

## **Chemical and physical methods of controlling wild radish in lupins**

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**Summary** To minimise the impact of herbicide resistance within Western Australian (WA) Grainbelt, integrated weed management (IWM) strategies employing both chemical and non-chemical weed control options need to be incorporated into the lupin production systems. The effect of on-row and inter-row physical and chemical weed control options on wild radish and performance of a lupin crop sown in wide rows were investigated on grower's field at Ballidu WA. Chemical and non-chemical treatment combinations were applied at pre- and post-emergent to manage wild radish in wide row lupin. On-row herbicide was applied using the knapsack sprayer immediately after the sowing. Sweep points (180 mm) were used for inter-row cultivation at 5-leaf stage or at flowering of lupin crop. The shielded sprayer with Tee jet (TM DG95015EVS) was used for inter-row spray treatments at the two stages of lupins. On-row herbicide

application and inter-row cultivation and shielded spray combinations reduced wild radish numbers compared to standard control treatment (simazine) in 2015. However, reduction in lupin grain yield was also observed in some treatments due to impact of inter-row cultivation and shielded spray application. These chemical and non-chemical radish control options in 2015 look promising and need to be tested across seasons and environments to improve the control wild radish and minimise grain yield losses for improving the efficiency of cropping systems involving lupin while minimising the impact of herbicide resistance within WA Grainbelt. Alternative weed control methods are necessary to sustain lupin production systems in Australia.

**Keywords** Chemical and non-chemical (physical and mechanical) methods, wild radish, shielded sprays, lupin grain yield.