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Nicolas, D A. (1985), *Pasture species investigations.*. Department of Agriculture and Food, Western Australia, Perth. Report.

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Department of Agriculture
Western Australia

SUMMARY OF RESULTS

PASTURE SPECIES INVESTIGATIONS
1985

D.A. Nicholas
Plant Research Division

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81NA37/4140 EX

Title: Clover cultivar evaluation, Woogenellup alternatives

Location: 'Culford', N. Bannister; gravelly sand loam

Treatment 1985: Grazed in common with surrounding paddock.

Results: Clover seed yield - 18/12/84

Comments:

1. The originally sown Woogenellup is a major component of all treatments - see the nil result.
2. The trial to be cropped.

81NA37

Line	Seed 18-12 kg/ha
GD17.30.4.4	615
GD17.30.4.5 (Green Range)	641
GD56.8.1.3	631
GD56.8.1.5	646
DA20.19.2 (June)	635
MND7.2	569
DMN18.2	592
DMN18.2.3	571
DMN12.3.1.1	600
DMN12.3.1.2	640
Crossbred Mix	617
Trikkala	708
Dinninup	779
Esperance	813
Woogenellup	513
Nil	572
Average	644

81PE6/4140 EX

Title: Clover cultivar evaluation, Woogenellup alternatives
Location: J.B. Crooks, Byford; red brown sandy loam with pieces of granite
Treatment 1985: Grazed in common with paddock.
Results: Seed yield - 2/12/83, 4/12/84
Clover plant re-establishment - 8/5/84

Comments:

1. An abrupt early finish to the 1983 season kept seed yields low. The earliest maturing lines were the highest yielding - Trikkala and Seaton Park.
2. Taking into account the seed yields, regeneration in 1984 was satisfactory. Again Trikkala and Seaton Park had the highest densities. The crossbreds even the late maturing MND7.2, continue to outperform Woogenellup.
3. Seed yields in 1985 were again low - there had been a marked progression to grass dominance during the year. Trikkala produced the most seed with Karridale also performing well given its later maturity.

81PE6

Line	2/12/83 Seed kg/ha	8/5/84 Plants No./sq m	4/12/84 Seed kg/ha
GD17.30.4.4	140	990	73
GD17.30.4.5 (Green Range)	160	1240	119
GD56.8.1.3	210	1130	137
GD56.8.1.5	200	1250	90
DA20.19.2.1 (June)	190	1190	77
MND7.2 (Karridale)	170	1220	178
DMN18.2	180	1320	80
DMN12.3.1.1	130	1050	126
DMN12.3.1.2	140	1200	73
Mixture	230	940	139
Trikkala	350	2130	246
Dinninup	90	1210	39
Esperance	100	810	103
Seaton Park	220	2090	178
Woogenellup	120	540	57

Title: Screening of mid to late maturing lines of subterranean clover

Location: P. McDonald, Karridale

Treatment 1985: Trial was grazed in common with paddock from 1983. Paddock closed up for hay production in mid September 1984 and then again subject to normal grazing.

Results: Clover seed yield kg/ha, 7.1.85, from selected treatments.

Comments:

1. Most of the selected introductions produced considerably more seed than the "old" cultivars.

Line	Clover Seed kg/ha 7.1.85
89880J	388
89830F	386
89803H	382
89822H	338
89774B	320
89777C	254
89820D	252
Karridale	220
89859F	194
Junee	190
89774F	144
68103H	134
GF.123.3	95
Mt Barker	92
Larisa	72

83MA7/4365 EX

Title: Selection of subterranean clover cultivars

Aim: To screen in the field a range of promising mid to late maturing lines of T. subterraneum.

Location: P. Rose, Wilgarup via Manjimup

Site: Old land; gravelly brown loamy sand; trial sown 10/6/83

Treatment 1985: Grazed in common with paddock, not continuously. Closed up 9/8 to 28/8 and 9/10 to 7/11.

Results: Clover seed yields - 13/1/85
Clover plant regeneration - 13/6/85
Total yield, % clover, clover yield - 29/8/85, 7/11/85

Comments:

1. Growing season conditions reasonable.
2. Seed yields following 1984 season were average with some lines repeating their good performance of 1983 e.g. 89774F, 89880J, 89880F, 89841E, 89774B and 89816F. The yields were approximately double that of Woogenellup.
3. For regeneration lines that repeated their good performance in 1984 included 89774B, 89774F, 89816F, 89830F, 89841E, 89880J. Karridale also regenerated well but Enfield was markedly poorer.
4. Differences in total pasture production in August and November were small. However some lines maintained a higher clover content - 89774F, 89777C, 89860D, 89880J, Larisa and Meteora.
5. Overall the line 89774F has given consistently performed well. Other lines to show out include 89880J, Karridale, 89777C and 89816F.

- 1 = Clover seed, 13/1/85, kg/ha
 2 = Density of clover plants, 13/6/85, no/sq dm
 3 = Total pasture yield, 29/8/85, kg/ha
 4 = Clover, 29/8/85, %
 5 = Clover, 29/8/85, kg/ha
 6 = Total pasture yield, 7/11/85
 7 = Clover, 7/11/85, %
 8 = Clover, 7/11/85, kg/ha

Treatment	Seed 13-1 kg/ha	Den. 13-6 sq.dm	Y. 29/8 kg/ha	C. 29-8 %	C. 29-8 kg/ha
MIXT-A	223	18.77	1,532	45	697
MIXT-B	435	26.68	1,523	40	611
47298	350	16.23	1,687	35	583
47308C	285	6.30	1,728	30	532
47308D	261	9.82	1,690	39	679
68103H	334	13.05	1,586	35	560
83938H	281	15.07	1,636	31	511
84441B	328	15.54	1,829	35	645
89774B	493	23.56	1,639	39	656
89774F	457	29.17	1,608	49	783
89777C	369	21.25	1,709	45	751
89793D	336	15.19	1,652	33	545
89803H	329	18.31	1,636	50	837
89805D	287	17.15	1,788	51	909
89809I	394	15.19	1,731	38	651
89816F	426	21.66	1,605	45	736
89820D	357	12.13	1,702	38	652
89822H	272	26.45	1,756	38	673
89830F	348	22.29	1,740	39	691
89841E	380	19.87	1,743	37	634
89859F	280	8.95	1,753	40	720
89860D	273	10.97	1,930	50	978
89880F	411	16.00	1,624	36	587
89880J	409	26.62	1,775	45	806
GF123-1	275	10.34	1,775	32	553
GF126-10	314	12.59	1,728	27	476
GF143-3	206	9.93	1,652	33	545
GF144-3	310	10.34	1,725	38	665
GF146-1	241	9.30	1,728	31	546
GF183a-4	238	10.46	1,794	35	631
GF183a-5	262	18.31	1,649	43	717
GF189-2	217	12.30	1,589	39	629
GF199a-7	185	9.65	1,702	34	581
GF202-5	264	12.99	1,737	40	689
TOODYAY-E	331	11.26	1,605	33	537
ENFIELD	200	11.44	1,785	36	657
WOOGENELLUP	233	13.75	1,759	57	1,041
MT-BARKER	204	9.35	1,671	36	616
TALLAROOK	291	10.63	1,784	39	675
ESPERANCE	345	13.17	1,775	36	652
KARRIDALE	348	23.45	1,706	46	788
JUNEE	268	11.21	1,712	34	604
LARISA	272	18.37	1,728	55	967
METEORA	336	13.17	1,756	45	825
NIL	266	11.55	1,634	33	549
AVERAGE	309	15.29	1,701	39	674

