1. INTRODUCTION

Pastures have always been and will continue to be the cheapest source of forages and nutrients for dairy cattle in Fiji. Well-managed pastures can provide high quality and economical forages to dairy cattle. The key to making a grazing system work better is providing the cow with a readily available quality pasture that does not limit forage intake and to maintain the pasture in a vegetative state to provide a highly nutritious forage. Concentrates should be fed to optimize milk production on pastures and complement the nutrients supplied by these forages. Properly managed pastures can provide cows with high-quality forage harvested or grazed at a very nutritious stage of maturity.

How do you grow these high-quality forages?

It starts with the soil. Good biology and healthy, mineralized soils produce quality forages when paired with carefully selected pasture species and good management practices. Forages are always a part of a dairy cow's diet. The better the quality of that forage, the more of it you can feed, the better cows perform, and the less you have to supplement.

2. PASTURE MANAGEMENT OBJECTIVES

The decision to use pasture as a major source of nutrients for milking cows must be accompanied by a strong commitment to properly manage the pasture. Determining soil fertility status, choosing a fertilization program, selecting appropriate forage species, and controlling grazing are important elements of a pasture-management program. The major objective of any dairy farmer should be maintaining the quality of pasture and weeds in the paddock. Continuous investment is required to maintain the quality and quantity of pasture available to cattle at all times.

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3. MANAGEMENT OF NEWLY ESTABLISHED PASTURE

- Control weeds as it emerges or use pre-emergence weedicide to reduce the chances of heavy weed infestations during the establishment phase.
- Graze new pastures when the root system of grass and legume is strongly established.
- Control grazing management is required to ensure proper root establishment.
- A sensible method is to graze young stock first so that they cause minimal damage to pasture.
- Do not overgraze and overstock the newly established paddocks.
- Grazing new pastures during wet weather will cause damages to stems and roots due to trampling, avoid using newly established paddocks in wet periods.
- Check grazing on new pastures constantly and immediately remove animals if there is a sign of pasture damage and empty patches.
- Graze new pasture containing legumes very lightly in the first year to allow the legumes to flower and set seeds.

4. MANAGEMENT OF ESTABLISHED PASTURES STOCKING RATE

- The correct stocking rate of pasture allows maximum live weight gain/ha. The stocking rate can be determined by the dry matter analysis or topography of the land. Effective grazing area should be determined to ensure low chances of overstocking.
- Maintain pastures and to keep it free from weeds.
- Adjust the stocking rate during the different times of the year to avoid over or understocking.
- Overstocking means the farmer has too many animals in a smaller area.
- At a high stocking rate, animals are eating the desirable grasses and legumes faster than they can grow. As a result, the pasture will be too weak to compete with weeds and the whole pasture becomes invaded with weeds.

5. OVER STOCKING CAN ALSO OCCUR

- During dry seasons in Fiji when the pasture growth is stunted.
- During periods of heavy rain and little sunshine when pasture growth is slow.
- As animals grow they will increase their feed intake per day depending on their size and dry matter intake.

6. METHODS TO OVERCOME OVER STOCKING

- Have a good breeding and nutritional plan ready and based on the stock build-up and available resources practice selection and culling to meet the dietary requirements of cattle.
- Grow varieties of pasture and fodder and use fertilizer to extend the growing season.
- Use mixed (grass/legume) pastures to prolong feed quality into the dry season. Legumes are deep-rooted with high nutritive value and supply better forage.
- Grow special fodder crops such as Juncao, elephant grass, Guatemala or Leucaena under intensive management to provide special pasture or cut and carry-feed for the animals during shortage period.

The two common systems of grazing are continuous and rotational grazing.

7. CONTINUOUS GRAZING

- Animals are grazed within one enclosed area without any control over time.
- The simplest method of grazing requiring the least amount of fencing material and costs.
- Offers a great opportunity for feed selection by animals but stocking rates have to be adjusted from time to time to allow for changes in pasture and animal growth.

8. ROTATIONAL GRAZING

To sustain a healthy field and grass crop, livestock needs to be rotated through a system of pastures rather than being allowed

Setaria grass

to graze continuously on one large pasture. The pasture rotation system will include a system of cross-fencing to define areas of smaller pastures that livestock can be moved through. This system will result in more forage, less overgrazing, and reduced soil compaction. Divide pastures with permanent or temporary cross-fencing to provide 4-7 smaller pastures. This allows you to control how long animals can graze in a certain area. Begin grazing pastures after the grass has reached a height of 6" - 7". Allow livestock to graze pasture down to no lower than 3" before rotating to the next pasture. Left on their own, livestock will graze their favorite grasses over and over again, allowing other less desirable species to thrive and go to seed. Be sure to allow each pasture a sufficient period for forage regrowth after grazing; you want the grass to regrow to 6" - 7" height before rotating animals back to that pasture.

