1972

Part 1 Lupin cultivar - agronomy

G H. Walton

1972 EXPERIMENTAL SUMMARY

PART 1 : LUPIN CULTIVAR-AGRONOMY

1.1. Time of planting effect

1.2. Planting density effect

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ABSTRACT: EFFECT OF TIME OF PLANTING

For the trials in which yields have been obtained with confidence, the delays in time of planting have produced completely variable results on lupin plant density.

Trial No.	Time of Planting Delay	Variety	Change in Density	Percent change in crop yield
72TS8	18 days, June	Unicrop	tended to reduce	-20.0
		Uniharvest	reduction	-55.0
72BR12	20 days, May	Unicrop	No change	- 4.5
	30 days, June	Unicrop	No Change	-45.0
	20 days, May	Uniharvest	No change	-24.0
	30 days, June	Uniharvest	Some increase	-32.0
72ES6	21 days, May	Unicrop	Increase	-20.0
	18 days, June	Unicrop	Increase	- 1.5
	21 days, May	Uniharvest	Increase	-15.0
	18 days, June	Uniharvest	Increase	- 6.0
72GE39	17 days, May/June	Unicrop	Increase	+ 5.0
		Uniharvest	Increase	- 6.0

In all but one treatment the delay in planting has resulted in a reduction in crop yield. The greatest loss in yield occurs when the time of planting delay has produced a concurrent reduction in plant density. From the above figures, it can be seen that a delay of one month from May until June has given up to 24 percent reduction in yield. This loss is due to early cessation of plant development with dry September, often combined with severe weed competition.

EFFECT OF INCREASING CROP DENSITY

The 1972 plant densities did not reach the same level with equivalent rates of seed, as was attained in the two 1971 lupin trials. Whereas in 1971, the use of 90 kg seed per ha resulted in between 7 and 10 plants/metre row, in 1972 this rate of seeding only gave between 5 and 7 plants/m.

The effect of increasing crop density on grain yield shows considerable variation between experiments (Fig. 1). The trend however is to increase yield with increase in crop density. Very few experiments achieved at least 7 plants per metre drill row, the density I recommended after the 1971 season's experiments. Early seeding into dry or weedy seed beds or later plantings into cold (and often wet conditions) tended to reduce the crop establishment numbers.

