THE ESTABLISHMENT AND YIELD OF LUCERNE AND
THE INFLUENCE OF COVER CROPS, WEEDS, IRRIGATION
AND LUCERNE SEEDING RATE
(M.Agr.Sc. thesis)
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The aim of this study was to examine ways of reducing the cost of establishing lucerne, and of increasing production in
the first year.

Two field trials conducted on a Paparaa sandy loam at Crop
Research Division, DSIR, Lincoln, showed the following:

(1) Cover crops of winter wheat or spring barley reduced spring-
sown lucerne production in the season of sowing and sometimes
into the second season, but lucerne establishment was unaltered
by cover crops. The use of spring-sown cereal cover crops for
lucerne establishment could be justified on the basis of providing
a more profitable return when the establishment year
production of clear-seed lucerne was low but could not be justified on
the basis of weed suppression.

(2) Irrigation reduced competition between the cover crop and
the undersown lucerne. Lucerne production at the harvest cut
was reduced by barley sown at 56 kg/ha to 21 and 49% of clear-
seeded lucerne non-irrigated and irrigated, respectively. Yields re-
mained depressed for two further cuts when non-irrigated but
were restored by the following cut when irrigated. Clear-seeded
lucerne under irrigation yielded 13 930 kg/ha in the season of
sowing.

(3) Lucerne densities of 30 to 350 plants/m² showed that,
although production from low density stands may be reduced for
some time in the first season, subsequently they produced to a
maximum. In spite of the fact that the trials differed markedly
in percentage establishment, seeding rates of 2.9 and 2.25 kg
viable seed/ha were capable of producing stands of adequate
density and therefore on the basis of yield above current lucerne
seeding rate recommendations of 12 to 16 kg/ha can be con-
sidered high, even when the percentage establishment is likely
to be low.