Treatment	Y. 7-11 kg/ha	C. 7-11 %	C. 7-11 kg/ha
MIXT-A	5,004	55	2,784
MIXT-B	4,397	52	2,287
47298	4,518	39	1,782
47308C	5,247	44	2,336
47308D	4,721	42	2,073
68103H	5,004	36	1,800
83938H	4,842	41	2,031
84441B	4,964	45	2,252
89774B	4,316	44	1,910
89774F	4,964	63	3,146
89777C	5,044	50	2,667
89793D	4,802	43	2,059
89803H	4,195	41	1,728
89805D	4,802	43	2,072
89809I	4,802	34	1,624
89816F	4,923	52	2,610
89820D	5,045	33	1,717
89822H	5,206	46	2,403
89830F	4,195	49	2,044
89841E	4,963	35	1,782
89859F	5,004	46	2,351
89860D	5,530	48	2,714
89880F	5,044	39	1,927
89880J	4,721	51	2,469
GF123-1	4,964	47	2,361
GF126-10	4,842	39	1,912
GF143-3	4,923	39	1,954
GF144-3	4,964	46	2,306
GF146-1	4,963	36	1,839
GF183a-4	5,044	42	2,083
GF183a-5	4,599	49	2,264
GF189-2	4,599	41	1,893
GF199a-7	5,206	42	2,130
GF202-5	4,883	39	1,875
TOODYAY-E	4,842	40	1,946
ENFIELD	5,328	39	2,138
WOOGENELLUP	5,166	42	2,204
MT-BARKER	4,802	41	1,984
TALLAROOK	5,207	34	1,775
ESPERANCE	4,721	34	1,595
KARRIDALE	5,126	50	2,595
JUNEE	4,923	36	1,781
LARISA	5,692	57	3,345
METEORA	5,692	56	3,257
NIL	4,708	38	1,798
AVERAGE	4,919	43	2,165

83AL49/4365 EX

Title: Selection of subterranean clover cultivars

Aim: To screen in the field a range of promising mid to late maturing lines of subterranean clover.

Location: B. Smith, Hazelvale.

Site: Old land; gravelly loamy sand over clay; trial sown 20/4/83.

Treatment 1985: Grazed in common with paddock, not continuously.

Results: Clover seed yield - 12/1/85.

Comments:

1. Good seasonal conditions.
2. Dock growth still a problem and consistent grazing was required to maintain some control.
3. Good seed production from lines 89774F, 89822H, 89816F and 89830F. The two lines 89774F and 89822H also had shown out during 1984 for good regeneration and growth.

Treatment	Seed 12-1 kg/ha
47298	324
47380C	148
47308D	287
68103H	254
83938H	267
84441B	348
89774B	308
89774F	409
89777C	335
89793D	259
89803H	239
89805D	121
89809I	144
89816F	402
89802D	229
89822H	384
89830F	373
89841E	177
89859F	244
89860D	215
89880F	158
89880J	273
GF123-1	151
Gf126-10	262
GF143-3	175
GF144-3	167
GF146-1	173
GF183a-4	206
GF183a-5	180
GF189-2	235
GF199a-7	242
TOODYAY-E	185
ENFIELD	169
WOOGENELLUP	157
MT-BARKER	123
TALLAROOK	152
ESPERANCE	170
KARRIDALE	143
JUNEE	158
LARISA	346
METEORA	171
NIL	128
GRAND AVERAGE	227

Title: Selection of subterranean clover cultivars

Aim: To screen in the field a range of promising mid to late maturing lines of subterranean clover.

Location: M. Smith, Bramley

Site: Old land; loamy sand over clay; sown 17/5/83

Treatment 1985: Grazed by sheep for most of season. Topped 8/8 to control capeweed. Selective patch grazing a problem.

Results: Clover seed yield, 8-1.85, kg/ha
Clover regeneration, 12.6.85, No/sq. dm
Clover content, 28.8.85, %

1. Best seed production from lines GF189-2, GF144-3, 68103H, 89777C.
2. Regeneration not good, mainly due to growth of capeweed. Best lines were 47308C, 89777C and 89830F.
3. Clover content in late winter satisfactory for lines GF189-2, Toodyay E, 89774F, 89777C and 47308C.

Treatment	Seed 8-1 kg/ha	Den 12-6 sq. dm	CL 28-8 %
47298	299	8.43	39
47308C	380	24.17	50
47308D	262	6.93	30
68103H	496	5.89	37
83938H	178	9.24	44
84441B	236	10.77	39
89774B	270	4.85	46
89774F	342	16.74	52
89777C	459	23.44	49
89793D	255	6.93	29
89803H	297	9.93	41
89805D	121	4.73	35
89809I	119	4.74	41
89816F	261	5.55	39
89820D	369	11.43	36
89822H	355	10.51	37
89830F	363	19.06	44
89841E	282	14.21	45
89859F	202	11.66	30
89860D	185	9.24	32
89880F	325	12.93	39
89880J	385	8.66	40
GF123-1	216	3.81	31
GF126-10	110	3.85	23
GF143-3	273	9.93	40
GF144-3	479	8.20	38

Table continued...

Treatment	Seed 8-1 kg/ha	Den 12-6 sq. dm	CL 28-8 %
GF183a-4	266	1.16	28
GF183a-5	386	10.28	31
GF189-2	498	6.47	58
GF199a-7	338	4.27	32
GF202-5	263	9.01	44
TOODYAY-E	132	3.00	52
ENFIELD	104	5.20	33
WOOGENELLUP	166	6.47	25
MT-BARKER	297	3.24	16
TALLAROOK	340	4.27	25
ESPERANCE	149	9.12	22
KARRIDALE	299	11.20	34
JUNEE	148	8.32	36
LARISA	144	4.04	36
METEORA	188	2.19	35
NIL	118	2.88	34
AVERAGE	269	8.15	36

84V7/4365 EX

Title: Selection of subterranean clover cultivars

Aim: To screen in the field a range of promising mid to late maturing lines of subterranean clover.