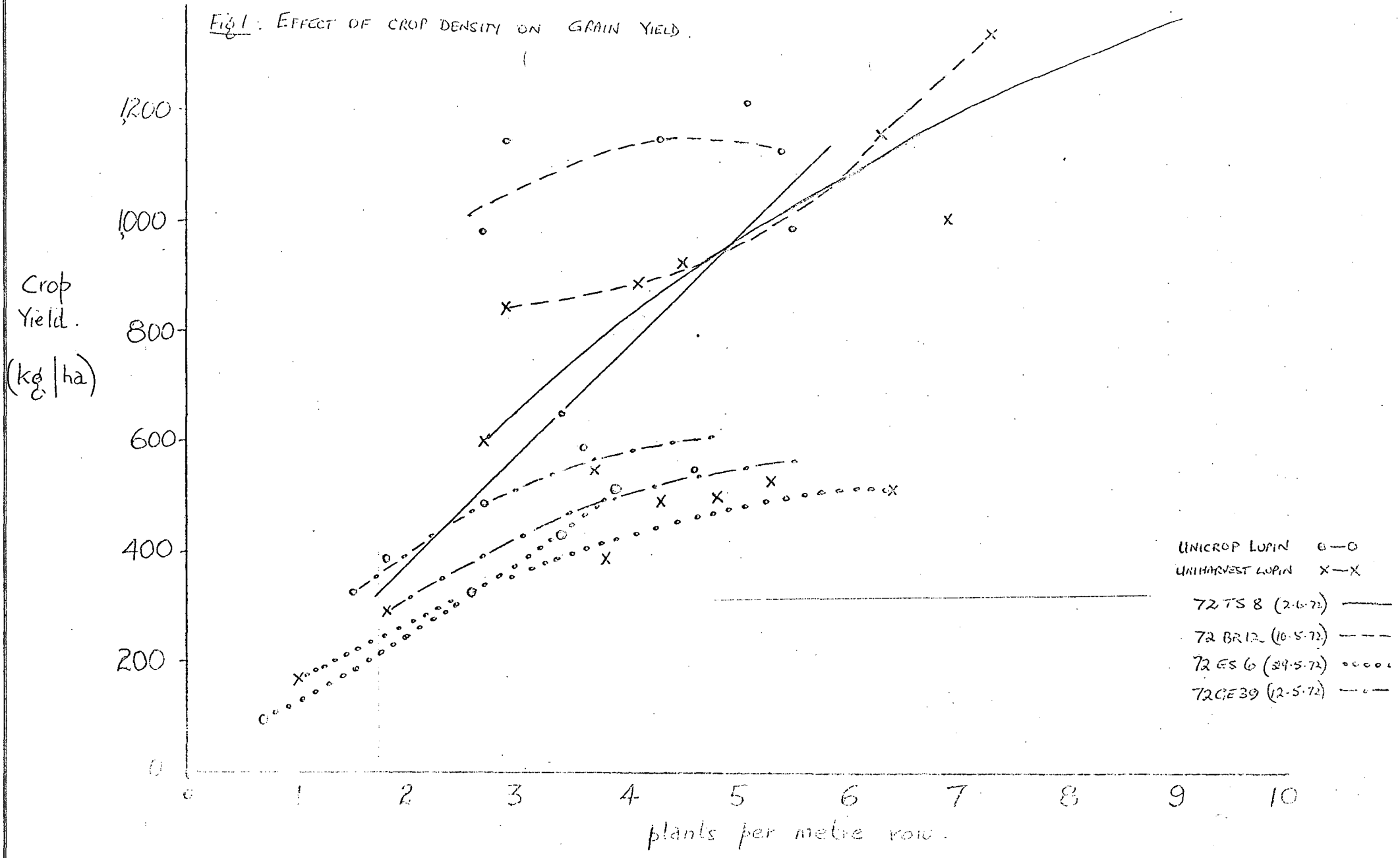


Fig 1 : Effect of crop density on grain yield.
Crop Yield. (kg/ha)
1,200
1,000
800
600
400
200
0
0
1
2
3
4
5
6
7
8
9
10
plants per metre row.
Unicrop Lupin o—o
Unitharvest Lupin x—x
72 TS 8 (2·6·72)
72 BR 12 (10·5·72)
72 ES 6 (29·5·72)
72 CE 39 (12·5·72)

No. 72TS8. TITLE: Lupin cultivar x time of planting x rate seed

LOCALITY: J. Scott, Eneabba

1972 RAINFALL: May to October, 40.7 cms. Commenced 29/5/72

SOIL: Sand over grey clay at 45.7 cms.

HISTORY: First crop after clover pasture. Total super application of 134 kg/ha/year for 17 years. 202 kg/ha of super-Cu-Zn-Mo mix applied in the trial.

RECORD:

The lupins were seeded with a disc drill on the 2nd June (with substantial opening rain) and the 20th June 1972 (3 weeks after first germination). The first time of planting had a no-cultivation treatment where the lupins were seeded directly into the grazed pasture. For both times of seeding, the other cultivation technique was to seed immediately after ploughing.

When observed on the 3rd August, all treatments were completely covered with ripgut brome grass, with capeweed included in the no cultivation treatment. However, the lupin plants were above the weeds. Patchy nodulation was found, particularly on the Unicrop lupins. Unicrop had flower buds formed on primary spike.

PLANT DENSITY - taken 3.8.72, by quadrat sample (per M drill row)

Variety	Time of Planting	Seed Rate (kg/ha) 22.4	44.8	67.2	89.6
Unicrop	2.6.72 - No cultiv.	2.1	3.9	5.7	(5.3)
	2.6.72 - Plough	1.8	3.4	5.5	(5.1)
	20.6.72 - Plough	1.9	4.1	4.8	7.2
Uniharvest	2.6.72 - No cultiv.	2.3	4.8	6.9	(10.6)
	2.6.72 - Plough	2.7	4.5	6.9	(9.0)
	20.6.72 - Plough	1.8	3.5	5.9	6.5

NOTE: The values in brackets are for individual plots. The district office ran out of seed and did not seed some of the highest seeding rates.

