

**Seed-set reduction of milk thistle (*Sonchus oleraceus* L.), wild turnip (*Rapistrum rugosum* L.) and flaxleaf fleabane (*Conyza bonariensis* L.) following a crop topping application of saflufenacil (Sharpen® WG Herbicide) in cereals**

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**Summary** Crop topping for seed set reduction is the application of selective and non-selective herbicides to crops at late stage of development to reduce seed set and thus the future weed population. Saflufenacil (Sharpen® WG Herbicide) is a broadleaf herbicide of the Protoporphyrinogen Oxidase Inhibitors (PPOi) mode of action group. In 2017, registration was granted for saflufenacil to be used in wheat, barley and triticale for the reduction in seed set of wild radish (*Raphanus raphanistrum* L.). This has become an important resistance management tool and further work has been conducted to similarly assess the ability of saflufenacil to reduce the seed-set from mature plants of additional troublesome weeds in the cereal system. Trial work generating efficacy data has targeted full flowering milk thistle (*Sonchus oleraceus* L.), wild turnip (*Rapistrum rugosum* L.) and flaxleaf fleabane (*Conyza bonariensis* L.) in cereal crops. Saflufenacil

was applied at watery ripe growth stage of wheat and barley (BBCH 71) compared against 2,4-D, glyphosate, and diquat all applied at their respective registered crop timings. Saflufenacil significantly reduced the ability of targeted weeds to set seeds when compared to the untreated control and other alternate treatments. Moreover, saflufenacil showed excellent rapid desiccation of large weeds, meaning that crop harvestability was improved. The combination of reduced number of seeds and high levels of desiccation of mature weeds provides a significant reduction in weeds seed that is able to contribute to the weed seed population in a field for following seasons. In conclusion, saflufenacil can be an excellent tool in managing weed seed populations in cropping systems with obvious herbicide resistance management implications.

**Keywords** Crop topping, seed-set, milk thistle, wild turnip, flaxleaf fleabane, saflufenacil, resistance.