Location: Vasse Research Station.

Treatment 1985: Topdressed 300 kg 5:1 super/potash fertiliser. Grazed by sheep from 7/6 to 1/8 and 29/8 to 1/10/85. Mown for hay in mid November.

Results: Clover seed - 9/1/85
 Clover regeneration - 11/6/85
 Yield and clover content - 28/8/85
 Yield rating - 6/11/85

Comments:

1. Trial plagued by variable botanical composition with eastern side being dominated by lotus and west by clover.
2. Good results from 89816F, 83938H, 89822H.

Treatment	C. Seed 9-1 kg/ha	Den. 11-6 sq.dm	Y. 28/8 kg/ha	C. 28-8 %	Y. 6-11 Rating
47298	481	12.79	2,317	82	4
47308D	286	12.88	2,196	53	3
68103H	370	18.15	2,389	86	5
83938H	775	34.17	2,252	84	7
84441B	330	13.30	2,253	83	5
89774B	349	18.33	2,364	80	3
89774F	624	16.76	2,535	87	5
89777C	367	21.70	2,452	84	5
89805D	714	15.38	2,453	85	5
89809I	275	15.15	2,441	86	3
89816F	913	24.34	2,343	86	6
89802D	497	21.01	2,257	65	4
89822H	450	23.18	2,596	93	7
89830F	412	11.68	2,180	49	3
89841E	641	26.37	2,406	85	3
89859F	802	19.72	2,320	75	5
89860D	264	11.08	2,159	76	3
89880F	139	12.42	2,249	66	4
89880J	105	5.03	2,154	38	2
GF123-1	306	12.10	2,338	86	5
GF143-3	648	19.53	2,525	85	5
GF146-1	257	9.51	2,402	86	5
GF183a-4	100	6.65	2,139	59	3
GF183a-5	454	18.66	2,517	89	6
GF189-2	435	21.20	2,472	94	6
GF199a-7	408	15.47	2,369	84	4
GF202-5	157	6.89	2,026	63	2

Table continued...

Treatment	C. Seed 9-1 kg/ha	Den. 11-6 sq.dm	Y. 28/8 kg/ha	C. 28-8 %	Y. 6-11 Rating
TOODYAY-E	245	10.81	2,170	63	3
ENFIELD	633	27.29	2,482	91	3
WOOGENELLUP	366	11.13	2,386	73	4
MT-BARKER	185	7.30	2,310	80	5
TALLAROOK	137	8.31	2,080	69	4
ESPERANCE	434	23.18	2,257	76	4
KARRIDALE	255	6.47	2,318	81	4
JUNEE	529	16.81	2,430	80	5
LARISA	338	5.82	2,485	75	5
METEORA	284	6.88	2,491	81	4
AVERAGE	403	15.38	2,345	78	4

85NO56/4534 EX

- Title: Screening early to midseason maturing clovers ssp subterranean.
- Aim: To screen in the field a range of promising early to midseason maturing lines of T. subterranean ssp subterranean.
- Location: D. Moulton, Beverley.
- Details: 61 crossbreds, 40 natural selections, 7 cultivars, 1 control, 2 replicates. Plots 2 m x 0.5 m. Old land, cropped 1983-84, sandy loam. Combined, sown by handbroadcasting at 40 kg/ha on 5/6/85. Plots harrowed and rolled. Sprayed with Lausban 18/6/85.
Capeweed a problem and some hand weeding carried out. Also sprayed with Hoegrass on 16/8/85 to control ryegrass. Grazed from 16/8 to 19/9, plots topped with mower on 19/9/85.
- Results: Clover establishment - 18/6/85
Clover content - 16/10/85
Days to flower
- Comment:
1. Late start to season and need to sow trial as soon as possible resulted in weed control problems. However reasonable clover growth finally achieved.
 2. Following assessment of seed yield and comparison with other trial results, a reduced number of lines will be selected for further testing.

85MO43/4534 EX

Title: Screening early to midseason maturing clovers ssp subterranean.

Aim: To screen in the field a range of promising early to midseason maturing lines of T. subterranean ssp subterranean.

Location: E. and M. Brown, W. Calingiri.

Details: 61 crossbreds, 49 natural selections, 7 cultivars, 1 control, 2 replicates. Plots 2 m x 0.5 m. Old land, cropped 1983-84, loamy sand over gravel. Sprayed 1/6/85 (Sprayseed), combined, sown by handbroadcasting at 40 kg/ha on 7/6/85. Harrowed by hand under very wet conditions. Sprayed with Lausban 19/6/85, Hoegrass 15/8/85. Grazed from 1/8 and then flash grazed on 21/9.

Results: Clover establishment - 19/6/85
 Clover growth rating - 6/9/85
 Days to flower

Comments:

1. Despite late start to season good growth of clover was evident. Grazing plus herbicide gave good ryegrass control and almost 100% clover plots.
2. Following assessment of seed production and comparison with other trial results a reduced number of lines will be selected for further testing.

Treatment	85NO56 BEVERLEY 1985			84MO43 W. CALINGIRI 1985			
	Den 18-6 sq.dm	C. 16-10 %	Days to Flower	Den 19-6 sq.dm	Y. 6-9 Rating	Y. 14-10 kg/ha	Days to Flower
Nil	0.00	0	0	0.00	0	0	0
DALIAK	7.29	65	100	6.38	5	1,500	94
SEATON PARK	5.17	77	99	4.63	4	2,050	97
DINNINUP	6.04	55	108	6.38	4	1,950	105
ESPERANCE	5.42	60	110	5.25	5	1,700	109
JUNEE	7.00	67	113	5.09	5	1,650	114
GREEN-RANGE	4.71	65	106	3.59	5	1,500	105
WOOGENELLUP	4.00	60	112	4.21	5	2,000	112
MARRADONG	5.54	55	106	3.79	4	1,350	99
65172	4.04	30	111	5.42	3	1,200	102
65177A	5.96	40	111	5.13	4	1,500	109
65195B	2.83	40	105	2.67	7	2,150	104
65320	5.50	55	105	4.21	3	1,250	107
65321B	5.59	60	106	5.42	4	1,500	108
65321C	4.17	52	105	4.79	5	1,250	106
65322B	7.17	60	106	2.80	5	1,550	106
65326A	4.08	45	106	2.79	6	1,600	104
65328A	3.50	40	97	4.25	2	1,450	99
65328C	2.71	50	99	4.25	6	1,650	95
65328F	3.34	60	99	2.84	3	1,300	101
65328G	4.67	45	100	2.25	1.	1,350	99

Table continued...

