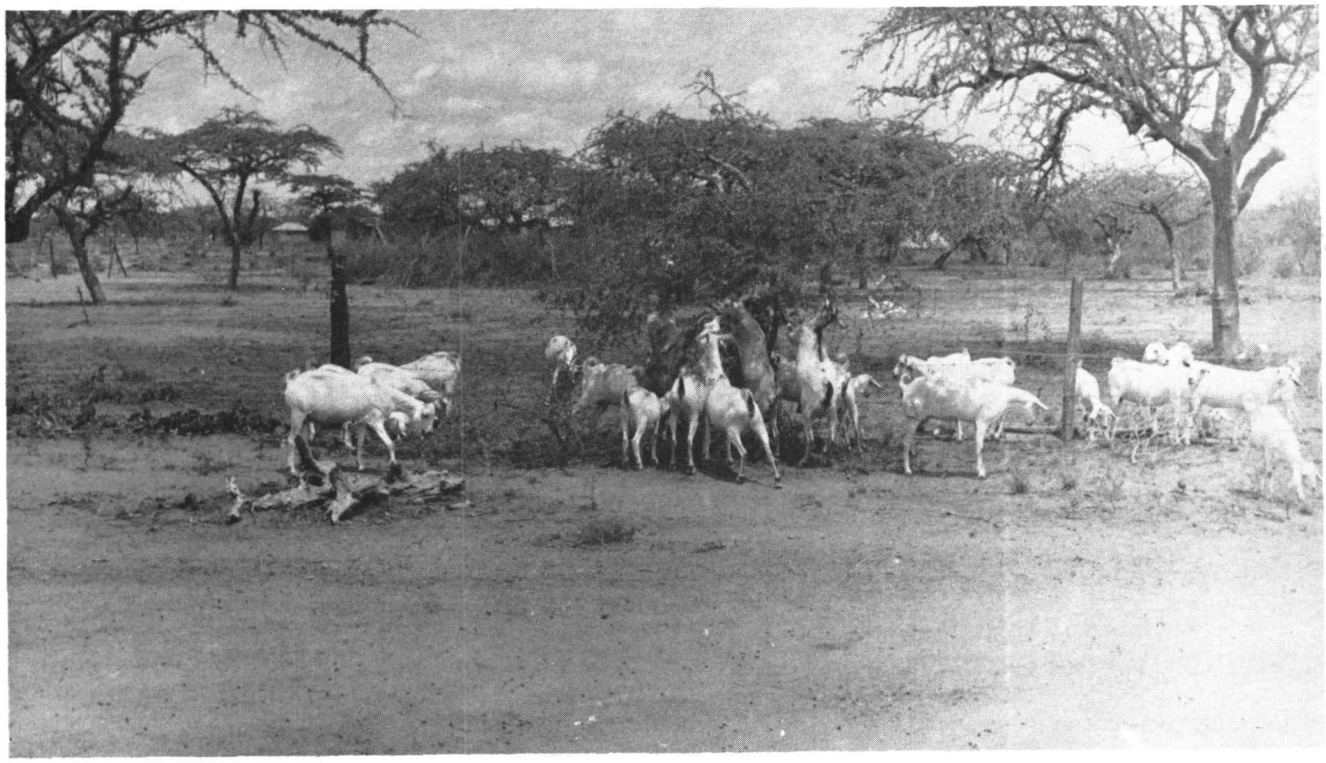

Overgrazing by cattle and sheep has deteriorated this range in Kenya to a state where only the goat can survive, yet the goat is blamed for it all. (Photo by Huss).

study near Montemorelos, Nuevo Leon, Mexico, that goats preferred browse even when exposed to an abundance of palatable grass species.

Why the goat eats browse when other domestic livestock will not is a subject warranting more research. It is possible that this is due to its nutritional requirements as some studies have indicated. On the other hand, it could be due to the character of the goat's mouth. Their mobile upper lips and prehensible tongues permit them to eat tiny leaves of browse, even spiny species, which other animals cannot normally consume. Regardless of the reason or reasons, the fact that goats show a preference for shrubs and can consume many of them is an attribute that can be beneficially exploited.

For example, it has been illustrated the goats can be economically used in brush control programmes which result in improved vegetation composition for cattle and sheep. Magee (1957) made an economic evaluation of 15 ranches that were using goats to control sprouts on cleared land on the Grand Prairie of Texas and he found that they not only prevented or retarded brush regeneration, they paid for the original cost of clearing as well. They have been used to control oak brush on the Edwards Plateau of Texas and they have been successfully used as an adjunct to other brush control methods (roller cutting and burning) in Mexico. In case of the latter, they eliminated the regrowth of some woody species and retarded the regrowth of others without harming the natural regeneration of desirable grasses (Huss et al. 1970). We have also observed that the goat plays an important role in brush control in Tanzania's Masailand. In addition, the small Masai goat provides most of the meat for the local people because their cattle are used only for celebrations, for selling, or for trading for wives.

