1974

Pasture deterioration - high rainfall areas

D J. Gillespie

EXPERIMENTAL SUMMARY

- D.J. Gillespie

a. Pasture Deterioration - High Rainfall Areas.

A farm at Karridale (near Augusta) exhibiting "classic" pasture deterioration symptoms was closely monitored throughout 1974. This farm has paddocks ranging from relatively newly sown pastures with a high clover percentage, few weeds and high dry matter production (resown 1973 and 1974), through to extremely poor pastures with as little as 3 % clover and a weed component of over 80% (resown 1970 and 1971).

Each of seven paddocks was measured throughout the year for seed set, summer seed loss, germination, clover density, pasture composition, and clover root rot.

There is obviously a close relationship between increasing age of the pasture and (a) low clover plant numbers, (b) low seed yields, (c) high weed percentage and (d) high root rot levels.

Results indicate that considerable pasture deterioration (clover loss) on this property was caused by factors operating at or soon after the break of the season. Over all paddocks (except paddock G - 75% newly sown clover) the average clover numbers at May 21 represented only 12.7% of the seed reserves present in January (Range 5-20%). Sampling on one paddock only was done on March 20 and 86.5% of the January seed was still present. If this is representative of all paddocks, about 75% of the seed set in December is lost in the 5 or 6 weeks following the break of the season.

The reasons for this very large loss have not been accurately determined but root rots are undoubtedly having a large influence. There appears to be a positive relationship between severe root rot of the taproot and age of the pasture.

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Table 1. Taproot rot incidence (% of plants with moderate - severe taproot rot).

Paddock	Year of Reseeding	Assessment Date (Days after break of season.)			Average
		16 days	37 days	79 days	
A	1970	64	47	78	63
B	1970	50	54	55	53
C	1971	54	43	38	45
D	1971	36	43	30	36
E	1972	18	8	7	11
F	1973	5	5	3	4
G	1974	17	6	2	8

It is hoped to assess the contribution of root rots to pasture deterioration during 1975.

b. Midland B Competition Studies (69Mt19).

This grazing trial was sown in 1969 to plots of pure Midland B, pure Woogenellup and to three mixtures of the two cultivars. Part of the area was cropped in 1971 but has been grazed with the rest of the trial since then.

For the first time since the commencement of this six year old experiment, Midland B is showing itself to be more competitive than Woogenellup. This has resulted from (1) a severe attack of clover scorch in 1973 which reduced the seed set of Woogenellup much more than Midland B and (2) a marked false break to the season in 1974 which favoured the more hard seeded Midland B.

The severity of the false break can be gauged by comparing the average clover percentage (by weight) of all plots (16%) with that of previous years (80 - 90%).

Sampling in July 1974 indicated Midland B accounted for 65% of the clover present and Woogenellup only 28% (See Table 2.)

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Table 2. Percentage by weight of clover component - July 1974

Sown Variety	Measured Variety	Continuous Pasture	Cropped in 1971	Average
Woogenellup	Woog.	21	57	39
	Mid B	66	25	46
	Others	13	18	15
Midland B	Woog.	12	1	7
	Mid B	87	99	93
	Others	1	0	0
Woog. x Mid B 1:1	Woog.	25	31	28
	Mid B	75	69	72
	Others	0	0	0
Woog. x Mid B 9:1	Woog.	56	44	50
	Mid B	19	49	34
	Others	25	7	16
Woog. x Mid B 1:9	Woog.	27	4	16
	Mid B	66	96	81
	Others	7	0	3

This trial will be assessed for one more year to determine whether the dominance of Midland B continues.

c. Midland B/Seaton Park/Yarloop/39313Y grazing trial (72Mt29).

In a non-waterlogged environment at Mt. Barker both Seaton Park and Midland B have successfully competed with Yarloop under grazing. Seaton Park has outperformed Midland B with both dry matter production and plant establishment, while 39313Y (Larissa) has produced far more dry matter than Yarloop late in the season although plant counts are very similar.

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Table 3. Plant establishment and dry matter production.

Date	Plot 1		Plot 2		Plot 3		Plot 4	
	Seat-on Pk.	Mid B	Yar-loop	Mid B	Yar-loop	39313Y	Yar-loop	Seat-on Pk
Plant Establishment 1/5/1974 %	62	36	35	65	58	42	36	64
2/7/1974 %	79	21	46	54	54	46	30	70
Dry matter Prodn. 10/9/1974 kg/ha	Insufficient growth to measure yield							
%	69	31	49	51	46	54	29	71
8/10/1974 kg/ha	925	607	402	1173	483	1223	529	1059
%	60	40	25	75	28	72	33	67
5/11/1974 kg/ha	1001	1274	455	2072	76	2469	333	2047
%	44	56	18	82	3	97	14	86

It is proposed to crop part of each plot during 1975. Regeneration of each variety after cropping will be measured for at least one season.