Treatment	85NO56 BEVERLEY 1985			84MO43 W. CALINGIRI 1985			
	Den 18-6 sq.dm	C. 16-10 %	Days to Flower	Den 19-6 sq.dm	Y. 6-9 Rating	Y. 14-10 kg/ha	Days to Flower
65328L	3.67	45	110	2.92	6	1,650	104
65328N	3.83	45	108	4.33	4	1,300	106
65332C	3.42	50	109	2.96	4	1,550	108
64332E	4.04	47	112	2.13	2	1,600	109
83909R	5.71	70	106	5.67	2	1,300	108
84004B	6.09	77	105	4.84	4	1,550	104
84411A	5.64	70	104	4.88	4	1,300	99
84412D	4.08	35	105	4.63	6	1,300	96
84413D	6.17	60	108	3.46	4	1,150	109
84419F	4.34	70	99	3.96	3	1,300	99
84419H	6.09	45	110	7.63	7	1,300	100
84421F	7.13	85	106	4.46	3	1,550	109
84428A	6.13	45	100	5.88	6	1,200	103
89794A	3.63	60	109	1.84	3	1,450	108
89805B	5.75	70	108	7.00	4	1,600	109
89805C	7.05	70	113	7.50	5	1,500	113
89816D	3.50	45	115	5.25	3	1,500	109
89818F	5.13	60	110	3.59	1	1,750	103
89838G	6.00	70	109	5.09	7	1,750	107
89840A	5.92	47	104	6.21	5	1,650	108
89840D	4.67	70	113	3.29	4	1,650	114
89841E	5.29	70	111	4.59	3	1,450	108
89846B	7.30	60	103	4.38	6	1,350	110
89846D	4.75	62	114	4.71	7	1,600	105
89848D	4.96	65	109	4.29	7	2,000	102
89848G	4.92	75	116	5.46	6	1,850	114
89858F	5.67	65	107	5.25	7	1,600	104
89859F	5.17	65	113	5.38	3	1,950	113
89860A	3.63	65	107	3.96	2	1,500	107
89860C	5.13	50	116	6.88	4	1,450	113
89860D	4.71	55	110	4.34	4	1,800	107
89860H	6.38	65	117	5.42	5	1,250	114
89862E	5.46	82	111	6.00	4	1,550	114
89881E	6.71	65	118	5.13	5	2,000	108
89903A	6.38	80	104	5.21	2	1,550	104
89934I	4.21	60	112	4.33	4	1,900	112
69S37-1	4.09	55	107	4.88	6	1,850	101
69S37-2	5.21	60	101	4.05	7	1,750	97
69S37-3	3.13	55	103	3.34	5	2,050	96
69S37-4	4.54	60	105	4.21	4	1,450	103
69S47-1	4.92	65	114	4.83	5	1,550	108
69S47-2	5.34	75	111	4.08	4	1,800	111
609S47-3	4.88	50	112	6.13	6	1,500	114
69S49-1	2.08	40	110	3.34	5	1,600	103
69S49-2	4.75	55	107	4.29	6	1,450	110
69S49-3	5.25	65	103	4.33	5	1,650	109
69S49-4	4.46	60	105	4.63	5	1,400	107
74S21-1	5.50	65	100	5.79	7	1,400	101
74S21-2	6.17	75	99	4.46	5	1,350	103

Table continued...

Treatment	85NO56 BEVERLEY 1985			84MO43 W. CALINGIRI 1985			
	Den 18-6 sq.dm	C. 16-10 %	Days to Flower	Den 19-6 sq.dm	Y. 6-9 Rating	Y. 14-10 kg/ha	Days to Flower
74S21-3	5.59	70	102	5.34	7	1,500	96
74S21-4	5.67	60	102	3.63	3	1,350	95
74S21-5	4.54	70	101	4.09	3	1,450	97
74S21-6	4.04	60	106	5.50	5	1,400	106
74S21-7	4.04	55	106	3.25	4	1,400	102
74S21-8	5.13	62	98	5.25	4	1,500	96
74S23-1	4.54	65	104	3.92	2	1,400	105
75S11-1	6.13	50	112	6.21	3	1,400	105
75S11-2	4.34	55	106	7.38	2	1,500	109
75S11-3	4.84	42	110	5.92	4	1,750	110
75S11-4	5.25	62	109	4.17	5	1,400	107
75S11-5	5.46	65	109	3.96	2	1,550	107
75S11-6	5.00	60	110	4.08	6	1,950	106
75S11-7	4.25	60	110	2.71	4	1,750	109
75S11-8	4.75	50	109	2.80	5	1,500	108
75S11-9	3.46	60	112	3.75	5	1,600	105
75S11-10	6.09	75	111	5.08	4	1,550	111
75S11-11	4.92	57	106	2.96	2	1,500	96
75S11-12	6.50	60	112	4.38	4	1,600	110
75S11-13	4.79	50	110	5.88	4	1,650	109
75S11-14	6.38	65	111	6.50	4	1,550	102
75S11-15	5.96	60	112	6.80	2	1,300	109
75S11-16	6.63	65	112	6.29	2	1,600	112
75S11-17	5.25	60	113	7.38	3	1,400	113
75S13-1	6.04	65	113	5.84	7	2,000	106
75S13-2	5.04	75	111	3.42	5	1,500	109
75S13-3	4.54	65	109	3.50	3	1,550	106
75S13-4	7.71	45	113	4.96	5	1,550	108
75S13-5	5.80	60	113	4.50	2	1,300	112
75S13-6	5.13	55	109	3.79	5	1,350	112
75S13-7	5.17	55	113	5.88	3	1,300	116
75S13-8	6.84	35	119	4.50	5	1,400	114
75S13-9	4.59	55	113	4.54	5	1,550	116
75S13-10	6.29	65	114	4.50	5	1,750	113
75S13-11	5.67	50	113	3.25	4	1,900	114
75S13-12	4.88	65	110	2.17	3	1,550	111
76S40-1	5.71	70	113	6.17	7	1,550	110
76S40-2	6.71	60	112	5.33	6	1,650	115
76S40-3	5.88	65	116	4.17	4	1,800	114
76S40-4	5.38	70	116	7.00	7	2,000	115
76S40-5	5.33	75	110	4.54	4	2,000	112
76S40-6	5.75	65	109	4.92	7	1,850	111
76S40-7	6.50	70	107	5.17	8	1,750	108
76S40-8	7.00	60	113	5.13	7	1,300	113
76S41-1	6.63	62	100	7.88	3	1,400	94
76S41-2	4.34	75	98	4.75	3	1,400	96
76S41-3	6.13	60	104	5.67	3	1,650	100
76S41-4	4.67	60	107	5.25	3	1,350	103
AVERAGE	5.07	59	107	4.74	4	1,550	105

Title: Screening early maturing clovers ssp. subterranean

Aim: To screen in the field a range of promising early maturing lines of T. subterraneum ssp. subterranean.