The small Masai goat helps control brush by preventing its expansion thus helping to maintain cattle pasturage (Photo by Martin).

Based on our experiences in many parts of the world, (U.S., Africa, Near East, and Latin America), we believe that there are many areas where goats need to be used intensively and wisely to control brush, to upgrade the environment, to help prevent both grassland and forest fires, and to increase food production. Some of the areas, for example, are the Chaparral areas of California; oak brushlands of Texas, Oklahoma, and the mountain states; the brushlands of Mexico and Latin America including the wet tropics; the Sahel and Sudanian regions of Africa and the East African bush.

The use of goats would likely be a more effective and economical alternative for the control of many brush species than either chemical or mechanical methods. Their use would definitely require less energy and they would not present a pollution problem. Moreover, they would produce consumable products in the interim which, in light of the world's ever increasing demand for food, is a noble contribution in itself.

There is an urgent need for more studies regarding

managerial procedures required for controlling brush with goats as well as ways and means for obtaining maximum milk and meat production during the process. Yes, goats have been much maligned but they are very necessary.

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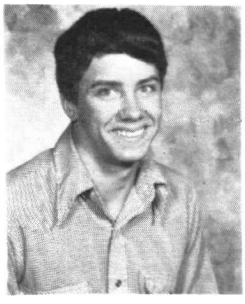
The Range Cow: An Energy Efficient Food Producer

Reeves Brown



As our supply of fossil fuel continues to decrease and prices soar at an ever increasing rate, only the energy efficient will emerge to survive in today's world. One of the most energy efficient producers that we have is the range cow. With her ability to convert forage and roughage into food, she is an efficient user of much of our rangeland. Besides providing us with a source of highly nutritious food, the range cow supplies hides, the source of many leather goods in use every day. She also provides numerous other by-products used by our society such as insulin, soap, glue, china, hairbrushes, and violin strings.

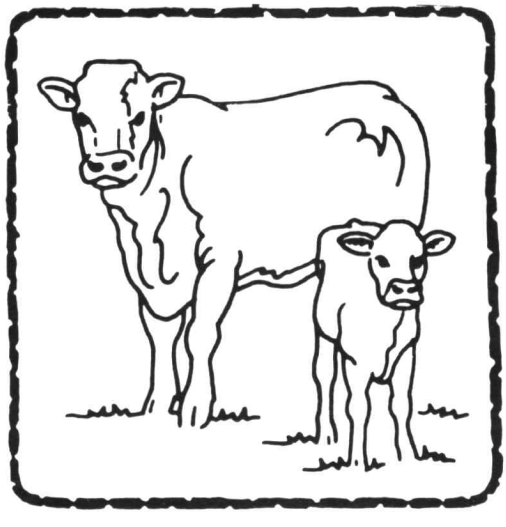
It is true that the range cow is a source of numerous goods but one may ask, "Is she truly energy efficient?" Let's take a close look at her: Her average life span covers about 12 years. Most of her days are spent grazing the rangeland. Her lifetime work is raising about ten calves.

With proper livestock management, she will give birth to a calf every spring. The following 6 months each year, the cow will nurse and look after the calf while it gains about 2 pounds every day. Come October the cow will have produced approximately 500 pounds of calf. Mother range cow repeats this production cycle over again and again, then usually ends up as hamburger, steak, and roasts herself when her productive life is over.

For every range cow, this adds up to over 3,000 pounds of beef for our dinner tables plus the hides and other discards used by the clothing and medical industries. Fresh beef continues as the top sales item in grocery stores accounting for over $16 billion or about nine percent of all grocery store sales in 1979. Well over $30 billion worth of beef was consumed in the United States in 1979.

This transformation calls for very little fossil fuel directly assignable to the range cow. During those 12 years the cow travels about on her own four, converting grass into milk, meat, and hide. The rancher looks after these mobile grass harvesters with little expended energy from fossil fuel. Most herding and doctoring is done on horseback. The horse eats the same grass and drinks the same water as does the range cow. About the only fossil fuel expended directly to the range cow is that used in providing her hay for a few months during the winter (Montana) and for truck transportation when she heads for market. In many cases she trails to market as in the past.

In order to get the maximum and most economical production of red meat from the range cow, we will have to use our range resource more wisely. Let's take a close look at this land base called rangeland.



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