

Efficacy of harvest weed seed control systems on wild oats

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Summary Harvest weed seed control (HWSC) is an important tool for weed management in Australian cropping systems, leading to more sustainable crop production with reduced herbicide reliance. The efficacy of this weed control approach has now resulted in their widespread use with 40% of Australian growers using some form of HWSC. However, HWSC efficacy is directly related to the proportion of weed seed production that is collected during harvest. Weed species, such as wild oats, that are prone to seed shedding may not be effectively targeted by HWSC systems. A preliminary trial conducted at Narrabri, NSW during the 2016 harvest determined that HWSC treatments reduced wild oat populations by only 5–20%.

However, the very high wild oat plant density (>600 plants m⁻²) at this site indicates a large seedbank that would have masked HWSC treatment effects. Further trials were established during the 2017 harvest comparing chaff tramlining, chaff cart and narrow windrow burning treatments on wild oat populations in wheat and chickpea crops. Wild oat emergence counts in autumn 2018 will be used to assess the efficacy of these treatments on wild oat populations. The results from these trials will confirm if HWSC systems can be relied on to target wild oat populations in northern region cropping systems.

Keywords HWSC, seed shed, wild oats.