Pasture Strain Testing Trials 1962

O. J. Mark

Trial: ~~Hf 207~~ Observational

Location: Bothwell.

Species: Lucerne.

Seeding Rate: 10 lbs per acre. Seed inoculated with Dept. of Ag. inoculum

Date of Sowing: 8/11/62. ~~Seed mixed with lime for sowing.~~

Plot Size: 10 × 6 feet = $\frac{1}{700}^{th}$ acre (approx.)

Manural:

~~4 cwt/ac ground limestone~~

$2\frac{1}{2}$ cwt/ac high grade superphosphate } applied basally at sowing.

$\frac{1}{2}$ cwt/ac muriate of potash.

Seed Lines:

Hf 229	Du Puits ex New South Wales 1962.
Hf 227	Fairy Peruvian.
Hf 228	Hunter River Commercial.
Hf 140a	Lucia ex Derry 1959/60.
Hf 218	ex Roondrook Victoria 1958.
Hf 207a	~~1962 Selected from Hf 207 pots~~ Promising African Introduction C.P.I ?

Plan.

Seed sown in shallow rows 9" inch apart on 8/11/62

N ←→

	①	②	③	④	⑤	⑥	
Lime 2 cwt.	Hf 140a	Hf 229	Hf 228	Hf 227	Hf 207a	Hf 218	2 cwt
Lime ½ ton	⑦ Hf 228	⑧ Hf 218	⑨ Hf 227	⑩ Hf 207a	⑪ Hf 140a	⑫ Hf 229	½ ton

Lime Treatments. 2 cwt. ground limestone mixed & sown & seed on ½ treat (West

61747

Tasmania

Department of Agriculture,
Mt. Pleasant Laboratories,
Box 58, Launceston South

26/11/62

Dr. G. Reber,
Research Fellow,
C.S.I.R.O.,
Stowell Avenue,
HOBART.

Dear Dr. Reber,

Lucerne at Bothwell.

I am forwarding herewith 2 copies of the plan of the observational lucerne sowing made on the Radio Astronomy investigation site at Bothwell on the 8th November, 1962.

We shall be interested to receive your observations periodically on the relative establishment growth and spread of the different varieties. Ratings, accompanied by qualifying remarks are suggested along the lines previously discussed.

The lucerne was sown in rows so that any grasses, clovers or weeds may be controlled by hand cultivation if necessary. Weeds are normally a major problem during establishment particularly after a brief soil preparation period.

If any other difficulties occur please advise.

With kind regards,

Yours faithfully,

G. J. Martin

(G. J. Martin)
AGRONOMIST.

PASTURE STRAIN TESTING TRIALS 1962.

TRIAL: Observational.

LOCATION: Bothwell, property of G.B. Edgell

SPECIES: Lucerne

SEEDING RATE: 10 lb. per acre; seed inoculated with Dept. of Ag. inoculum Su 277/1.

DATE OF SOWING: 8/11/62; in rows 9" apart.

PLOT SIZE: 10 x 6 feet = 1/700 acre (approx).

MANURIAL: 2½ cwt/acre high grade superphosphate) applied basally
½ cwt/acre muriate of potash) at sowing.

SEED LINES:

AF 229 Du Puits ex New South Wales 1962.
AF 227 Hairy Peruvian
AF 228 Hunter River Commercial
AF 140 a Lucia ex Cressy 1959/60.
AF 218 ex Koondrook, Victoria 1958
AF 207a 1962 harvest from ~~AF 207 plots.~~ CPI 18402

PLAN

N →

6'

A 2 cwt.	10' AF 140 a	AF 229	AF 228	AF 227	AF 207 a	AF 218
B 10 cwt.	AF 228	AF 218	AF 227	AF 207a	AF 140a	AF 229

A = 2 cwt./acre ground limestone mixed & sown with seed.

B = 10 cwt./acre ground limestone broadcast before sowing.

Soil pH before sowing = 5.9

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Soil pH before sowing = 5.9

Copy for Dr. Reber.

DM:MER

26th June, 1962.

Mr. E. F. Fricke,
Department of Agriculture,
Box 673 E, G.P.O.,
HOBART.....TAS.

Dear Mr. Fricke,

Lucerne at Bothwell.