Location: G.K. and J.E. Forman, Tarwonga (south of Williams)

Treatment 1985: Grazed in common with paddock for majority of growing season. Closed up 4/9 to 15/10.

Results: Clover regeneration - 26/6/84
Clover content - 4/9/85
Yield - 15/10/85

Comments:

1. Regeneration low for most lines. Capeweed was a major competitor.
2. Spring growing conditions were poor.
3. Following assessment of 1985 seed yields, number of lines will be reduced for further assessment.

84NA27

Treatment	Den 26-6 sq.dm	C. 4-9 %	Y. 15-10 Rating	Treatment	Den 26-6 sq.dm	C. 4-9 %	Y. 15-10 Rating
NIL	0.00	0	0	76S16-2-1-1	11.71	52	2
NUNGARIN	16.93	62	2	76S16-9-4-1	5.86	70	3
NORTHAM	3.61	42	2	76S16-9-4-3	5.36	27	1
DWALGANUP	12.83	57	3	76S16-9-5-1-2	3.24	60	4
GERALDTON	10.34	54	2	76S16-9-5-1-3	9.71	75	4
DALIAK	6.35	60	3	76S16-9-5-1-4	6.10	30	1
DALKEITH	10.96	55	2	76S16-9-5-3-1	1.50	37	2
SEATON PARK	6.35	55	3	76S16-9-5-4-1	1.87	27	1
DAGLISH	1.50	45	1	76S16-102-3	11.83	45	2
SPENCERS-BR	8.09	47	2	76S16-103-2	9.09	40	1
BELLEVUE	9.96	57	1	76S16-105-1	8.47	60	4
MT-HELENA-A	5.36	65	2	76S16-105-2	4.11	30	3
COLLIE-A	7.60	72	3	76S17-107-2	2.37	47	1
TOODYAY-B	7.60	67	3	76S20-109-1	11.83	65	3
NORTHAM-C	11.08	70	3	76S24-9-1-1	5.11	32	1
BAULKAMAUGH	5.48	40	2	76S24-17-3-2	3.62	52	3
65324E	3.74	7	1	76S27-107-1	11.33	40	2
69969F	9.96	70	2	7627-107-2	5.85	37	2
70055	7.60	57	4	76S27-112-1	8.10	40	1
83994B	3.74	25	2	76S29-7-5	9.46	60	2
84410B	16.69	47	1	76S31-103-1	5.98	60	2
84419D	6.23	10	1	76S31-107-2	7.60	57	3
84419E	2.12	25	2	76S31-107-4	14.20	67	5
84419F	3.74	30	2	76S31-108-1	7.72	60	4
84422B	7.72	42	2	76S31-108-2	5.23	50	5
84447B	7.60	30	2	76S31-110-1	4.36	50	3
84450A	1.50	2	0	76S32-1-4-1	10.21	62	3
84451A	4.61	32	1	76S32-1-4-2	12.45	55	4
84452A	5.85	35	2	76S32-1-5-4	8.84	65	3
84452B	6.10	30	1	76S32-1-6-2	9.59	70	3
84452C	5.11	47	2	76S32-2-4-1	4.11	42	1
89937A	12.58	77	5	76S32-2-4-2	9.22	50	0
69S30-1-1-2	4.36	57	2	76S32-4-2-2	11.46	62	2
69S30-5-3-1	5.73	40	1	76S32-113-3	17.31	72	3
69S30-5-4-1	2.49	17	1	76S32-121-1	12.45	72	4
69S30-9-4-3	19.18	62	3	76S32-121-3	5.11	30	1
69S32-106-2	3.99	42	2	76S32-122-3	8.97	72	5
69S32-109-2	4.36	25	1	76S32-123-3	7.97	40	2
69S32-119-2	3.86	42	2	76S32-126-1	8.22	42	3
74S06-1-2-5-2	4.11	25	1	HD5-1-1	5.61	32	0
75S05-108	3.12	45	1	HD20-1-2	9.34	72	2
75S05-113	4.98	42	1	MD7-1-3-1-3	6.60	50	1
75S08-10-4	7.85	57	1	MD7-4-2-1	6.85	62	2
76S13-4-4-3	1.74	15	2	8B19-2-2-2	6.23	57	3
76S13-4-4-6	10.71	42	2	8B40-2-1-1	9.84	75	4
				AVERAGE	7.30	48	2

84WH35/4534 EX

Title: Screening early maturing clovers ssp. subterranean

Aim: To screen in the field a range of promising early maturing lines of T. subterreneum ssp. subterranean.

Location: Wongan Hills Research Station, Paddock 3ED.

Treatment 1985: Grazed in common with paddock with additional heavy grazing during September.

Results: Clover regeneration - 27/6/85 - No/sq. dm.
Clover content - 2/10/85 - %.

Comment:

1. Following collection of seed data for 1985, and comparison of results from other trials, a reduced number of lines will be further tested.

Treatment	Den 27-6 sq.dm	C. 2-10 %	Treatment	Den 27-6 sq.dm	C. 2-10 %
NIL	0.00	0	84452A	10.33	35
NUNGARIN	9.96	37	84452B	7.47	22
NORTHAM	9.84	37	84452C	6.60	27
DWALGANUP	6.60	50	89937A	10.96	60
GERALDTON	7.72	52	69S26-112-2	10.21	62
DALIAK	8.72	17	69S30-1-1-2	12.70	40
DALKEITH	11.96	45	69S30-5-3-1	10.34	20
SEATON PARK	10.46	37	69S30-5-4-2	10.59	37
DAGLISH	3.61	27	69S32-1-2-1	10.96	60
SPENCERS-BR	5.48	42	69S32-106-2	7.10	45
BELLEVUE	7.85	42	69S32-109-2	7.97	57
MT-HELENA-A	5.61	26	69S32-111-6	6.98	27
COLLIE-A	12.95	37	69S32-110-2	7.10	65
TOODYAY-B	8.22	27	69S36-8-3-2	4.86	27
NORTHAM-C	13.33	20	74S06-1-2-5-2	10.71	25
BAULKAMAUGH	4.11	35	74S28-9-3	7.97	52
15077	2.12	31	75S03-45-1	7.22	30
65324E	5.98	40	75S04-9-1	4.49	45
69969F	9.09	67	75S05-22-3	9.22	35
70055	5.98	27	75S05-106	8.47	27
70229	8.33	55	75S05-108	9.84	30
83994B	6.98	20	75S05-109	3.98	15
84407C	9.96	17	75S05-113	9.96	37
84410B	12.70	32	75S06-2-4-5	7.10	27
84418A	8.47	35	75S06-4-5	6.23	50
84419D	8.34	27	75S06-6-4	7.85	40
84419E	5.48	32	75S08-10-2	10.34	40
84419F	7.10	35	75S08-10-4	5.85	40
84422B	10.09	35	75S08-36-2	6.35	25
84447B	7.60	45	75S08-36-6	8.22	45

