

## **Tolerance of sub clover cultivars and T. Balansae Cv Paradana to a range of herbicides in Tasmania**

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To our knowledge there are limited data available on herbicide tolerance of sub clover (T, subterraneum) cultivars in a cool environment. Differences between cultivars in their tolerances to herbicides can exist (1), so a screening project was conducted to evaluate the response of 15 commercially available sub clover cultivars, namely, Nuba, Clare, Nungarin, Seaton Park, Woogenellup, Larisa, Trikkala, Enfield, Green Range, Junea, Meteora, Mt. Barker, Esperance, Dalkeith, Karridale and T. balansae cv. Paradana to herbicides and herbicide mixtures.

### **Methods**

The trial was sown at Cressy with a cone seeder on 2/5/86 on a randomised block design replicated four times. Every plot was 25 m long by 1.6 m wide with 1 m buffers.

Herbicide treatments were applied at the 3 to 4 true leaf stage on 22/7/86 as a single, continuous 2 m wide band at right angles to the cultivar plots and across all four replicates. They were:

2,4-DB Na/K salt 0.8 (active constituent) a.c./ha (2 l/ha) MCPA - Na salt low 0.313 a.c./ha (1.25 l/ha)

MCPA - Na salt high 0.5 a.c./ha (2 l/ha)

MCPA amine 0.313 a.c./ha (0.63 l/ha)

Bromoxynil 0.3 a.c./ha (1.5 l/ha)

2,4-DB 0.6 a.c./ha + bromoxynil 0.3 a.c./ha (1.5 l/ha + 1.5 l/ha)

MCPA Na salt 0.5 a.c./ha + bromoxynil 0.3 a.c./ha (2 l/ha + 1.5 l/ha)

MCPA amine 0.313 a.c./ha + bromoxynil 0.3 a.c./ha (2 l/ha + 1.5 l/ha)

Unsprayed control

On 22/9/86 dry matter (DM) production was measured and botanical composition assessed. Seedling counts were taken in June 1987.

### **Results and discussion**

All herbicides reduced clover DM production; the least damaging across all clovers were bromoxynil and MCPA - Na salt at the low concentration, which reduced clover DM production by 23% and 39% respectively. The most damaging were 2,4-DB and MCPA amine + bromoxynil which reduced clover DM by 62% and 56% respectively. The broad spectrum MCPA - Na salt + bromoxynil treatment reduced clover production by 44%. The most effective weed killing treatments were 2,4-DB + bromoxynil and MCPA - Na salt + bromoxynil.

Seedling regeneration the following autumn was depressed on all treatments except for bromoxynil alone.

Balansa was the least damaged across all treatments. Amongst the sub clovers, the brachycalycinums were the most tolerant followed by Trikkala. Larisa suffered the most damage.

Since bromoxynil has been reported to kill clovers in other environments (2), it is possible that local environmental conditions such as low temperatures (July mean max. = 11°C, min. = 1°C) or low moisture stress could improve tolerance. The results suggest that using herbicides in line evaluation trials could give misleading results due to differences in tolerance.

1. Lemerle, D. et al. (1985), *Aust. J. Exp. Agric*, 25, 677-682.
2. Kenny, P.T., et al. (1987), *Proc. 4th Aust. Agr. Conf.*, 186.