

Project No.: S2/03
Project Title: SYP Alkaline Soils Pulse Crop Herbicide Tolerance Trials
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Executive Summary

Herbicide tolerance trials were conducted on alkaline, high pH soils at Minlaton in 2003 and 2004 to determine if new and pending new varieties of peas, lentils, chickpeas and faba beans vary in tolerance to commonly used herbicides and tank mixes.

Agronomic recommendations for successful herbicide application in new varieties (Nugget CIPAL203 lentils, Parafield, Kaspas, Sturt field peas, Genesis 090, Genesis 508, Chickpeas and Fiesta, Farah beans) were derived from these trials and have been published and promoted widely to maximise the successful uptake and production of these new varieties by growers.

Experiments looking at managing herbicide use with the aim of limiting off target damage and maximising crop growth and yield in pea and lentil were also undertaken at Minlaton in 2003 and 2004. Outcomes from these experiments included:

- Delayed application timing of some commonly used post emergent herbicides exacerbated crop damage, with lentils being found to be more sensitive than peas.
- Generally a wide range of commonly used herbicides in peas and lentils at the recommended rates did not have a large effect on reducing nodule numbers in peas and lentils on alkaline sandy loam soils at Minlaton, unlike in other areas of the state.
- Slight decreases in N fixation in 2003 indicated additional N inputs and herbicides may interact to the detriment of nitrogen fixation. Hence, the potential risk of herbicide induced reductions in N fixation in peas at Minlaton, while lower than in other regions of South Australia, can still occur.

Sufficient funding has been obtained from GRDC for the continuation of the pulse herbicide tolerance trials at Minlaton in 2005. Future funding for the continuation of this work will be dependent upon a national review of herbicide tolerance experiments in all crops by GRDC during 2005.