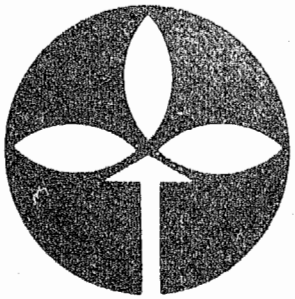

DEPARTMENT OF AGRICULTURE, SOUTH AUSTRALIA

Agronomy Branch Report

REPORT ON HERBAGE SEED PRODUCTION

1972-73 SEASON

By D.C. Ragless,

Senior Seed Production Adviser.

Report No. 48.

REPORT ON HERBAGE SEED PRODUCTION
1972-73 SEASON

- CONTENTS -

- Contents -

REPORT ON HERBAGE SEED PRODUCTION

1972-73 SEASON

1. SEASONAL:

1.1 Production - Certified Seeds

Due to the abnormally dry finish to the season, total production was down to 1,080 tonnes of certified seed compared to 1,573 tonnes for the 1971-72 season. There were increases in production of some perennial species of seeds, namely Currie cocksfoot, Seedmaster phalaris and Du Puits and Siro Peruvian lucerne. Almost all other crops were down in production, particularly strawberry and most subterranean clovers. Statistical details appear in section 1.5.2

1.2 Production - Uncertified Seeds

The total quantity of uncertified seeds produced 1,165 tonnes compared to 1,926 tonnes last year. The pattern of production however, is in some instances, different. Production of Hunter River lucerne, Australian phalaris and strawberry clovers was severely reduced but almost all other crops showed an increase in production. The most significant percentage increases being for Hannaford barrel medic, Currie cocksfoot, Demeter fescue, Chou moellier, Du Puits lucerne, Seedmaster phalaris, all ryegrasses and Yarloop subterranean clover. These figures, details of which occur in section 1.5.3 indicate that curtailed certified seed production of improved cultivars tends to stimulate casual production, particularly of common cultivars - even in drought seasons.

1.3 Weather

The 1972-73 season was predominantly dry. Good opening rains did not come until June in most districts, while spring and early summer were unusually dry in all districts. Late summer rains were substantial from February and generally did not help seed producers apart from some late lucerne seed crops.

The fine weather in December and January was ideal however, for harvesting grass seed crops enabling rapid uninterrupted harvesting with minimal problems of seed drying.

Continuous frosts at the beginning of the season restricted the effectiveness of most herbicides used on subterranean clover and annual medic seed crops.

Aphis attacks at flowering reduced lucerne seed pollination and seed yield in northern districts.

1.4 Late Harvesting of Lucerne

The late summer rains enabled growers to close up extra lucerne paddocks for late seed crops. This was encouraged by the shortage of seed and the consequent high prices being offered. Despite difficulties of rain and continued lucerne regrowth, some growers harvested lucerne in May and into June. Most of this seed was a poor sample off the header and took more than the usual amount of cleaning to get seed to meet minimum standards of physical purity.

1.5 Seed Cleaners

One smaller seed grower cleaner ceased operation during the season because he sold his property and moved from the district.

Due to the reduced quantity of seed grown, cleaning plants have been able to deal rapidly with processing. Despite less seed there has been pressure on some of them to get seed ready for sale due to buoyant seed markets.

Once again lack of integrated policy and planning have led to higher than necessary operating costs. A typical instance concerned four fields of Siro Peruvian lucerne. These fields are all within a mile of each other. They were all harvested for seed almost simultaneously. Seed was, however, cleaned at four different cleaners. The cost of a complete machine clean-down, taking possibly half a day, had to be absorbed by each cleaner. If the seed had gone to a single cleaner the delay and cost of one clean-down is all that would have been necessary.

1.6 Statistics

1.6.1 Crops sown under supervision

Hectares for which Supervision of Sowing has been Carried Out

Crop Variety	1971-72		1972-73	
	No. of Paddocks	Hectares Sown	No. of Paddocks	Hectares Sown
Barrel medic:				
Borung	1	8	-	-
Brome grass:				
Deborah	-	-	1	2
Cocksfoot:				
Currie	-	-	2	14

Hectares for which Supervision of Sowing has been Carried Out (Contd.)