When observed on 2nd October, the early seeding plots were completely inundated with Wild Oats. The later sown plots had much less oats, but the Barley Grass was prominent. The lupins were in pod, with Unicrop one lateral more advanced than Uniharvest (primary spike only). Uniharvest had very poor pod set. The trial had been sprayed to combat the budworm plague.

GRAIN YIELD (kg/ha) - Machine harvested and cleaned.

		Seed Rate (kg/ha) 22.4	44.8	67.2	89.6
Unicrop	2.6.72 - No Cultiv.	217.7	365.0	564.3	(309.0)
	2.6.72	393.0	646.7	990.3	(1221.0)
	20.6.72	265.7	655.3	695.0	1106.3
Uniharvest	2.6.72 - No Cultiv.	206	320	434	(408)
	2.6.72	600	927	1008	(1676)
	20.6.72	467	431	641	524

All treatments had a large proportion of grain showing the split-seed coat problem.

Remarks:

1. The very high weed component in the trial has seriously reduced the grain yields, particularly for the no-cultivation treatment.

2. There appears a tendency for crop density to fall with the later time of planting (due to colder conditions). The lower crop density, combined with reduced crop development in the later sown treatments has severely lowered crop yield (in most treatments from 25 to 50 percent).

3. Increase in Unicrop yield with increase in crop density, Uniharvest shows greater variation.

4. Best Unicrop treatment and best Uniharvest treatment yields equal.

No. 72BR12. TITLE: Lupin cultivar x Time of planting x Rate seed

LOCALITY: J. & J.R. Staniforth-Smith, Kulicup.

1972 RAINFALL: May to October; 34 cms. Opening rains occurred 31st May.

SOIL: 0-7 cm dark brown loam; 7-23 cm red loam; 23-61 cms yellow loam to sand; 61 cms rotted granite.

VEGETATION: Whitegum, Redgum.

HISTORY: Cleared over 40 years, not supered for at least 20 years. Had 806 kg super + T.E. per ha in last 7 years.

Trial is the second crop after pasture, barley in 1971. 220 kg super per ha applied in the trial.

RECORD:

The first seeding (10th May 1972) was done after the area was scarified, with only about 25% of weed germination.

The second seeding (30th June) was into a moist seedbed (1.2 cm rain fell May 18) with approximately 60% weed kill.

The third seeding (30th June) was into a moist seedbed.

At the time of the crop density count (26th July 1972), the first sown plots were thick with Erodium, Dock and self-sown barley, but the lupins were well above the weed.

The 30th May sown plots contained Erodium, but the lupins were above the weed and the final seeding plots were quite weed-free. The lupins had just emerged.

PLANT DENSITY (PER METRE DRILL ROW) - quadrat sampled

Seed Rate (kg/ha)