84450A	5.36	28	75S08-40-4	9.22	40
84451A	13.07	30	75S08-104	7.47	47
76S24-7-1-2	9.21	52	76S13-4-4-3	11.33	32
76S24-9-1-1	6.35	35	76S13-4-4-6	8.09	47
76S24-17-3-2	5.86	57	76S16-2-1-1	6.85	32
76S27-107-1	7.72	50	76S16-9-4-1	7.23	37
76S27-107-2	8.22	42	76S16-9-4-3	8.35	35
76S27-112-1	6.10	40	76S16-9-5-1-2	8.47	37
76S29-7-4	7.35	25	76S16-9-5-1-3	6.60	40
76S29-7-5	10.84	42	76S16-9-5-1-4	4.74	42
76S31-103-1	8.22	50	76S16-9-5-3-1	7.60	40
76S31-107-2	9.96	57	76S16-9-5-4-1	6.97	42
76S31-107-4	11.95	42	76S16-9-5-6-1	4.36	42
76S31-108-1	8.84	45	76S16-102-3	7.97	42
76S31-108-2	7.22	40	76S16-103-2	6.60	32
76S31-110-1	6.97	50	76S16-105-1	11.21	35
76S32-1-4-1	11.21	55	76S16-105-2	5.61	26
76S32-1-4-2	8.22	52	76S17-102-1	5.98	30
76S32-1-5-4	7.22	45	76S17-107-2	12.33	35
76S32-1-6-2	7.22	47	76S20-109-1	10.71	52
76S32-2-4-1	8.22	37	76S24-5-4-2	11.21	62
76S32-2-4-2	7.97	37			
76S32-4-2-2	11.46	50			
76S32-113-3	10.21	57			
76S32-121-1	9.46	37			
76S32-121-3	12.33	57			
76S32-122-3	5.36	25			
76S32-123-3	8.72	22			
76S32-126-1	11.83	45			
76S32-127-2	9.71	50			
GB346-22-3-1	7.85	35			
GB346-22-3-2	8.22	32			
HD5-1-1	6.23	26			
HD20-1-2	11.46	37			
MD7-1-3-1-3	4.48	25			
MD7-4-2-1	7.10	40			
8B19-2-2-2	9.71	45			
8B40-2-1-1	8.97	45			
CD-50-3	0.87	0			
CD-64-4-1	0.38	0			
CD-64-11-1	0.75	0			
3172	0.38	0			
5320	0.63	2			
5655	0.25	0			
AVERAGE	7.85	36			

85NO55/4534 EX

Title: Screening of early maturing clovers ssp subterranean.

Aim: To screen in the field a range of promising early maturing lines of T. subterraneum ssp subterranean.

Location: B. Johnston, Dangin.

Details: 85 crossbreds, 28 natural selections, 7 cultivars, 1 control, 2 replicates. Plots 2 m x 0.5 m. Old land (approximately 20 years), cropped 1983-84, yellow sand. Stubble burnt, combined, sown by hand broadcasting at 40 kg/ha on 6/6/85. Plots harrowed and rolled. Sprayed with Lausban on 18/6/85.

Results: Clover establishment - 18/6/85
Yield rating - 1/10/85
Days to flower

Comments:

1. Growing conditions poor due to late start to season and below average rainfall. Plant growth was poor and seed set will be low.

85WH33/4534 EX

Title: Screening of early maturing clovers ssp subterranean

Aim: To screen in the field a range of promising early maturing lines of T. subterranean ssp subterranean

Location: Wongan Hills Research Station, Paddock 2 E C

Details: 85 crossbreds, 28 natural selections, 7 cultivars, 1 control, 2 replicates. Plots 2 m x 0.55 m. Old land, cropped 1983-4, loamy sand over gravel. Sown by hand into dryseedbed on 13/5/85 at 40 kg/ha, harrowed and rolled. Substantial rains not received until 26/5/85. Weed infestation (turnip) severe in patches and necessitated some hand weeding.

Results: Clover establishment - 26/6/85
Clover content - 1/10/85
Days to flower

Comment:

1. Following collection of seed yield data for 1985 and comparison of results from other trials, a reduced number of lines will be further tested.
2. Note - difference of nine days in average days to flower for trials 85NO55 and 85WH33 due to a three week difference in time of germination.

Treatment	Den 18-6 sq.dm	Y. 1-10 Rating	Days to Flower	Den 26-6 sq.dm	Y. 2-10 Rating	Days to Flower
NIL	0.04	0.5	0	0.17	1.9	0
NUNGARIN	2.88	3.6	80	1.58	1.8	95
NORTHAM	4.71	5.3	80	3.00	3.0	97
DWALGANUP	3.92	4.5	90	3.54	2.5	94
GERALDTON	6.00	4.0	92	5.34	4.5	97
DALIAK	6.29	4.3	94	3.71	3.8	105
DALKEITH	3.34	5.0	92	2.38	4.1	99
SEATON PARK	4.25	3.9	97	2.92	3.2	109
DAGLISH	3.04	3.4	80	3.09	3.0	93
SPENCERS-BR	3.42	4.0	90	2.55	3.3	96
BELLEVUE	3.42	4.0	88	3.00	3.6	96
MT-HELENA-A	4.59	4.0	91	2.33	3.1	99
COLLIE-A	4.75	4.8	92	3.92	4.0	97
TOODYAY-B	6.38	5.3	94	3.75	4.4	102
NORTHAM-C	3.92	4.5	92	2.00	3.3	98
BAULKAMAUGH	6.13	5.0	96	4.25	3.0	104
15077	4.92	5.3	92	3.46	3.4	94
65324E	4.54	3.3	97	3.38	3.8	107
69969F	3.67	4.5	91	3.13	3.0	96
70055	5.55	4.3	94	5.92	5.0	104
70119	3.17	4.1	92	2.96	3.9	102
83994B	4.54	4.0	95	3.04	4.3	99
84407C	6.71	5.1	93	3.08	2.9	105
84410B	3.71	4.0	92	3.46	3.3	105
84418A	5.38	4.8	80	4.84	3.6	99
84419D	5.34	3.5	94	4.29	3.2	105
84419E	5.34	4.5	90	5.13	4.8	101
84419F	5.92	4.8	95	4.09	4.5	106
84422B	4.13	3.6	96	3.33	3.4	106
84447B	5.46	4.0	95	3.79	4.0	105
84450A	5.46	6.5	92	3.54	4.3	100
84451A	4.71	4.0	92	3.84	4.1	102
84452A	3.75	5.3	94	3.63	4.3	97
84452B	5.50	5.3	95	4.21	4.6	105
84452C	3.54	5.3	96	3.96	3.6	102
89937A	5.34	5.5	93	4.67	4.1	102
69S26-112-2	5.54	3.5	92	3.29	3.0	102
69S30-1-1-2	3.09	4.0	96	4.50	3.0	106
69S30-5-3-1	5.34	4.3	96	3.59	3.8	103
69S30-5-4-1	5.42	4.1	96	3.79	3.3	107
69S30-9-4-3	3.88	4.3	92	3.42	4.1	105
69S32-1-2-1	3.71	2.8	96	2.38	2.3	104
69S32-106-2	5.38	5.8	93	3.21	4.1	105
69S32-109-2	4.29	4.3	92	2.92	3.1	99
69S32-111-6	5.38	3.3	94	2.42	2.5	104
69S32-119-2	4.46	5.8	96	2.92	4.4	103
69S36-8-3-2	4.00	4.8	93	3.54	4.0	102
74S06-1-2-5-2	3.63	4.0	92	3.05	3.6	101
74S28-9-3	4.25	3.8	90	2.46	3.2	96
75S03-45-1	4.21	4.3	80	2.63	2.8	92