Crop Variety	1971-72		1972-73	
	No. of Paddocks	Hectares Sown	No. of Paddocks	Hectares Sown
Disc medic:				
Tornafield	1	5	-	-
Fescue:				
Chewings koket	1	2	-	-
Tall demeter	5	21	17	188
Gama medic:				
Paragosa	3	55	6	67
Kale:				
Marrow stem var. stabil	-	-	2	23
var. midas	1	19	1	15
var. Green Angeliter	4	20	2	23
var. green	1	2	-	-
var. green ring	2	15	1	8
var. debonair	-	-	1	2
Thousand head	4	37	-	-
Chou moellier	-	-	3	43
Love grass:				
Renner	-	-	1	2
Lucerne:				
Du Puits	2	13	1	12
Hunter River	74	1,846	61	1,249
Paravivo	1	3	2	8
Siro Peruvian	13	427	3	89
C.S.I.R.O. combined	-	-	1	2
Onions:				
Early lockyer	1	4	-	-
Phalaris:				
General select	-	-	1	4
Seedmaster	3	29	6	58
Sirocco	1	16	2	5
Tunisian	-	-	1	2
Rape:				
Giant Emerald	4	26	6	66
Red clover:				
Aberystwyth S123	1	.4	-	-

Hectares for which Supervision of Sowing has been Carried Out (Contd.)

Crop Variety	1971-72		1972-73	
	No. of Paddocks	Hectares Sown	No. of Paddocks	Hectares Sown
Ryegrass:				
Tama	-	-	1	5
Hora perennial	-	-	2	10
Lamora perennial	1	2	-	-
Medea perennial	7	152	-	-
Perma perennial	-	-	1	7
Splendor perennial	-	-	1	5
Stadion perennial	1	2	-	-
Terhoy	-	-	1	10
Terpas	-	-	1	9
Shaftal clover:				
Maral	18	192	5	50
Strawberry clover:				
O'Connors	-	-	5	17.4
Palestine	1	16	5	104
Trefoil, birdsfoot:				
Odenwalder	2	2	-	-
Bosnalotus	3	9	-	-
Uniharvest:				
Narrow-leaf lupin	-	-	3	13
White clover:				
Aberystwyth S100	1	.4	-	-
Aberystwyth S184	-	-	1	.4
Ladino tillman	1	.4	-	-
Milka	4	12	-	-
Tamar	-	-	1	7
Total	162	2,933	148	2,120

1.6.2 Production - certified seeds

Crop Variety	Hectares Inspected from 1/7/72-30/6/73		kg Seed Produced from 1/7/72-30/6/73	
	Accepted	Rejected	Released	Rejected
Barrel medic:				
Jemalong	638	90	99 430	1,285
Cocksfoot:				
Currie	261	-	115,375	5,181
Disc medic:				
Tornafield	45	-	8,950	-
Fescue, tall:				
Demeter	313	9	124,890	16,681
Gama medic:				
Paragosa	35	-	1,161	331
Kale:				
Green marrow stem	12	-	1,646	-
Midas marrow stem	20	-	6,694	-
Green ring marrow stem	7	-	-	-
1,000 head	28	-	20	-
Lucerne:				
African	4	-	102	-
Cancreep	55	-	2,571	212
Du Puits	51	-	14,616	1,236
Hunter River	2,164	-	390,110	26,783
Paravivo	7	-	336	20
C.S.I.R.O.	1	-	151	-
Siro Peruvian	106	-	16,076	70
Onions:				
Early lockyer	.1	-	119	-
Phalaris:				
Australian	88	6	1,660	-
Seedmaster	170	-	65,542	10,447
Sirocco	78	-	4,317	9,318
Rape:				
Giant Emerald	8	10	2,945	-
Rose clover:				
Kondinin	14	-	899	-

Production - certified seeds (Contd.)