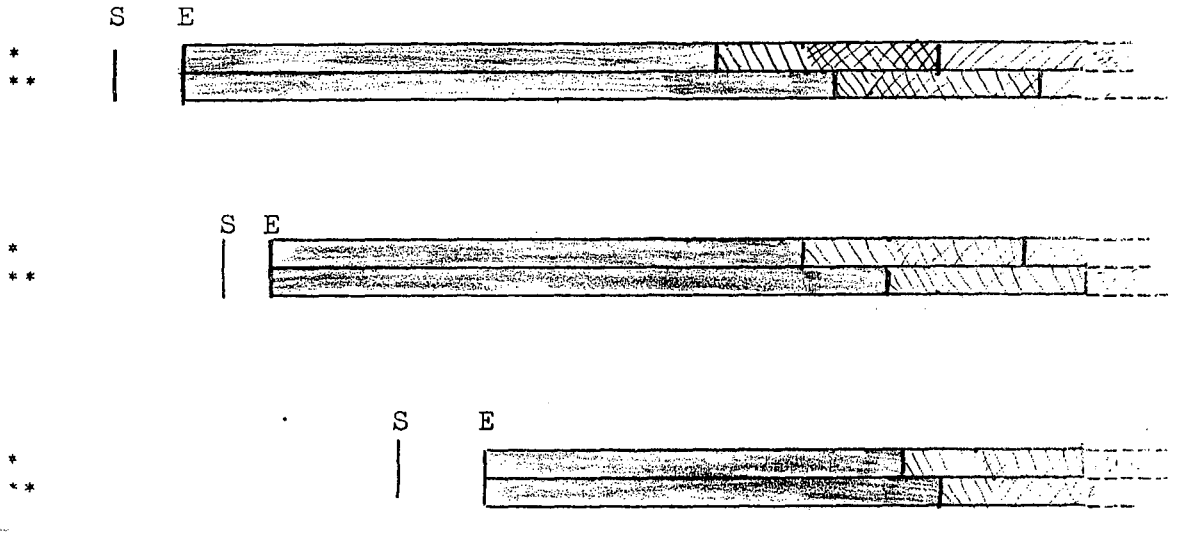
Variety	Time of Planting	39	55	79.3	96.4
Unicrop	10.5.72	2.7	2.9	4.3	5.4
	30.5.72	2.2	3.2	4.7	6.2
	30.6.72	2.7	2.8	*	6.6
Uniharvest	10.5.72	2.9	4.1	6.3	7.3
	30.5.72	3.1	3.8	5.7	7.4
	30.6.72	3.2	3.9	6.1	8.0

* Missing treatment.

By the 7th September, although there was enormous Capeweed growth over all the trial (with barley plants on the first time of planting) the lupins were above the weed. In the earlier sown treatments the lupins were branching and covering the plots, good nodulation on all treatments.

The Bridgetown District Office has supplied the observations on lupin flower and pod development.

S = Seeding, E = Emergence, Vegetative, Flowering, Podding.



Kulikup 1972

* Unicrop
** Uniharvest

There was no effect of plant density on reproductive development.

The trial site exhibited a variation in replicate due to a change in soil type and chocolate spot disease (severe on replicates 2 and 3). The replicate 1 was found to be behind the other two in maturity.

GRAIN YIELD (kg/ha) - Machine harvested and cleaned.

Variety	Time of Planting	Seed Rate (kg/ha) 39	55	79.3	96.4
Unicrop	10.5.72	987.7	1152.3	1156.0	1134.3
	30.5.72	790.3	883.7	1040.3	1143.7
	30.6.72	319.0	415.7	*	572.7
Uniharvest	10.5.72	855.7	887.0	1160.0	1341.0
	30.5.72	728.0	902.0	985.7	917.0
	30.6.72	293.0	444.7	515.7	783.0

Some plots exhibited the split-seed coat problem, but the proportion was not high.

		Replication 1	2	3	* Missing Treatment
Unicrop	10.5.72	1431.2	1508.2	383.2	
	30.5.72	1453.0	1213.5	227.0	
	30.6.72	594.0	375.3	338.0	
Uniharvest	10.5.72	1355.2	1412.0	452.7	
	30.5.72	1238.2	1147.0	264.2	
	30.6.72	795.0	372.0	360.2	

Remarks:

1. The large drop in yield in replicate 3 must be the result of a change in soil type or topography, since the crop density did not differ from the other replicates. The trial was on the side of a steep slope facing west, replicate 3 being the furtherest down the slope. There may have been more clay down the slope than on replicate 1, although a change was not noticeable at the times of inspection.

2. There is a substantial drop in yield as the time of planting was delayed; branching was curtailed, stand density not affected.

3. The grain yield increased with increase in crop density in all treatments except the early sown Unicrop. In this treatment the crop density did not go very high.

4. At equal plant density, Unicrop and Uniharvest gave equal yield.

No. 72ES6. TITLE: Lupin cultivar x Time of planting x Rate seed

LOCALITY: G. Haigh, East Gibson

1972 RAINFALL: May to October; 56 cms

SOIL: Grey sand over clay within 56 cm (Gibson Sand /wet phase7)

VEGETATION: Low heath scrub and Christmas tree.

HISTORY: 197 kg plain super per ha applied with the trial.

