

# Sensitivity of lupin (*Lupinus angustifolius*) and other plant species to Overwatch® Herbicide (bixlozone) when applied at rates simulating spray drift exposure

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**Summary** Overwatch® Herbicide (400 g/L bixlozone) is a new herbicide developed in Australia by FMC for the pre-emergence control or suppression of a wide range of grass and broadleaf weeds. Overwatch® Herbicide was granted first registration in 2020 at an application rate of 1.25 L/ha (500 g a.i./ha) rate in wheat (*Triticum aestivum*), barley (*Hordeum vulgare*), canola (*Brassica napus*). FMC investigated the sensitivity of certain crop and weed species to bixlozone following in-field reports of off-target movement. Six small plot replicated field trials were installed in lupin (*Lupinus angustifolius*) crops across Western Australia and New South Wales where Overwatch® Herbicide was applied at 1.25 to 250 mL/ha (0.5 to 100 g a.i./ha). Overwatch® Herbicide exposure was also assessed in an outdoor controlled environmental trial on lupin, lentil (*Lens culinaris*), chickpea (*Cicer arietinum*), serradella (*Ornithopus sativus*), canola (*B. napus*), oat (*Avena sativa*),

wheat, and milk thistle (*Sonchus oleraceus*). In addition, the effect on lupin, of 2.5 to 12.5 mL/ha (1 to 5 g a.i./ha) Overwatch® Herbicide mixed with glyphosate (2.5 to 12.5 g a.i./ha), paraquat (1 to 5 g a.i./ha) alone or plus trifluralin (2.88 to 14.4 g a.i./ha) was also investigated. The field trials demonstrated the high sensitivity of lupin to bixlozone with symptoms of bleaching being visible from 2.5 mL/ha Overwatch® Herbicide (1 g a.i./ha); however, the crops recovered with no significant yield penalties up to 50 mL/ha Overwatch® (20 g a.i./ha) ( $p < 0.05$ ). Serradella was the most sensitive tested species to bixlozone, whereas wheat showed a high level of tolerance. Bixlozone tank-mixes with glyphosate or paraquat did not increase the level of crop damage apart for minor necrosis of some lupin leaves treated with the paraquat mixes.

**Keywords** Bixlozone, lupin, off-target, bleaching