Crop Variety	Hectares Inspected from 1/7/72-30/6/73		kg Seed Produced from 1/7/72-30/6/73	
	Accepted	Rejected	Released	Rejected
Ryegrass:				
Medea	8	-	5,159	-
Strand medic:				
Harbinger	298	-	26,360	726
Strawberry clover:				
O'Connors	14	80	535	-
Palestine	121	223	13,780	1,045
Subterranean clover:				
Bacchus Marsh	9	-	4,715	-
Clare	261	8	115,032	-
Howard	30	-	19,275	-
Mt. Barker	247	-	10,173	994
Tallarook	10	-	8,185	-
Woogenellup	73	-	11,800	-
Yarloop	53	-	7,494	-
White clover:				
Milka	4	-	-	513
Total	5,233.1	426	1,080,118	74,842

1.6.3 Production - uncertified seeds

Seed Description	kg of Uncertified Seed Cleaned from 1/7/72 to 30/6/73
Barrel medic:	
Hannaford	66,188
Jemalong	13,169
Burr medic:	963
Cocksfoot:	
Currie	3,257
Disc medic:	
Tornafield	405
Fescue, tall:	
Demeter	23,512

Production - uncertified seeds (Contd.)

Seed Description	kg of Uncertified Seed Cleaned from 1/7/72 to 30/6/73
Gama medic:	
Paragosa	3,113
Kale:	
Chou moellier	20,999
1,000 head	2,150
Lucerne:	
African	3,322
Du Puits	4,556
Hunter River	667,700
Siro Peruvian	397
Phalaris:	
Australian	6,976
Seedmaster	1,897
Canary grass	19,680
Rape:	
Giant Emerald	150
Ryegrass:	
Medea	9,630
Annual Wimmera	94,949
Other perennial	12,040
Tamar	650
Shaftal clover:	66,466
Snail medic:	22,192
Strand medic:	
Harbinger	21,785
Strawberry clover:	
O'Connors	3,197
Palestine	2,503
Subterranean clover:	
Bacchus Marsh	3,437
Clare	11,090
Geraldton	50
Mt. Barker	19,473
Woogenellup	11,027
Yarloop	45,992

Production - uncertified seeds (Contd.)

Seed Description	kg of Uncertified Seed Cleaned from 1/7/72 to 30/6/73
Tall wheat grass:	41
Vetch:	
Purple	2,750
Total	1,165,706

1.6.4 Crops registered for 1972-73*

Crop	Hectares Applied for	Hectares Cancelled	Hectares Accepted	Hectares Rejected
Cocksfoot:				
Currie	240	-	228	12
Fescue:				
Demeter	564	-	552	12
Lucerne:				
African	64	-	64	-
Cancreep	48	-	48	-
Du Puits	95	-	95	-
Hunter River	15,526	316	15,190	20
Siro Peruvian	639	8	631	-
Phalaris:				
Australian	2,234	204	2,024	6
Seedmaster	101	-	101	-
Sirocco	39	-	39	-
Strawberry clover:				
O'Connors	68	-	68	-
Palestine	930	3	825	102
Veldt grass:				
Mission	10	-	10	-
White clover:				
Milka	4	-	4	-
Total	20,562	531	19,879	152

* Registration inspections are made on perennial crops in non-harvest years to maintain certification eligibility.

2. INDUSTRY TRENDS:

2.1 Specialisation

Many of the specialised south eastern seed growers use irrigation. At the end of last spring they were feeling the strain of continuous irrigation in their efforts to try to combat lack of rain. Growers who normally would not commence irrigation until October, watered crops from late July until December. Several were still unable to keep up with watering and crops suffered. However, the use of irrigation in the drought paid off and almost all the substantial amount of perennial grass seed was produced under irrigation and many crops yielded excellently.

2.2 Lack of Interest in New Varieties

The lack of interest in seed production of new varieties is becoming even more pronounced than previously. This is a reflection of the lack of demand for seed as a result of lack of farmer appreciation of the use and advantage of newer varieties.

