

Comparing the weed seed collection efficacy of stripper and draper type harvester fronts during harvest

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Summary The wide-spread reliance on herbicides for weed control has resulted in high frequencies of herbicide-resistant weed populations in many Australian agricultural regions. Harvest weed seed control (HWSC) practices provide growers with an end-of-season weed control option, by targeting the seed of weeds maturing at the same time as the crop. This targeting of weed seeds helps to lower the seed bank and reduces the reliance on herbicides for in-crop weed control. In some Australian production regions growers have adopted stripper fronts, which collect just the grain heads or pods allowing the retention of upright and intact stubble. With reduced crop residues collected the speed and efficiency of harvest is dramatically increased. The aim of this study was to compare the effectiveness of stripper and draper type harvester fronts in collecting annual ryegrass

seed during the harvest of cereal crops. In December 2017, at two locations near Wagga Wagga, 50 annual ryegrass plants were marked and their seed-bearing tillers counted prior to harvest. At the same time 20 representative plants were collected to determine the average seed production per tiller. After harvest the remaining tillers were collected by cutting at the soil surface and the remaining seed were counted. Stripper fronts collected up to 87% of the seeds, while a draper front would have collected up to 91%. Stripper fronts appear to be an excellent option for collecting weed seeds at harvest. They would provide an opportunity to achieve both high stubble retention without negatively impacting on HWSC.

Keywords Annual ryegrass, harvester front, HWSC, weed seed collection.