Table continued...

85NO55 DANGIN 1985

85WH33 WHRS 1985

Treatment	Den 18-6 sq.dm	Y. 1-10 Rating	Days to Flower	Den 26-6 sq.dm	Y. 2-10 Rating	Days to Flower
75S04-9-1	5.29	4.8	87	4.04	2.9	93
75S05-22-3	3.54	2.3	80	2.79	2.8	92
75S05-106	4.21	3.5	80	2.71	2.5	92
75S05-108	4.30	4.8	80	2.58	2.5	94
75S05-109	2.54	3.3	80	2.88	2.7	95
75S05-113	4.63	4.8	84	4.00	3.3	93
75S06-2-4-5	3.38	5.0	84	3.63	3.8	94
75S06-4-5	3.84	5.5	84	3.25	3.9	96
75S06-6-4	3.04	3.5	80	3.42	3.5	100
75S08-10-2	2.54	4.4	89	1.38	3.1	97
75S08-10-4	2.96	4.8	80	2.46	3.6	94
75S08-36-2	4.34	4.4	86	3.29	3.8	96
75S08-36-6	4.46	4.5	80	3.55	2.2	93
75S08-40-4	5.59	5.0	83	3.83	3.0	95
75S08-104	3.88	4.3	80	3.54	2.8	92
76S13-4-4-3	3.79	4.5	91	2.46	2.9	101
76S13-4-4-6	3.21	4.0	93	3.75	3.0	99
76S16-2-1-1	3.59	3.8	93	2.21	2.9	100
76S16-9-4-1	4.88	4.0	96	2.84	2.4	103
76S16-9-4-3	3.63	4.8	91	2.79	3.4	101
76S16-9-5-1-2	2.63	3.3	94	4.09	4.0	97
76S16-9-5-1-3	3.38	5.3	95	4.13	4.1	102
76S16-9-5-1-4	3.96	5.5	96	3.50	4.4	103
76S16-9-5-3-1	4.58	5.4	91	2.80	3.5	104
76S16-9-5-4-1	4.75	6.0	94	3.63	4.4	98
76S16-9-5-6-1	4.55	6.3	95	3.83	3.6	99
76S16-102-3	4.29	5.0	96	2.71	3.1	102
76S16-103-2	4.92	3.8	93	3.21	2.9	97
76S16-105-1	4.38	4.3	96	2.92	2.6	104
76S16-105-2	5.17	4.1	96	3.80	3.4	100
76S17-102-1	3.88	4.1	92	3.58	3.3	104
76S17-105-2	3.96	5.8	94	3.46	3.1	105
76S17-107-2	3.13	5.0	92	2.88	3.5	102
76S20-109-1	4.75	1.6	80	4.00	2.6	98
76S24-5-4-2	4.33	4.3	91	3.79	4.0	96
76S24-7-1-2	4.21	4.0	88	2.67	4.0	94
76S24-9-1-1	3.75	4.1	89	4.38	3.1	95
76S24-17-3-2	4.67	4.3	93	3.33	2.4	100
76S27-107-1	3.96	4.3	91	2.63	3.5	99
76S27-107-2	3.92	3.3	92	2.96	2.1	100
76S27-112-1	4.55	5.3	89	3.34	3.1	97
76S29-7-4	2.59	3.9	80	2.34	2.2	94
76S29-7-5	3.50	4.0	94	3.17	4.3	96
76S31-103-1	4.13	4.6	95	2.79	3.9	101
76S31-107-2	3.96	4.3	94	3.13	4.3	102
76S31-107-4	3.67	4.3	94	2.88	4.1	103
76S31-108-1	5.75	4.4	92	3.21	3.5	103
76S31-108-2	3.96	4.0	94	3.00	3.9	101
76S31-110-1	3.71	4.5	93	3.00	3.8	101

Table continued...

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Treatment	Den 18-6 sq.dm	Y. 1-10 Rating	Days to Flower	Den 26-6 sq.dm	Y. 2-10 Rating	Days to Flower
76S32-1-4-1	3.29	5.3	93	3.00	4.5	101
76S32-1-4-2	3.00	4.0	91	3.33	4.3	97
76S32-1-5-4	5.80	5.3	93	3.96	5.3	100
76S32-1-6-2	4.50	4.3	93	2.79	3.5	94
76S32-2-4-1	4.50	4.1	94	4.29	3.9	103
76S32-2-4-2	3.50	3.5	92	4.25	3.9	103
76S32-4-2-2	4.05	4.5	93	3.13	3.0	99
76S32-113-3	4.33	4.1	84	3.21	3.8	97
76S32-121-1	5.21	5.0	92	3.00	4.4	97
76S32-121-3	5.04	5.0	92	3.17	5.0	96
76S32-122/3	5.00	4.8	91	3.97	3.9	98
76S32-123-3	3.59	4.3	88	3.50	5.1	98
76S32-126-1	2.75	3.3	96	2.54	4.3	100
76S32-127-2	2.25	4.0	89	4.09	3.5	94
GB346-22-3-1	2.13	3.5	80	3.17	2.5	95
GB346-22-3-2	5.29	2.5	80	2.54	2.5	93
HD5-1-1	4.67	4.5	80	2.42	2.1	96
HD20-1-2	3.13	2.8	80	2.46	3.0	93
MD7-1-3-1-3	4.96	4.8	84	4.17	3.5	95
MD7-4-2-1	3.34	5.3	91	2.96	2.6	94
8B19-2-2-2	4.46	4.0	92	3.17	3.5	97
8B40-2-1-1	5.05	4.3	94	4.04	4.3	101
Average	4.24	4.3	89	3.30	3.5	98

85WH57/4534 EX

Title: Effect of deep ripping on legume growth

Aim: To compare top growth and root length of annual legume species sown in ripped and unripped soil.