The situation with lucernes during the last twelve months illustrates this. Excluding "Paravivo", which has just been released and for which there is a moderate initial demand for basic seed, only one crop of Siro Peruvian was sown in the South East compared to seven for the previous year, and thirty-four the previous year! In the case of Hunter River, in the South East for the same period, a similar number of paddocks have been sown each year - fifty-one in the last twelve months, forty-two in 1971-72 and seventy-nine in 1970-71.

A similar pattern has developed with other species. Obviously there is a lack of communication concerning the value of new releases. Graziers are not aware of their advantages because of lack of promotion by breeders and official institutions and lack of any incentives for seed merchants to promote new seeds.

2.3 Multiplication for Export

Following on from the efforts of the last few years and aided by the overseas trip of Mr. Ragless, many more foreign varieties have been sown for multiplication for Europe and elsewhere. While shortages and consequent high prices for local seeds have temporarily curtailed the enthusiasm of many seed growers for overseas multiplications, most serious growers are aware that in the long term these crops, and others, will lead to an exciting future. The greatest number and area of plantings have been to kale and perennial ryegrass. So far generally kale crops have been most disappointing, particularly as many of the failures have been due to unfortunate circumstances which seem to plague kale projects and not due to unsolved technical problems. The various ryegrass crops are all looking well at present and there appears to be justification for great optimism for these crops.

Plantings of red and white clover have all proved disappointingly low yielding. Shaftal clover plantings have been, however, particularly encouraging with excellent yields of high quality seeds.

2.4 Sowings Under Supervision

There has been a ten-fold increase in the area of Demeter tall fescue sown for certified seed production this season compared to last year. Apart from Seedmaster phalaris and pilot sowings of new crops, there has been no other significant increases in sowings. Hunter River lucerne sowings decreased by about 30% and other lucernes were similarly decreased. It is a pity to see Medea perennial ryegrass, which has just earned itself a sizeable seed market, no longer being planted. It also looks as if Sirocco phalaris is ultimately going to share a similar fate for it showed a decrease in planting again this year, despite increases in farmer acceptance of the variety.

2.5 Further Outlook

Seasonal growth conditions are excellent and make possible record seed production, particularly of annual legume seeds from the 1973-74 harvest.

Seed markets are also good. Not only is local domestic demand restored but export markets, particularly in the Mediterranean region, for seed such as Jemalong barrel medic and Clare subterranean clover, are expanding rapidly. A record production of seeds will be needed to supply markets.

Consequently emphasis is now on production rather than marketing. However, growers must not lose sight of the need to gear production to demand in terms of variety and quality, as well as quantity. Furthermore, seed traders need to adopt a more unified approach to marketing policies, particularly export policies. These must involve provision for financing and storing carry-over seed stocks in favourable seasons as a seed "bank" in readiness for drought seasons and sudden increases in demand, especially export demand.

3. NEW DEVELOPMENTS:

3.1 Charcoal banding

This technique of crop establishment has been the outstanding success story for this season. It will unquestionably revolutionise seed crop establishment and weed control in the year of planting, enabling payable seed returns in the establishment year.

Essentially the technique involves spraying a narrow band of charcoal slurry on the soil surface immediately over the top of the sown crop. This is followed by normal broad-acre spraying with Diuron. The charcoal prevents the Diuron reaching crop plants which grow unaffected while germinating weeds are killed.

Over 150 hectares of commercial crops have been established using this technique during the last three months and results are in every case, spectacularly successful.

Seed production advisers have played a large part in getting commercial acceptance of this method. Mr. Jongebloed at Naracoorte has worked with many growers assisting with the actual operation and a 6 hectare ryegrass seed crop was sown using Departmental equipment at Meadows for a farmer by seed production advisers.

3.2 Crop Weed Control

Weed control in seedling perennial grass crops has been the best ever this season. With these crops a combination of wettable powder and hormone-type herbicides have been used most successfully with no apparent damage to seed crop.

With continued effective control of grassy weeds in annual legume seed crops with Treflan, some broad leaf weeds have now become a problem. Milk thistle (Sonchus sp.) and shepherds purse (Capsella bursa-pastoris) have become major causes of reduced seed yields in the Naracoorte region.

