Lentil Sowing Depth

Summary: There was a significant difference in lentil yield from sowing depth (shallow yielded more). There was no effect of herbicide use (Trifluralin, Simazine and Lexone). Commercial practice would still indicate a minimum sowing depth of 6cm is required for lentils.

Aim: To determine safe and effective techniques for using Trifluralin, Simazine and Lexone in lentils.

Methods: Lentils were sown at two depths (3 and 6 cm), Trifluralin was applied just prior to sowing and was incorporated by sowing at two rates (0.8 and 1.6L), Simazine was applied immediately post sowing at 0.8L together with Lexone at two rates (130 and 260g).

Digger lentils sown on 4 June, 1997 with Grain legume Super Zn (110kg/ha). Soil was moist on the application of post sowing pre-emergent herbicides.

Results:

Sowing Depth (cm)	Trifluralin (IBS) (L/ha)	Simazine (PSPE) (L/ha)	Lexone (PSPE) (g/ha)	Yield (t/ha)
3	0.8	0.8	130	0.16
3	0.8	0.8	260	0.23
6	0.8	0.8	130	0.14
6	0.8	0.8	260	0.13
3	1.6	0.8	130	0.27
3	1.6	0.8	260	0.27
6	1.6	0.8	130	0.18
6	1.6	0.8	260	0.19
Significant Difference			**depth** **herbicide**	**P<0.01, LSD=0.07** **NS**

Rain after applying herbicides - the PSPE herbicides were applied to moist soil, 7mm of rain fell three days after application, and another 6mm eleven days after application.

Interpretation: There was no significant difference between lentil yield and the application of herbicides. However the more shallow sowing yielded significantly better than the deeper sowing. This is a surprising result in light of the damage observed in lentil paddocks around the district where shallow sown lentils were damaged by Simazine and/or Trifluralin. The chemicals were applied to a moist soil and there was reasonable follow up rain (total of 13mm within 2 weeks of spraying) these conditions should have been optimum for Lexone and Simazine. The lack of an effect of Trifluralin was similar to that obtained in the Birchip trials last year, which may indicate that lentils are more tolerant of Trifluralin than we first expected - however, more work needs to be done to make sure this is the case. We will need to continue with this work next year to determine the optimum sowing depth for lentils.

Commercial Practice: Even though there was an effect of sowing depth on the yield of lentils, it is still advisable to sow lentils at least 6cm deep. We have seen severe damage (total crop loss) in 1997 on lentils from these herbicides (probably more the effect of Simazine). It will be safest to sow lentils deep.