RECORD:

The first time of planting (8th May) took place one week after ploughing, with the first rains. The other times of planting had ploughing for weed kill and seeding (29th May) and delayed seeding until 16th June 1972.

When observed on the 15th August, the soil was waterlogged causing considerable seedling loss. The first two times of planting plots had severe Wimmera Rye Grass infestation. The lupins had good nodulation on all except the June time of planting plots. The Unicrop plants seeded early May had the first flowers emerging.

PLANT DENSITY - Taken 15.8.72 by quadrat sampling.

Variety	Time of Planting	Seed Rate (kg/ha) 22.4	47.0	67.8	91.8
Unicrop	8.5.72	0.3	1.6	3.0	2.8
	29.5.72	0.7	2.6	3.4	3.9
	16.6.72	1.8	2.8	4.1	5.4
Uniharvest	8.5.72	0.7	2.2	3.8	5.4
	29.5.72	1.0	3.8	4.3	6.4
	16.6.72	0.9	4.6	6.4	6.9

The heavier seeding rates gave best lupin growth in competition against the Wimmera Ryegrass.

Observation on 11th October showed considerable time of planting effect on crop development. Early May sown lupins had pods formed, the Uniharvest had 60-75% flower drop, the Unicrop had 30-40% flower drop. The late May sown Uniharvest had young pods on main spike with 20-30% flower drop (on lower floret sites). The Unicrop had pods formed up to the first laterals with 50% flower drop on main spike. The June sown Uniharvest had pods on the lower sites of the main spike, with no floret abortion. Flower buds had formed on the first laterals. The Unicrop had pods formed with 70% flower drop on main spike. Flower buds had formed on the second laterals.

GRAIN YIELD (kg/ha) - Machine harvested and cleaned samples

Variety	Time of Planting	Seed Rate (kg/ha) 22.4	47.0	67.8	91.8
Unicrop	8.5.72	134.7	365.7	496.0	661.3
	29.5.72	100.3	337.3	345.3	513.3
	16.6.72	222.0	363.6	451.3	486.7
Uniharvest	8.5.72	121.3	412.7	598.0	574.7
	29.5.72	172.3	390.3	491.3	513.0
	16.6.72	161.7	408.7	481.3	459.3

All plots had a high proportion of the split-seed coat problem.

Remarks:

1. The low crop density, from the early waterlogging and the severe ryegrass competition in the May sown treatments has given very low grain yields.

2. The delays in time of planting, although increasing the crop density, resulted in a drop in grain yield for all treatments except the lowest seeding rate. This could reflect the interplant competition at the high crop densities, for limited moisture and nutrients.

3. There seems to be a variety x crop density interaction for grain yield, with Unicrop giving increasing yield with increasing crop density (the maximum not being attained). Uniharvest yields were a maximum with a crop density between 5.4 and 6.4 plants per metre row.

4. The highest grain yields obtained from both varieties are similar, but the Unicrop did not achieve as high a density as the Uniharvest.

No. 72GE39. TITLE: Lupin cultivar x Time of planting x Rate Seed

LOCALITY: S. Pate, North Gully Farm, near Eradu

1972 RAINFALL: May to October; 29.7 cms. October very dry.

SOIL: Eradu yellow sand to depth.

VEGETATION: Casuarina

HISTORY: Virgin land 1970.
Trial sown with 202 kg plain super/hectare.

RECORD:

Two times of planting; at the break (12th May) without prior cultivation using a cultitrash and on 7th June 1972, 2 weeks after ploughing using the disc drill.

By the 2nd August, the trial had a complete undercover of Wimmera Ryegrass. There was good nodulation on both times of planting and it was noticed at the lupin plants smaller than 15 cm in height did not have effective nodules. The Unicrop plants were just starting to flower.

PLANT DENSITY (per metre drill row) - taken 2.8.72

		Seed Rate (kg/ha)			
Variety	Time of Planting	22.4	44.8	68.3	89.6
Unicrop	12.5.72	1.5	2.7	3.6	4.6
	7.6.72	1.8	4.5	6.1	5.2
Uniharvest	12.5.72	1.8	3.7	4.8	5.3
	7.6.72	2.1	4.6	6.5	7.4

The plots were sprayed during October with DDT to combat the cutworm plague.