Our Hon. Research Fellow in Radio Astronomy, Dr. G. Reber, has erected a large radio telescope on an area of flat land at Bothwell. During the course of erection of the poles which involved digging some hundred 10 ft. holes it was found that even in this dry summer there was permanent water at 6' - 8' depth. Dr. Reber is very interested in plants and in casting round for some interesting and useful plants to grow round his laboratory it occurred to me that this would be a good site to experiment with lucerne varieties. The land-owner Mr. G. Edgell is most interested and as the building will be in regular use and any plots under continual supervision, I wondered if you would care to supply some plants of some of the newer lucerne species which have been introduced recently to put in a few small plots near the laboratory.

Kind regards.

Yours sincerely,

D. Martin,
Officer-in-Charge.

→ N

eaten by hares? 2	3	1 very sparse	6	6	4
3 well grown very patchy	6 well grown but patchy	10	6	8	3

10 = good growth, 16" high, reasonable density

6 = reasonable growth about 12"-13" high, reasonable density.

2 = 11" of growth, semi-dense

Dear Dr. Rebuli

We were passing through, saw the lucerne was ready to cut (just flowering) so we harvested it to save you the trouble. Some plots were cut & bagged for yield measurements. Visual ratings as above. A pity the Hunter River germination was so poor.

Could you arrange to have the subterranean clover chipped out now while lucerne is short otherwise it is likely to take over & smother the lucerne during the winter and early spring?

G. J. Martin

Plot nº 7 Sparse growth but still coming up, best bunches up to 13 inches high.

Plot nº 8.

Also sparse with some 12" high.

Plot nº 9

Fair strike with growths 13" high.

Plot nº 10

Good strike, up to 11" high

Plot nº 11

Good strike, up to 11" high.

Plot nº 12

Good strike, up to 9" high.

Plot nº 1

Bad strike so far but there seems to be a lot still coming through the ground. Odd bunch up to 9" high.

Plot nº 2.

Sparse growth but still coming up. Some 9" high.

Plot nº 3

Very bad strike so far. Only a small amount of new plants showing. Best growth very sparse, from 6" to 9" high.

Plot nº 4

Good strike with clumps up to 10" high.

Plot nº 5.

Good strike with most clumps between 10' and 11" inches. Very even growth.

Plot nº 6.

Good strike with some up to 11" high, but mostly fairly even at 8" to 9" high.

23-1-63.

Plots nº s. 1 & 2 and 7 to 12. now showing flowers.

30-1-63.

All plots harvested

Lucerne Report.

Both plots 5 & 10 of AF 209a through the ~~sand~~ soil.

24-11-62.

First good rain since sowing.

Other plots starting to come up are,- nº 4. (AF 227)
nº 11. (AF 1240a) nº 12 (AF 229)

Small showing in rest except for nº's 1. 7. 8.

30-11-62

Plots nº 1. 7. 8. now up.

3-12-62.

Good rain on the 2-12-62.

Plots 5 & 10 now app. 2 inches in height.

8/12/62

Some plots up to 3" high.

Rain on the 11-12-62.

14-12-62

Best growth eaten down by hares or rabbits.

28-12-62

Hoed plots to remove clover and weeds.
Southern half of plots very patchy but still coming up. Conditions very hot and dry.

5-1-63.

24-11-62.

Planted 19 clumps of lucerne from Yobarto.

1-12-62.

2 clumps showing green leaves.

8/12/62

about 8 clumps show new shoots & leaves
Mostly at north end of row.

10/6/64.

All plots of Lucerne harvested today by Mr. Lafevar. Both plots of AF. 140 and AF 229 showed poorest growth, all others very good.

12th Dec. 1963

Yeo.

We have sampled & topdressed the lucerne.
Would you kindly clip off the area ~~—~~ as we
a rotary mower, cutting to about 2".?
Also, would you please advise Dr Keber that we
will shortly forward a summary of harvest
weights recorded to date
Thank you.

Yours Campbell.

Yeo cut it off to an inch above ground 31/12/63.

25-3-63.

36 points of rain overnight, first rain for some time. Had some frost but no ill effects. All plots have grown again but southern plots are best now at about 6" to 8" because rabbits have been eating northern plots, which were good.

28.3.63

Plots now rabbit proofed with wire netting.

17-4-63.

All plots show some signs of frost bite from severe frosts over Easter Holidays. Mainly on longer growth.