Details: 9 legumes, ripped soil, unripped soil, 3 replications (split plot).

Site: Wongan Hills Research Station, Paddock 2 E C

Treatment: Loamy sand, cropped 1983-84. Ripping treatments (Agroplough) applied 10.5.85, site combined 14.5.85, legumes sown by handbroadcasting and harrowing. Fertiliser 100 kg/ha Agras No 1 plus 25 kg/ha muriate of potash. Weed growth (capeweed) necessitated heavy grazing for periods.

Results: Legume establishment - 26/6/85
Root depth - 23/7 and 5/11/85
Penetrometer readings (Courtesy R. Jarvis) - 30/7/85

Comments:

1. The typical hardpan was broken by ripping.
2. Significant differences in rooting depth between soil treatment and legumes for the July sampling.
3. For November sampling no difference could be detected in rooting depth, due to growth of capeweed and grass.

Legume	Density - 26/6 No/sq.dm.		Max. Root depth 23/7, mm	
	Unripped	Ripped	Unripped	Ripped
T. subterranean cv Nungarin	11.8	11.2	250	450
T. subterranean cv Northam	2.8	3.8	233	567
T. subterranean cv Geraldton	14.3	19.6	200	667
T. subterranean cv Dalkeith	10.4	11.8	350	717
T. subterranean cv Daliak	11.8	18.0	317	483
M. polymorpha Serena	15.6	20.1	317	500
M. polymorpha Circle Valley	10.2	13.4	150	350
M. murex 64.11.1	14.4	14.8	250	383
M. murex 5320	11.6	13.6	167	383
Mean	11.4	14.0	248	500

Penetrometer Readings - 30/7/85

Depth (mm)	Unripped	Ripped
3.5	5.6	3.2
7.0	13.1	8.9
10.5	27.2	9.9
14.0	35.0	11.7
17.5	34.4	12.9
21.0	28.3	13.8
24.5	26.1	14.3
28.0	23.8	14.5
31.5	30.4	15.8
35.0	22.0	19.5
38.5	21.1	19.9
42.0	20.8	20.1

VI. STUDIES ON FACTORS DETERMINING PERSISTENCE OF CLOVER.

In 1984 it was shown that cv Trikkala was able to increase its proportion in a mixture of cv Trikkala and Yarloop, when grazed. The study was extended in 1985 to compare three cultivars Yarloop, Trikkala and Dinninup under conditions where root diseases were unlikely to be a determinant in the result.

A site was selected at Wooroloo 60 kms NE of Perth which had been cleared and sown to only one crop of oats. The cultivars were sown alone or in 50/50 mixtures and either ungrazed for the first 62 days or heavily grazed from prior to germination with sheep. Assessments made included plant height, plant density, cultivar composition, total yield, and average weight of each cultivar.

The cultivars used were selected on the basis of their seedling morphology - cv Yarloop an erect seedling, cv Trikkala and Dinninup having a more prostrate habit as a seedling. Results from an assessment at 48 days from sowing are presented in Tables 1 and 2.

While statistical analysis are yet to be completed some clear trends can be seen.

Ungrazed plants of cv Yarloop were taller and heavier than the other two cultivars. Although efforts were made to equalise plant numbers the density of cv Yarloop was lower. In the mixtures the proportion of each cultivar present was similar to the proportion sown.

Where grazed a markedly different result was obtained. Not unexpectedly there was little difference in height at such an early stage of growth. Plant density was reduced with cv Yarloop falling on average by 67%, cv Trikkala by 36% and cv Dinninup by 45%. Weight per plant did not fall as much, probably due to the lower plant density under grazing. However major differences were still apparent with the cv Yarloop plant weight falling on average by 51%, cv Trikkala by 22% and cv Dinninup by 26%. Reductions were greatest in the pure cultivar swards.

Table 1: Effect of grazing in clover plant height and density - day 48

	Plant height - mm			Plant Number	
	Yarl	Trikk	Dinn	Sq. dm	Proportion
I. Ungrazed					
Yarloop	25			16.3	100
Trikkala		22		24.3	100
Dinninup			24	28.0	100
Yarl + Trikk	27	23		21.5	46/54
Yarl + Dinn	30		24	24.6	42/58
Trikk + Dinn		21	23	26.8	52/48
Average	27	22	23	23.7	

Table continued...

	Plant height - mm			Plant Number	
	Yarl	Trik	Din	Sq. dm	Proportion
II. Grazed					
Yarloop	17			6.8	100
Trikkala		15		17.8	100
Dinninup			16	13.8	100
Yarl + Trik	13	15		10.8	29/71
Yarl + Dinn	14		15	10.8	26/74
Trik + Dinn		12	13	15.4	50/50
Average	14	14	14	12.6	

Table 2: Effect of grazing in clover plant height and density - day 48

	Weight/plant - mg			Yield	
	Yarl	Trik	Din	kg/ha	Proportion
I. Ungrazed					
Yarloop	32			520	100
Trikkala		26		650	100
Dinninup			20	562	100
Yarl + Trik	32	25		607	51/49
Yarl + Dinn	27		19	547	52/48
Trik + Dinn		24	18	559	59/41
Average	30	25	19	574	
II. Grazed					
Yarloop	14			98	100
Trikkala		16		292	100
Dinninup			13	175	100
Yarl + Trik	15	23		221	22/78
Yarl + Dinn	15		15	166	25/75
Trik + Dinn		19	13	254	60/40
Average	15	20	14	201	

The combined effect of plant density reduction and plant size was clearly seen in the proportion of each cultivar in the total yield of the mixed cultivar swards. Where the potentially taller growing seedling cv Yarloop was mixed with a shorter seedling, cv Trikkala and Dinninup, the taller seedling was adversely affected with the proportion changing from approximately 50/50 to 24/76.

The results provide confirmation of the results of 1984. Also the results indicate that cv Trikkala could also increase in proportion when sown into swards of cv Dinninup, a cultivar known from field observation to be invasive.

Implications of the results for selection and management include

- seedling morphology should probably be included as a selection character in the National Subterranean Clover Improvement Program with selection being for the more prostrate seedling. This presupposes that there is no penalty imposed on animal production, particularly at the early growth stage.

- grazing management can be used to affect the proportion of cultivars in a mixed sward.

It is hoped to extend the work in 1986 to compare a number of species differing in seedling morphology. Such work is of relevance with the extension of the use of medics, viz Medicago polymorpha cvv Serena and Circle Valley, into portion of the area to which subterranean clover is also adapted.

Publications

Gillespie, D.J., Nicholas, D.A. - Pasture legume recommendations - 1986.
West. Aust. Dept. Agric. Farmnote 77/85.