On the 3rd October the trial was overrun with the Wimmera ryegrass, giving severe competition to the lupin plants. The plant density had a large depressing effect on the extent of branching in the lupin plants.

Estimate of reproductive development from observations and extrapolation:

	Unicrop lupin		Uniharvest lupin	
date sown	12.5.72	7.6.72	12.5.72	7. 6.72
Date of first flowers (primary)	2.8.72	28.8.72	24.8.72	18. 9.72
Date of first laterals flowering	30. 8.72	18.9.72	20.9.72	3.10.72
Date of first pods (primary)	16.8.72	11.9.72	20.9.72?	3.10.72

GRAIN YIELD (kg/ha) - Machine harvested and cleaned.

Variety	Time of Planting	Seed Rate (kg/ha) 22.4	44.8	68.3	89.6
Unicrop	12.5.72	328.0	495.3	589.0	549.0
	7.6.72	269.0	487.0	602.3	602.3
Uniharvest	12.5.72	294.3	565.7	498.3	528.3
	7.6.72	214.3*	414.7	481.7	487.0

*The lowest crop density in June sown treatment was the only treatment to exhibit the split seed coat problem. This was consistent over the three replications.

Remarks:

1. The Wimmera ryegrass was very severe in the trial, perhaps more so in earlier sown treatments.

2. The delay in planting gave an increase in crop density, due possibly to seeding technique, i.e. cultitrash versus plough and disc seed. However the delay in time of flowering for Uniharvest (during moisture stress) has resulted in a loss of yield. The Unicrop variety was sufficiently early to take advantage from the increase in density.

3. Increasing seeding rate resulted in increasing crop density, however the early finish to the season resulted in no increase in grain yield above the 68.3 kg seed per hectare (i.e. 4-6 plants per metre row).

4. Near Geraldton, the best Uniharvest yields are lower (90%) than that from the Unicrop lupin.

No. 72AL8. TITLE: Lupin cultivar x Time of planting x Rate seed

LOCALITY: A. Sandilands, "Kurramia", Kendenup

1972 RAINFALL: May to October; 30.8 cm

SOIL: Sandy gravel (5-10 cm) over massive ironstone.

VEGETATION: Redgum, Jarrah

HISTORY: 10 years ryegrass pasture; 202 kg super/ha up to 1969 and 100 kg/ha in 1970 and 1971. Trial was the first crop after pasture.

RECORD:

The site was ploughed on 9th May and the first seeding was one week later (16th May). The remainder of the area was scarified on 15th June and the second seeding was done on the 19th June. The last seeding was on the 17th July 1972. Avadex, at 1.065 litres/ha, was sprayed onto the site on 16.5.72. The lupins were sown with 246 kg plain super/ha.

There was a marked time of planting effect on the Wimmera ryegrass and Barley grass content of the plots by the 25th July. The May sown plots had a complete weed under-cover which reduced seedling establishment. The June sown plots had fewer grass plants but they still formed a major component in the plots. In the July sown plots, the ryegrass plants were much fewer in number. Rabbits had nipped off the main stem of a large proportion of the early sown lupins.

PLANT DENSITY (per metre drill row) - quadrat sampled 25.7.72 and 6.9.72

Variety	Time of planting	Seed Rate (kg/ha) 30.2	43.7	70.6	87.4
Unicrop	16.5.72	0.9	1.7	3.0	4.1
	19.6.72	1.7	2.9	5.0	9.0
	17.7.72	2.4	3.9	6.7	7.1
		33.6	47.0	67.4	91.8
Uniharvest	16.5	1.9	*	3.8	4.5
	19.6.72	2.9	3.2	5.0	7.0
	17.7.72	2.8	4.3	5.6	7.9

On the 6th September it was noted that the first replication of the May sown treatment was completely swamped by weeds. The other two replications were weedy but the lupins were above the weeds. The unicrop had just commenced to flower. The Uniharvest had the flower buds developing and would probably commence flowering one week later than Unicrop. In the June sown treatment, the lupins were just starting to nodulate effectively. The soil was extremely wet at the 7.5 cm level. The Unicrop flower buds were just coming through. In the July sown treatment, the lupins had not nodulated. Very severe weed competition in the May and June sown treatments.

