

MATUA PRAIRIE GRASS ESTABLISHMENT

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Abstract

This paper reviews the role Matua prairie grass can play on pastoral farms, and covers establishment and utilisation problems. A management package is presented based on recent practical experience. It is felt that finally, many years after its release, there is now a package which will enable **most** farmers to use Matua while avoiding the problems that have plagued users in the past.

Keywords: Matua, prairie grass, **dryland**, pastoral farming

INTRODUCTION

Matua has been proven to have a large potential, particularly on the lighter **dryland** sheep farms where severe production decreases caused by poor survival of **ryegrass** during recent drought have occurred. This is possibly due to attacks by Argentine stem weevil. To counteract this farmers have the difficult choice between using high *Lolium* endophyte ryegrasses with associated **ryegrass** staggers, or short **ryegrass** life. Farms with these problems become particularly short of feed around mating time, late winter and in summer even if adequate moisture is available. Matua yields more than perennial **ryegrass** during these periods and can provide a source of valuable feed. Dairy farmers are also rediscovering the role Matua can play in their systems.

Reasons for previous poor farmer uptake of Matua have been:

1. Lack of information in a practical farm management package.
2. Mechanical problems of seed flow through drills.
3. Misleading conclusions from trials that had poor initial establishment problems.
4. Low seedling establishment and survival due to soil-borne fungi (especially *Pithium* sp)
5. Incorrect grazing management once established.
6. Resultant poor publicity.

ROLE OF MATUA ON THE FARM

The main features of Matua are:

- prolonged palatable growth under dry conditions
- high autumn growth rate
- high winter growth rate
- total annual dry matter is significantly higher than perennial **ryegrass** e.g. by at least 15% or more.

DETAILED MANAGEMENT PACKAGE

This package places before farmers information and methods that have not been available in the past. It is the combination of a lot of work over a number of years by advisers, farmers and researchers. Farmers are encouraged to try Matua by following these recommendations and assess its role on their properties. Dates mentioned apply to Canterbury.

Soil fertility

Matua is very responsive to good soil fertility and this should be at least as good

as that required for ryegrass with a pH between 6.0 — 6.5. Soil test 6-8 weeks before sowing and apply any lime before final surface workings to allow good mixing.

Ground preparation

Best establishments are where Matua follows a green-feed crop such as turnips or rape. This helps clean up weeds and gives an opportunity to improve fertility. Start preparing ground early as this will conserve moisture and ensure that early sowing is possible. The seed bed should be fine and firm as for lucerne sowing.

Seed

Use only certified seed as this will have been harvested from stands free of head smut. To control head smut and protect seedlings from soil borne fungi treat the seed with a mixture of 1.7 grams of Baytan F17/kg seed plus 6.3 grams of Captan 80/kg seed. Current costs (September 1984) are about 20 cents/kg compared with 50 cents/kg for the old recommendation of Benlate. Most Matua seed treated by commercial firms is not covered well due to seed flow problems through treatment plants. Best results are obtained where farmers treat the seed themselves. A good method uses a concrete mixer and calibrated knapsack or hand sprayer. A concrete floor and shovel is an alternative. Make the chemical mixture just thin enough to flow through spray equipment and ensure adequate seed coverage without undue wetness.

Sowing Time

Best establishment results are found from early sowing, be it in spring or autumn.

a) *Spring Sowing* — Early spring sowing (early September in Canterbury) is preferred as long as overgrazing can be avoided during its first summer.

b) *Autumn Sowing* — Early cultivation to ensure some moisture conservation is the key to successful autumn establishment. If following greenfeed, be prepared to cultivate it early rather than delay for a little extra greenfeed regrowth. Counter this by sowing the greenfeed (e.g. rape) early.

Sowing

Drilling is now considered too troublesome and broadcasting is now the recommended method. Both the Vicon and Aitcheson oscillating arm or spinner, hopper type spreaders were proven satisfactory by NZAEI/MAF in 1984. Other similarly constructed machines should also work. The newer pneumatic spreaders (Ysta-Matic, Nodet-Gougis, Nordsten) proved unsatisfactory. Sowing rate should be 40 kg/ha of certified and treated Matua seed along with 3 kg/ha of white clover.

Because exact calibration is difficult with spreader broadcasting the best results are obtained as follows.

Aim to cover the paddock at least twice to give an even distribution. If the thousand seed weight is 10 grams (typical), 40 kg/ha applies about 400 seeds/m². Adjust the hopper aperture to apply around 200 seeds/m². This will require some trial and error but is not difficult. If checking is done by counting seeds in a square wire quadrat of 0.25 m², remember to multiply by four. Then drive up and down the paddock not round and round, aiming to slightly overlap the seed. The second pass should be half way between the wheel marks of the first pass.

Seed Covering

Do not bury the seed deeper than 4 cm. Implements which have given the best results so far are light harrows, flexi-tyne harrows with rotocumbler, or discs with minimum angle of cut. Use a Cambridge roller after this only if moisture is limited or stones need burying. Do not use a heavy roller later unless absolutely necessary for stones. In this case wait until plants are well established.

Early Management

Nitrogen applied soon after seedling emergence (e.g. 50 kg/ha of Urea) gives very good results and speeds up establishment. This can be used to good effect if sowing is a little late.

First grazing should be designed purely to encourage the plants to tiller out so graze for a short (e.g. one day) period with about 500 ewes/ha when seedlings are about 10 cm high and firm in the ground. Do not graze lower than 4 cm.

Subsequent Management

The key to maintaining a good stand is to avoid too frequent grazing. A rotational system with long spells is best. Aim to graze when plants are about 15 cm high and then graze for no longer than 2 days using a break fencing system or paddock rotation. Sack fencing is essential. Spells should be long enough to allow growth back to original 15 cm.

Maintain a high soil fertility by applying at least 250 kg/ha of superphosphate equivalent fertiliser with nitrogen used strategically (e.g. autumn or spring) as required.

Grazing Programme

a) Summer ➔ Matua growth is significantly better than perennial ryegrass, especially as it gets dryer. As its quality is far better than **ryegrass** at this time use it for growing young stock. (e.g. finishing lambs, ewe lambs, rising **two-tooths**).

b) Autumn ➔ Use as flushing and mating feed for ewes. Do not graze later than about the end of May.

c) Winter ➔ Matua is best left to build up a feed bank over June/July as growth rate is usually twice that of perennial ryegrass.

d) Late Winter/Early Spring ➔ Use this created feed bank as pre-lamb feed. It may be possible to lamb on Matua paddocks if there is sufficient area.

e) Spring ➔ Shorten rotation of ewes and lambs. Consider applying nitrogen to boost growth for a silage or hay crop or for weaning feed.

f) Late Spring/Early Summer ➔ Graze with weaned lambs to **capitalise** on high quality. Seed heads are very palatable.

Area of Matua Suggested

Up to 30% of total farm area has been found to give best results. Greater percentage areas run the risk of being mismanaged by overgrazing in tight periods. A suggestion is for farmers to try a small area first and use this as an experience gathering exercise.

ACKNOWLEDGEMENTS

The author would like to thank the many people who have assisted him over the years in what has been a team effort to fill the gaps in information about Matua. These include farmers, along with staff from MAF, DSIR and NZAEL who have all played a valuable role in putting together this package. A special thanks to Mr Alex Dunlop who as a farmer has helped solve many of the on farm problems by working closely with us.