A large acreage of established perennial grass seed crops was treated with Atrazine instead of Diuron this season and weed control has been as good as previously.

Poor weed control has retarded growth in some kale crops. Yields from these will be poor and uneconomic.

Dock is still a problem of perennial seed crops, even in dry years. More hormone-type herbicides should be used to control dock, especially when plants are small. Chemical control of scattered large dock plants is not as economically effective as hand roguing.

3.3 Seed contracts with Department of Agriculture

Following the overseas trip by Mr. Ragless, European seed firms asked the Department of Agriculture to help them find contract growers for up to 300 hectares of perennial ryegrass seeds for autumn, 1973 planting. We were unable to find any growers interested in these crops. Because of this the Department of Agriculture has contracted with the United Kingdom for 5 hectares

of ryegrass seed crop on the Struan Research Centre. This crop, despite late sowing, is looking well and can be expected to yield profitably. It is hoped that this will prove an effective demonstration to South East landowners and European merchants alike of the feasibility and profitability of this system. Following Cabinet approval, a further 170 hectares of land have been purchased at Struan on which expanded contract sowings of perennial ryegrass for the European market will be made. It is intended that these fully commercial plantings be used as the basis for further publicity of this potential market.

4. SOME SPECIAL ACTIVITIES OF SEED PRODUCTION SECTION:

4.1 Schools

The Seed Production Section has convened three training schools during the year.

In November, 1972 two schools for seed cleaners were held in Naracoorte on seed certification procedures. They were attended by representatives from all South East cleaning sheds.

In May, 1973 a school for officers of the Department's Weeds Section was held in Adelaide on seed inspection and sampling.

4.2 New Pasture Species & Variety Trials for Seed Production

Last year's trials were again harvested. However, results are not available because samples are awaiting thrashing and cleaning at Northfield.

Another series of trials has been planted this year and have established very well and will provide information on possible yields under commercial conditions.

4.3 Weed Control Trials

4.3.1 Seedling phalaris tuberosa

The three wettable powder herbicides, Etazine, Igram and Tribunil, were compared for control of toadrush and capeweed and crop tolerance. Weed control has been excellent and crop damage appears to be negligible.

4.3.2 Seedling perennial ryegrass

The same three wettable powder herbicides were used on a very young crop of European Tetraploid perennial ryegrass for control of capeweed, sorrel, poa and toadrush. Weed control has been highly satisfactory and crop damage again negligible.

4.3.3 Shaftal clover

Tribunil and MCPA were tested for control of shepherd's purse (Capsella bursa-pastoris) and damage to annual giant shaftal clover seed crops. Both chemicals gave adequate control of the weeds and did not seriously reduce seed yields.

4.3.4 Control of adult grassy weeds in established lucerne & strawberry clover

Application of wettable powder formulation of IPC to crops of strawberry clover and lucerne was carried out to assess if it was feasible to kill adult annual grass weeds in established perennial crops. Control of grasses with 4 lb. of product per acre was excellent and this rate did not adversely affect crop plants. Vigour of adult capeweed and salvation jane was also severely reduced.

4.3.5 Various studies were also carried out in collaboration with the Shell Chemical Co., Dupont and Ciba-Geigy with new herbicides in seed crops. One result of these joint trials has been that Etazine 3851 has been registered for weed control in lucerne seed crops.

4.4 Plot work

Due to staff resignation and the lack of a replacement it has not been possible to continue post- and pre-control plot work on perennial crops this year.

One hundred and fifty-five lines of certified annual legume seeds from 1971-72 season were planted in July, 1972 and grown and assessed for genetic identity. One hundred and fifty of these lots measured between 0-1% off types while five lots (all Clare subterranean clover), measured between 1-3% off types.

Nine-four lines of certified annual legume and one line of certified vegetable seed are currently being plot tested from the 1972-73 harvest season.

In addition to the above certified seeds the following tests on uncertified seeds were planted and varietal identifications completed on behalf of the seed trade and Departmental officers:-

Subterranean clover	12 lines
Demeter fescue	2 lines
Ryegrass	2 lines