- Subdivide pasture into several paddocks and graze animals in a regular sequence before returning to graze again in the first paddock after the regrowth period.
- A farm paddock system and a rotational cycle of about 25-30 days are used.
- Take care not to overgraze pasture as it will affect the pasture growth.

i). ADVANTAGES OF ROTATIONAL GRAZING

- Cattle are regularly moved from one paddock to another so they are quieter and easily managed.
- Offers several paddocks and other cattle management operations.
- Pasture height and quality are easier to maintain.
- Better worm control strategy for cattle.

ii). DISADVANTAGES OF ROTATIONAL GRAZING

- More expensive as it requires more capital for fencing materials, water troughs, gates, and weed control mechanisms. More shade trees would also be needed.
- Labour needed in moving cattle but this is paid off in taming animals.
- There can be an increase in weed under the rotational grazing systems. Pasture that has not been grazed from some time grows tall and carries leaves in the top portion of the pasture plant. But once grazed these leaves are removed allowing sunlight to strike the soil surface and initiate weed germination.

9. SLASHING

- Will improve the quality of the pasture.
- Under stocked pastures becomes tall and old.
- Cattle will not eat old pastures.
- If old pastures are slashed, new leaves will grow and the pasture will become palatable to animals.
- Slashing is done using a slasher driven by a tractor, brush cutter, or cane knife (if the area to be slashed is small).

Someone thinking of starting an effective grazing program may ask how many acres or hectares of pasture are needed for each cow. If farmers entirely depend on pasture for the forage source, an approximation will depend on the pasture type, topography, and available effective grazing area on the farm. Anyone starting with a grazing program should stock conservatively. Learning to manage a grazing dairy takes time, and starting with too many cows makes the process more difficult.

Key points to remember:

1. Keep grasses in a vegetative state.

2. Consider the bottom 3 - 4 inches of the plant as an 'energy bank', which should be left for plant use, not for animal feed.

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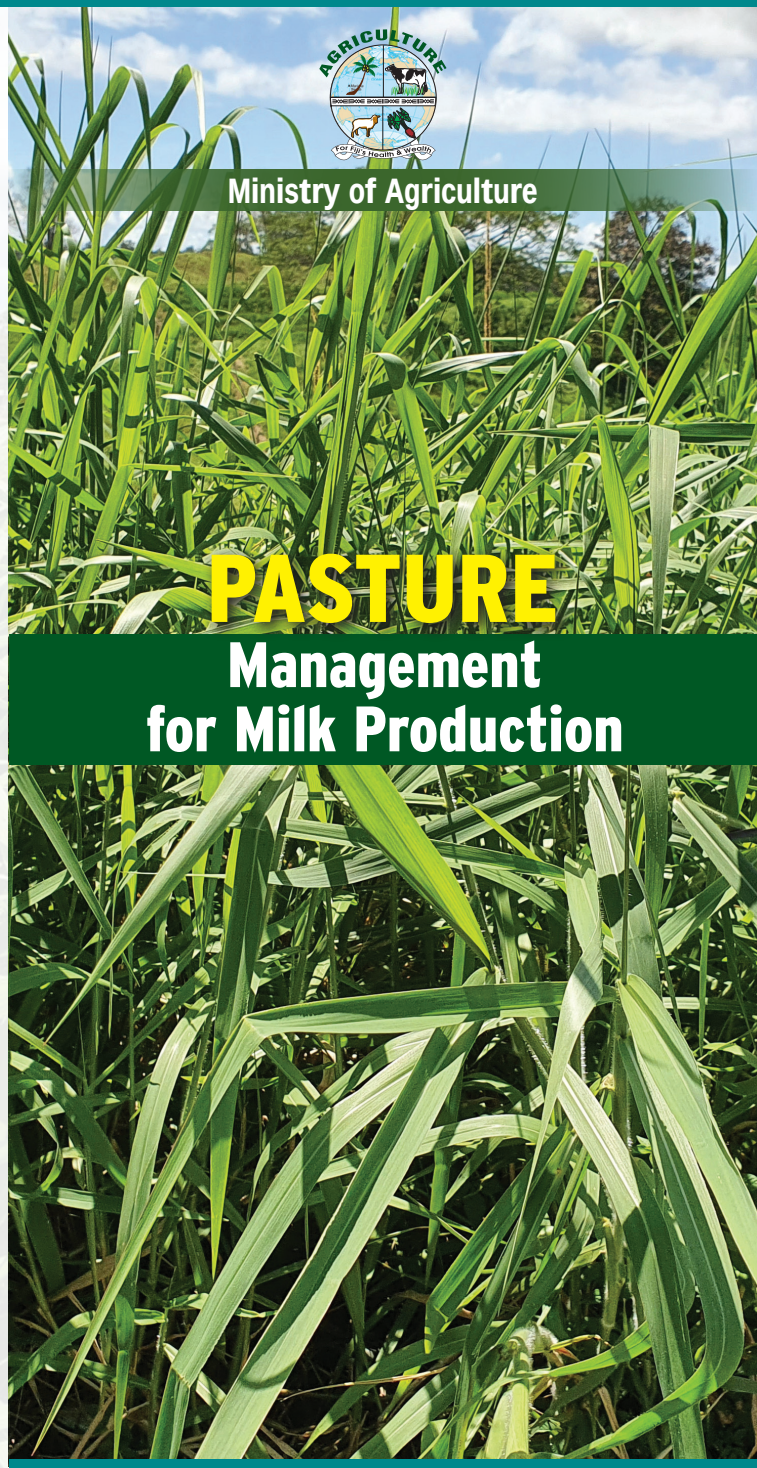

Ministry of Agriculture

PASTURE Management for Milk Production

Leaflet 2020