THE EXTENT OF HERBICIDE RESISTANT ANNUAL RYEGRASS IN THE WA CROPPING BELT

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A random survey involving 260 paddocks was conducted to determine the extent of herbicide resistant annual ryegrass (Lolium rigidum Gaud.) in the WA cropping belt. Cropped paddocks were randomly selected from within eight adjoining areas determined by rainfall and latitude. These included Badgingarra in the north-west area through to Lake King in the south-east area and were based on the Agriculture WA crop variety testing areas H2, M2, L2, M3, L3, H4, M4 and L4. Surveying took place prior to harvest in 1998 from a 50 m × 50 m area within each paddock. Ryegrass was easily found in 87% of these paddock sampling areas. A visual assessment of ryegrass density was made and seed was collected from paddocks where adequate ryegrass was present. Samples were stored under shelter but exposed to ambient temperatures over summer. Seed was then germinated on agar before being transplanted into trays containing potting mix. 185 populations were grown outdoors for testing in May-June 1999. Initial resistance testing was performed using the recommended field rate of 375 g a.i. ha⁻¹ diclofop-methyl (1L ha⁻¹ Hoegrass with non-ionic surfactant). Populations which were found to have greater than 25% of ryegrass plants surviving were classified as resistant. The percentage of paddocks containing a herbicide resistant population was found to vary significantly between agronomic areas. Further work is establishing the extent of resistance to clethodim (Select®) and the relationship between resistance status and observed ryegrass density. Results will be presented.