On the 9th November it was reported that the trial was overcome by weeds, mainly Barley grass. The first sown plots were best with healthy pods. The June sown plants were low and most

flowers had failed to set pods. The July sown plants were stunted and wilted with no pods produced. A high proportion of aborted flowers on all lupin plants.

GRAIN YIELD (kg/ha) - Machine harvested and cleaned.

Variety		Seed Rate (kg/ha)	Repl. 2	Repl. 3	Mean
Unicrop	16.5.72	30.2	39	61	50
		43.7	39	72	55.5
		70.6	114	183	148.5
		87.4	183	328	255.5
	19.6.72	30.2		0	
		43.7		38	
		70.6		123	
		87.4		110	
Uniharvest	16.5.72	33.6	39	40	39.5
		47.0	-	-	-
		67.4	99	117	108
		91.8	156	311	233.5
	19.6.72	33.6		40	
		47.0		61	
		67.4		94	
		91.8		164	

Remarks:

1. The poor finish to the season and the heavy weed competition reduced the lupin yields to less than profitable levels.

2. The highest crop density was required to provide any resistance to the weed competition.

No. 72JE28. TITLE: Lupin cultivar x Time of planting x Rate seed

LOCALITY: J. Treeby, Jacup

1972 RAINFALL: May to October; 17.7 cm. Season opened 22.6.72

SOIL: 0-13 cm gritty grey sand; 38-91 cm gravelly sand.

VEGETATION: Blue Mallee, Chittock

HISTORY: 6 years old clover land. Second crop after wheat 1971. Total super of 1,000 kg/ha. 212 kg super/ha applied with the trial.

RECORD:

The time of planting treatments were carried out on 22nd June and 4th August, with lupin emergence recorded on 3rd July and 16th August respectively.

PLANT DENSITY (per metre drill row)

Variety	Time of Planting	Seed Rate (kg/ha) 47.0	65.0	93.0	
Unicrop	22.6.72	3.3	4.9	6.9	
	4.8.72	3.7	4.2	6.3	
		48.1	71.7	87.4	Seed Rate (kg/ha)
	22.6.72	2.5	3.8	4.7	
Uniharvest		116.5	168.0	226.2	Seed Rate (kg/ha)
	4.8.72	2.8	4.2	5.0	

The Unicrop plots established higher plant densities than the Uniharvest plots. The Uniharvest seed was supplied from a source with the split-seed coat problem which gave about 40% germination. Plant density was low even with the higher seeding rates used at the second time of planting.

By September 14th, the early sown lupins were 20 cms tall and flowering. The late sown lupins had not nodulated and some wind damage had occurred to the plants.

On the 30th October, the Unicrop June sown plants were 61 cms tall, with 8-9 pods per plant and the Uniharvest not quite as vigorous, 51 cms tall and 6-7 pods per plant.

The approximate flowering dates recorded:

Seeded 22.6.72	Unicrop	21.9.72
	Uniharvest	30.9.72
Seeded 4.8.72	Unicrop	18.10.72
	Uniharvest	30.10.72

GRAIN YIELD (kg/ha) - Machine harvested

Variety	Time of planting	Seed Rates X	Y	Z
Unicrop	22.6.72	416.0	430.0	697.3
	4.8.72	92.0	99.0	106.0
Uniharvest	22.6.72	260.7	338.0	261.7
	4.8.72	84.7	77.7	84.7

The late sown plants were severely affected by shrivelled seed, particularly the Uniharvest.

The District Office reports that the header was knocking over the lupins and a quantitative assessment on one plot showed a 56% loss of yield. It was also reported that seed loss from pod shattering of Uniharvest prior to harvest (on 20.12.72) is estimated at 34 kg/ha.

Remarks:

1. The highest rates of seeding gave satisfactory crop density for Unicrop, however the low germination value of the Uniharvest lupin seed prevented high crop density from being achieved.

