Ceylon Cocon. Q. (1972) 23, 100-102
Printed in Ceylon.

SHEEP BREEDING AND MANAGEMENT UNDER COCONUT IN CEYLON[1]

M. E. PERERA
Department of Agriculture,
Peradeniya, Ceylon

Surveys conducted hitherto indicate that vast potentialities exist in the coconut growing areas of Ceylon for expanding the dairy industry and the establishment of a sheep industry for the production of mutton based on grass land farming under coconut. The coconut growing areas according to the annual precipitation could be divided into two distinct zones namely:

(*a*) The Wet zone coconut growing areas
(referred to as the wet zone coconut triangle)

(*b*) The intermediate zone.

Areas coming under the former classification fall within the 75″ rainfall isohyet and is below the 500 feet contour. This area offers continuous natural grazing under coconut with the least degree of competition between the main coconut crop and established improved grass as a intercrop for moisture and plant nutrients and has been recommended for expanding the dairy industry.

The latter area referred to as the intermediate zone falling below the 75″ rainfall isohyet shows a bimodial pattern of grass production during the year and is considered to be better suited for sheep production (4).

The total area under coconut in Ceylon embracing both these zones is estimated at 1.152 million acres with about 0.9 million acres coming within the 75″ rainfall isohyet and a little over 120,000 acres falling outside the 75″ rainfall isohyet (Intermediate zone) and considered to be suitable for mutton production using sheep on pasture under coconut (6). The coconut holdings vary from less than 20 acres (64.3 per cent of the total extent) to over 50 acres holdings (26.8 per cent of the total extent). However holdings between 20-50 acres amount to about 8.9 per cent of the total extent.

It is estimated that if sheep development is continued in the coconut belt falling within the intermediate zone (60″ to 75″) rainfall over 500,000 sheep could be raised to produce at least around 14.0 million pounds of mutton per annum which in fact is close to the estimated minimum demand figure for mutton in 1968 (14.7 million lbs.) based on corrected Consumer Finance Survey figures (6).

Pastures

Several tropical exotic grasses and legumes have been successfully tried and recommended for growing under coconut. They are as follows:

(*a*) *Brachiaria miliiformis*
(*b*) *Panicum maximum*
(*c*) *Brachiaria brizantha*

Legumes:

(*a*) *Pueraria phaseoloides* (Tropical Kudzu)
(*b*) *Controsema pubescens*

1. Reproduced from Animal Production and Health Bulletin. 1970. Vol. 4 No. 2.

Of these species of grasses *Brachiaria miliiformis* is claimed to be the best exotic grass available at the moment for pasture development under coconut (3 and 5). In fact in trials with all these grasses under coconut it has been observed that *Brachiaria miliiformis* depressed coconut yields least under conditions of competition amongst the association and gave the highest coconut yields under optimum levels of moisture and soil nutrients (3). The recommended legumes do not appear to perform satisfactorily in a mixed sward due to such factors as differences in the habit and rate of growth, their aggressiveness and the high selectivity phenomenon operating under grazing conditions. Therefore the indications are that legumes may have to be grown as pure stands either as intermittent strips or in separate blocks. However considerable research still remains to be done in such aspects as the need for Rhizobium inocula nitrogen fixation by legumes under coconut, compatibility of the above legumes with improved grasses under grazing conditions, the management of mixed swards under coconut, and stocking rates on the different grasses and their associations under coconut.

Stocking rate

Although very little work has hitherto been done on the stocking rate under coconut, based on dry matter yields, it is estimated to be around 5-8 ewes to the acre. Appadurai (1) confirms work done at the Coconut Research Institute and has shown the possibility of obtaining over 8000 lbs. of dry matter per acre per annum from Brachiaria pasture. Several sheep units established under coconut in recent times have shown that a *Brachiaria miliiformis* pasture is capable of carrying at least 4 ewes to the acre.