1-8-63.

All plots seemed some what effected by frosts and dry winter. 0 to 2 & 12 (AF 229)., gradually shrank and almost disappeared into the ground, these two are still very slow but all other plots seem to be gowing well now, mostly about 3" to 4" inches high.

3-9-63.

N →

2"-to 5" -patchy	2"-to 5" patchy	4 to 7 sparse.	fairly even 6"-to 7"	even 4"-to 5"	patchy 3 to 6.
7"-to 8" Sparse.	fairly even 5"-to 7"	5"-to 8"	5"-to 6" even.	4"-to 5" fairly even	2"-to 5" slow.

LUCERNE OBSERVATIONAL TRIAL, "DENISON", BOTHWELL

Yield estimates (cwt. dry matter per acre).

	LUCIA AF 140a	DUPUITS AF 229	HUNTER RIVER AF 228	HAIRY PERUVIAN AF 227	AFRICAN ex ITALY AF 207a	HUNTER RIVER ex ROONDROCK AF 218
30/1/63	2-0	3-0	2-0	3-9	4-2	3-2
15/10/63	15-6	13-8	10-5	11-4	9-1	12-3
12/12/63	12-8	15-3	13-5	11-8	10-3	12-0
19/3/64	11-7	16-0	15-6	15-1	10-7	12-9
10/6/64	3-2	2-7	5-5	6-2	5-4	6-3
Total to 10/6/64	47-3	50-8	37-1	48-4	38-7	46-7
30/9/64	12-9	15-8	13-0	17-8	13-6	14-5
16/12/64	14-8	18-4	14-5	12-5	11-6	13-6
19/2/65	10-0	13-7	11-8	7-6	7-1	7-8
26/5/65	1-1	1-5	1-6	4-4	4-5	2-9
Total 1964/65	38-8	49-4	40-9	42-3	36-8	38-8
% Grass Cover 25/6/65	35-3	33-3	17-6	37-2	36-7	35-7

Comments: In view of the very limited nature of the trial itself the above data will provide only a very general guide. However it appears that the yields are about 25 cwt. less than those obtainable in the northern midlands on selected sites. This lower yield is probably due to the effects of lower rainfall, shorter growing season and the heavy subsoil.

Du Puits has performed best in most of our trials. AF 228 & AF 218 are both Hunter River and their performance has been equivalent in other trials. The density of AF 228 was adversely affected by poor germination not inherent in the variety itself, but its yield was not affected in the second season probably reflecting the dry conditions.

The Transference of Nitrogen from Pasture Legumes to an Associated Grass under Several Systems of Management in Pot Culture

by J.R. Simpson

The extent of underground transference of nitrogen from three pasture legumes each growing in association with a grass, has been studied in pot culture under several systems of management, during the first 12-18 months after sowing.

The three legumes performed quite differently. Subterranean clover did not release any nitrogen until senescence and then produced a rapid transference. White clover was competitive for nitrogen until the autumn-winter period. Lucerne released nitrogen gradually over the whole experimental period.

Frequent defoliation of the legumes reduced competition for nitrogen by white clover but also reduced transference from the other legumes. Killing the perennial legumes produced only a small temporary increase in transference. Wilting and temporary drying treatments also reduced the transference.

Thus there was no evidence that the nitrogen transference from lucerne was due to a shedding or decay of nodules induced by defoliation, and could equally be due to direct excretion of nitrogen from the intact root system.

The significance of the results in pasture establishment in infertile areas is discussed.

Aust. J. Agric. Res.

Point Quadrat Analysis of Foliage Distribution for Plants Growing Singly or in Rows

by J. Warren Wilson

The foliage area of single plants can be estimated from the number of contacts with foliage made by a grid of point quadrats, and the foliage area per unit length of a row of plants can be estimated from the contacts made by quadrats along a transect across the row. These methods allow analysis of the vertical and lateral distribution of foliage area. This is illustrated by studies of single plants of saltbush and rows of beans.

Aust. J. Bot.

39742

TASMANIA

Department of Agriculture
Box 192B, G.P.O.
Hobart

2/12/65

Dr. Reber,

I thought, after our conversation at Deniston, that the accompanying pamphlet on cobalt might interest you.

J. L. Scott

He cut the alfalfa on 30/11/65