2. The delay in seeding until August, plus the very dry September (1.2 cm in 6 days) prevented the fulfilment of lupin growth to pod development.

3. Increasing Unicrop yield with increasing plant density. Increasing competition influencing Uniharvest seed set?

4. The comment on the harvester damage appears realistic because 8-9 pods per plant should provide a crop yield of 1300 kg/ha i.e. double that obtained with Unicrop at highest crop density. The pod shattering of the Uniharvest is surprising.

No. 72WH8; TITLE: Lupin cultivar x Time of planting x Rate seed

LOCALITY: Paddock 2 home D, Wongan Hills Research Station

1972 RAINFALL:

SOIL: Wongan loamy sand; 7.5 cm grey slightly yellow sand, yellowness (clay component) increasing with depth.

VEGETATION:

HISTORY: Cropped to barley in 1971. Trial seeded with 129 kg plain super applied per hectare.

RECORD:

The lupins were seeded using two cultivation techniques and two times of planting. In the first time of planting two seeding treatments were used, no cultivation prior to seeding and ploughing with the first rains with seeding one week later (3rd May). The second time of planting had a ploughing after weed germination with seeding one week later (19th June).

On the 10th August 1972, there was a large difference in weed (doublegee, Erodium and self-sown barley) content between times of planting with the first sown treatments the worst.

On the 5th October, the trial looked like lupins sown under a barley crop. The early sown treatments had the lupins wilting badly under the barley competition. Lupin branching had been drastically reduced and the Unicrop had only 2-3 pods on primary with 1 or 2 pods on the lateral. Uniharvest had 2-4 pods on primary and no laterals.

The later sown treatment had slightly less barley and Unicrop had 5-6 pods on the primary with flowers on the laterals. Uniharvest was still in flower.

No rain followed on during October and the lupins dried up. The trial was not harvested.

No. 72JE9. TITLE: Lupin cultivar x Time of planting x Rate seed

LOCALITY: R.S. Valentine and Co., Gairdner River.

1972 RAINFALL:

SOIL: Grey sand over clay at 20 cms

VEGETATION: Mallee

HISTORY: 16 year old clover land, last crop 1966. Total super application 2,225 kg/ha. Trial first crop after clover pasture. 142 kg plain super/ha applied.

RECORD

The time of planting treatments were commenced after the first reasonable rains for weed control. The dates of seeding were 28th June and 3rd August, 1972.

On the 31st July, the plants were severely damaged from sand blasting, approximately 40 percent of the seedlings were lost.

On the 15th August, the early sown plants were very small, with no nodulation because of the cold conditions. The later sown plants had their cotyledons just emerging. On 13th September, the August sown plants had also received severe sandblast damage and they did not look like surviving unless good finishing rains were received.

During November, after reasonable flowering on the later sown plots, the plants were severely affected by moisture stress and the split-seed coat problem where the seed and pods dried and shrivelled. No plots were harvested.

No. 72JE10. TITLE: Lupin cultivar x Time of planting x Rate seed

LOCALITY: L.M. & K.M. Smith, Gairdner River

SOIL: Grey sand (0-20 cms), gravelly grey/white sand (to 30.5 cms) over clay.

VEGETATION: Mallee and Chittock

HISTORY: 12 year old clover land; cropped to barley 1971. Total super history 1982 kg/ha. Trial sown in 1972 with 171 kg super/ha. Site sprayed with 3 litres/ha of Gramoxone + Reglone for Capeweed Wimmera ryegrass, Barley and Dock control.

RECORD:

The first time of planting treatment was carried out after suitable weed control on 4th July 1972. The second time of planting was on the 3rd August 1972. The lupin germination was good, ranging from 3 up to 7 plants per metre drill row for the seeding rates. The dates of emergence were:

July sown, 17th July
August sown, 15th August

By the 17th August, the plots had some small WRG plants in them, but the lupins were vigorous and nodulated. In September, the weed infestation was heavy in both times of planting and plants were suffering from moisture stress.

After a very dry September, the lupin plants had formed some pods with the Unicrop variety the better of the two. By the 30th November the pods and seeds had shrivelled up in 80 to 90% of the plants. The plots were not harvested.