

ROTATIONAL GRAZING UNDER COCONUTS

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THE estate, over one thousand acres in extent, is situated at Giriulla (North Western Province) where the annual rainfall is between 75 inches and 100 inches and is monsoonal in character. The estate includes two steep hills both over 500 feet in height, some gently undulating land and a valley. The soil consists mainly of sandy quartz with very little top soil, except in the valley.

The herd consists mainly of Sinhala cattle, belonging to the villagers and the estate labour force, together with two pure-bred Scindhi bulls, supplied by the Department of Agriculture. Each animal admitted to the estate is given a distinguishing disc and has to move with the herd. The animals may be left out on the estate for the night or they may be removed by their owners for milking or washing-down.

The pasture consists of indigenous grasses, herbs and legumes which grow in the shade of the palms. The following grasses occur naturally :—

Asconopous compressus—(Pottu thanakola, S.) Carpet grass.

Chrysopogon aciculatus—(Tuttiri, S.) Love grass.

Eleusine indica—(Bala thana, S.) Wild kurrakkan.

Cynodon dactylon—Doob or Bermuda grass.

Of these, carpet grass is the predominant growth.

The legumes present include :—

Alysicarpus vaginalis—(Asvenna, S.)

Desmodium spp.—(Undupihili, S.)

and also creeping covers like, *Calapogonium mucunoides*, *Pueraria phasilloides* and *Centrosema pubescens*. The last is consumed by cattle but without relish. If they are not forced to eat and keep them under control, the palms will suffer.

Every six months, the pastures are cleaned up by selective weeding and undesirable weeds such as the following are removed :—

Bidens pilosa—(Katunerrenchi, S.)

Imperata cylindrica—(Illuk, S.)

Mimosa pudica—Sensitive plant.

METHOD OF GRAZING

In free-ranging, the animals graze selectively, that is they eat only the most palatable herbage and are constantly moving on. The result is the coarser and less-relished herbage remains untouched, and these plants, growing stronger and larger, eventually become dominant. The coconut palms suffer from competition with these large shrubby growths for plant food and soil moisture, and the pasture gradually degenerates until it is almost useless for grazing, as there is very little pasture grass remaining.

Controlled grazing is therefore the rule. Each of the animals is separately tethered to individual palms with a rope allowance equal to the distance between the palms,—26 feet. Each square of 4 palms is thus evenly grazed down to 4 inches, after which the animal is moved on to another palm.

The estate is divided into six blocks, enclosed with barbed wire and with gates giving access from block to block. Each block is about 150 acres in extent and these are grazed in regular rotation. The pasture in each block or paddock is, as previously stated, grazed down to about 4 inches after which the animals are moved into the next paddock.

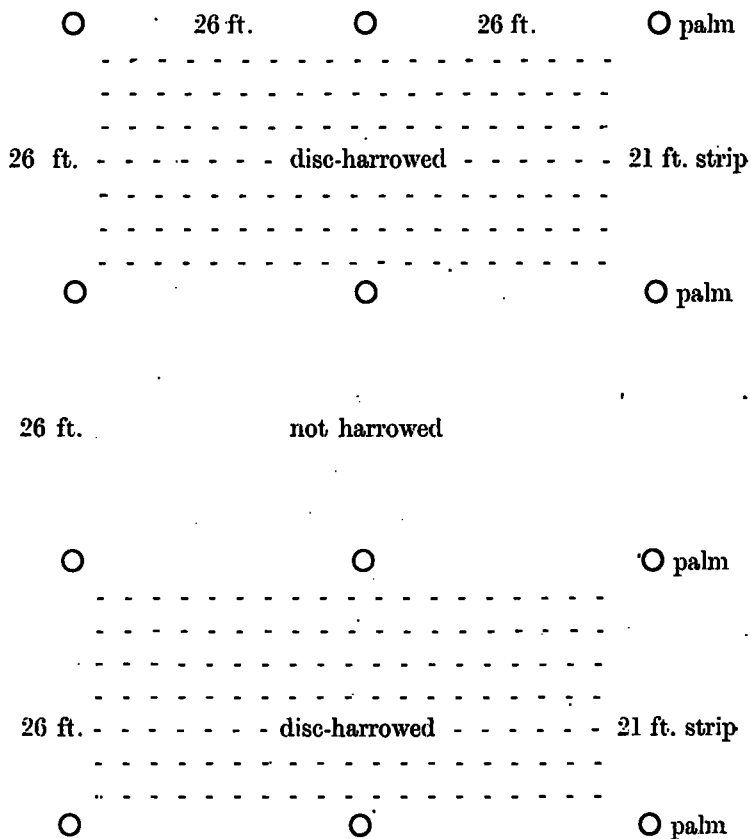
The rate of movement from paddock to paddock varies according to season. In the dry season, the animals are confined in a paddock for about 10 days or a fortnight but with the onset of the rains, there is a vigorous growth of new grass and the period of stay is increased to a month. On average, it has been found that 10 cattle will reduce about an acre of grassland a day; the overall allowance is 6 acres per animal. (Ceylon average 2 acres per animal.)

The coconuts are manured not only by the droppings of the cattle but also by the application of artificial fertilisers, but the latter are applied not only to feed the palms but also to improve the pasture. For this reason, the practice of circle-manuring is not followed here; instead the manurial mixture is applied in broad strips in alternate lanes, each year.

METHOD OF MANURING

Coconuts, planted 26 feet apart

Strips, 21 feet broad



The manure is incorporated into the soil by means of a tractor-drawn disc harrow, immediately after the cattle have left the area, *i.e.*, when the grass is short. The manurial mixture is broadcast along the strips before harrowing, and after harrowing the broken ground is covered with a mulch of coconut fronds to prevent soil wash on these hilly lands.

It is obvious that the herbage benefits from the manure applied to the palms, and from the droppings of the cattle. The pastures are harrowed once a year and any other cultivation operations done with a view to help the coconut palms, indirectly help the pastures also. No special grasses have been introduced because the already existing herbage has proved satisfactory. So far there has not been any adverse effect on the palms; on the contrary the estate has obtained an increase in crop under the system of rotational grazing, and the annual output per acre in "B" division is now over 3,000 nuts per acre.