Tether-Grazing Goats in Tanzania

Traditional goat tethering practices in Tanzania are described and their effect on the performance of local and cross-bred dairy goats was measured. Also, modified methods were tested and the impact of tethering on the environment was assessed. This information will be useful to smallholder producers in East Africa who are being encouraged to produce milk from goats but have limited land on which goats can graze without risking damage to crops.

Background

The use of goats for producing milk is being encouraged on resource-poor smallholdings in densely populated areas of Tanzania. Also, greater integration of crop and animal agriculture is being promoted to achieve economic and environmental sustainability of small farms. For successful integration, it is essential to be able to control the movement of animals during grazing to prevent crop damage. Tethering of animals is commonly used on smallholdings during the cropping season. Although widely practised in poorer countries, little is known about tethering and its implications for animal productivity and the farming system as a whole.

Research highlights

Tethering of goats has increased in recent years mainly because more children are now attending school and less time is available for herding. A wide variety of tethering methods was used throughout the study area. Some goat keepers tethered their goats at pasture for only short periods of the day, insisting that their animals compensate by eating faster. It is common practice for animals to be tethered at the same grazing spot for several days; water is not normally provided at the tethering site. Researchers are concerned that this common practice compromises productivity and welfare and has a negative impact upon the vegetation cover.

Halving the tethering period of goats from eight to four hours per day increased the proportion of time spent grazing. Despite this, the goats which graze for four hours ingested less pasture (forage). This is why reduced grazing time lowered milk yields by 20%. In other studies, shortening the tether rope increased the number of tethering locations per unit area but it had no effect on forage intake or milk yields.

On comparing forage intake levels of local and cross-bred goats tether-grazed for eight hours, it was found that local goats ate more. The local goats are better adapted to tether-grazing and lost less weight in the dry season compared with cross-bred goats. Goats that are tethered at the same location each day need to spend more time grazing to compensate for falling pasture quantity. By day four, goats were spending 85% of the time grazing compared to 60% on day one. By day seven this fell back to 60% as pasture became severely depleted (see graph overleaf). Seven-day grazing on the same tethering site compromises pasture re-growth more than one or four days' tethering. Prolonged grazing on one patch should be avoided to prevent pasture loss that could result in increased soil erosion. This negative effect may to

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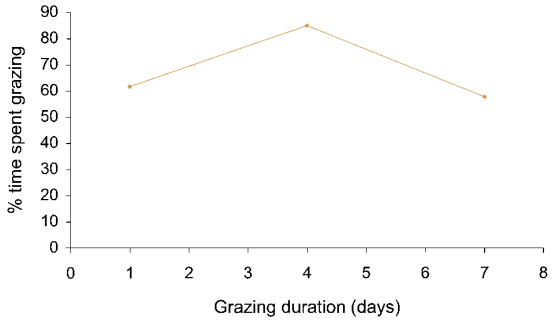
Sheep and goats are crucial to poor people's livelihoods but must be controlled to prevent crop damage in intensively cultivated areas.



The longer a goat is grazed on one spot the more time it spends grazing – after four days the pasture is depleted and time invested in eating declines.

some extent be countered by the increase in fertility of the soil from goat excreta.

Uptake

Project findings suggest that minor modifications to an existing practice could have a marked impact upon productivity and welfare. Extension messages include: (a) tethering goats to graze as long as possible each day in order to maximise production; (b) moving tethering sites at least every third day but preferably every day; (c) tying goats by the neck – not by the leg – on tethers 2.5 m long. An extension booklet, which advises farmers on this and other aspects of tethered-goat management, has been prepared and has been delivered to farming communities in Kenya.

There has been a recent rise in interest in dairy goats amongst smallholder producers throughout East Africa following promotion by bilateral donors and NGOs such as NORAD (Norwegian Agency for Development Cooperation), FARM-Africa and Heifer Project International (HPI). The information generated by this project will be beneficial to 'newcomers' to dairy goat enterprises. Project recommendations do not require any major capital or labour investments and are therefore entirely suitable for poor farmers.

Linkages

Scientific papers and presentations to the research community have promoted project findings both internationally and throughout the East African region. Sokoine University of Agriculture (SUA) has followed up this area of research, and several MSc theses and BSc final year project studies have been completed on goat tethering. SUA is also the management entity for the Tanzanian Goat Network (TAGONET) which has published the findings of these other studies.

Promotional activities by FARM-Africa and HPI continue to expand in East Africa as demand for animals increases. Reduced farm size and growing demand for goat products fuel this phenomenon. This project has developed an effective cadre of scientists in the region who can respond to the needs of dairy goat development projects and their clientele of smallholder farmers.

Relevance to sustainable livelihoods

Small ruminants make a substantial contribution to the livelihoods of the poorest and most vulnerable rural people, particularly women. Keeping sheep and goats in areas where crop farming leaves little room for grazing is problematic because animals can damage growing crops. This research provides poor people with techniques for humane and productive goat-keeping that also present little risk to crop farmers. Furthermore, implementation of the findings will have positive effects on livelihoods – requiring no capital, yet improving pasture sustainability and milk yield and reducing child labour for herding.

Selected project publications

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- Romney, D.L., Sendalo, D.S.C., Owen, E., Mtenga, L.A., Penning, P.D., Mayes, R.W. and Hendy, C.R.C. (1996) Effects of tethering management on feed intake and behaviour of Tanzanian goats. *Small Ruminant Research*, **19**: 113–120.

- Tanner, J.C. and Bain, R. (2000) Tethered goats, less work. Wambui finds out..... Booklet. 6000 copies. 12 pp. Development Communications Ltd., Nairobi.

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