Breeding

The sheep population in the country, which consists largely of the Jaffna breed, is found in the North of Ceylon and is estimated be around 25,000 head. These sheep are being mainly kept for manuring such crops as tobacco and vegetables. The Jaffna ewe, due both to the small herd numbers and to the poor quality of the animal, will not make a suitable foundation stock for the purpose of crossbreeding. It is therefore necessary to use some of the larger Indian breeds for the starting point of an improvement programme. Several of these breeds such as the Red Madras, Merchein, Barnur and Bikeneri have already been imported and tried out under coconut by new sheep breeders.

These breeds are being successfully raised on several coconut properties. Many sheep breeders are now crossing these Indian and local types of sheep with such temperate breeds as the Wiltshire Horn, Southdown and Dorset Horn. The results obtained appear to be very promissing. The weight of one year ewe hogget of the Jaffna breed is around 40-45 lbs. as compared to 60 lbs. for the imported Indian breeds, for the same age. Crosses between these and temperate breeds such as Southdowns, Wiltshire Horns, or Dorset Horns, have given weights ranging from 70-80 lbs. as one year old ewe hoggets. The average lambing percentages of about 60-70 per cent among local and Indian sheep have been raised to 80-100 per cent through cross breeding in some properties.

Management

(*a*) *Pasture*

The pasture growth in the intermediate zone is bimodial and is distinctly seasonal proving a large surplus of herbage during the North East monsoon (November to January) followed by a short phase (February to March) of a slightly low herbage production. During the South West Monsoon, rains (April to June) the herbage production leaps again and is followed by a relatively long drought phase of scanty and poor quality herbage during the month of July stretching in some instances to almost October.

This bimodial pattern of herbage growth necessitates pasture conservation in the form of hay and silage during periods of plenty to be used in periods of want.

(*b*) *Stock*

To ensure conservation of herbage, control of parasites such as the stomach worm and for the maximum utilization of pasture, rotational grazing of sheep under coconut appears to be necessary. Since dividing coconut properties into smaller paddocks for rotational grazing may be a disadvantage from the point of view of harvesting and transporting coconuts, strip grazing using such devices as electric fences may be more feasible. It may only be necessary to have a few paddocks in a coconut property divided by permanent fences and those paddocks strip grazed for maximum utilization of pasture.

Housing

One of the major problems, particularly during the North East monsoon rains between November to December, could be one of housing sheep against continuous wet weather with intermittent non-rainy days. Shelter in the form of an open "thatched shed" in each paddock could provide the sheep with all the protection against wet weather.

Shearing

In preparation for the wet weather it seems necessary to shear the sheep twice during the year once in September before the North East monsoon rains when they can also be wormed and a second time in March just before the outset of the South West monsoons.

Lambing

Rams may be put in July-August so that seasonal lambing may occur during January to February after the heavy North East monsoon rains when there is still green feed available for the ewe mothers to produce milk to fatten their lambs. Further, the lighter rains during the South West Monsoons in April-May would provide more herbage feed for the ewe mothers to produce milk to fatten the lambs in preparation for a long dry spell from July to around October.

In conclusion it must be stated that at the present time sheep breeding in coconut properties of Ceylon is still in its infancy and requires much streamlining with respect to both pasture and stock management for maximum mutton production. Intensive research with respect to pasture production, sheep breeding and husbandry under coconut needs to be carried out concurrently with the development of this new industry in Ceylon.

REFERENCES

1. Appadurai, R. R.—1968—*Grassland farming in Ceylon*, Ceylon: Godamune and Sons Ltd.
2. Santhirasegaram, K.—1965. *J. Natn. Agric. Sec. Ceylon.* Vol. 2, 2.
3. Santhirasegaram, K. 1967—*Ceylon Cocon. Plrs. Rev.* 5, 12.
4. De Silva, Earle C, 1968—*A Strategy for a programme of Dairy Development in the wet zone Coconut Triangle of Ceylon* (Mimeo).
5. *Lealet. Cocon. Res. Inst. Ceylon No.* 45, Second Edition, July 1966.
6. Working Group on Animal Husbandry—*Agricultural Plan* 1971-77, Programme 94-96 (mimeo).