

Resistance surveys and commercial testing services — similarities and differences for annual ryegrass (*Lolium rigidum*) across south-eastern Australia

Peter Boutsalis^{1,2}, John Broster³, Gurjeet Gill¹ and Christopher Preston¹

¹School of Agriculture, Food and Wine, University of Adelaide, PMB 1, Glen Osmond SA 5064, Australia

²Plant Science Consulting (PSC), Prospect, SA 5082, Australia

³Gulbali Institute, Charles Sturt University, Boorooma Street, Wagga Wagga, NSW, 2678, Australia

(peter.boutsalis@adelaide.edu.au)

Summary Annual ryegrass (*Lolium rigidum*) is the most problematic weed species across southern Australian states with estimated crop production losses of over 90 million dollars per annum (Llewellyn et al., 2016). In this paper we compare the incidence of herbicide resistance in ryegrass between GRDC funded random weed surveys and commercial testing services between South Australia (SA), Victoria (VIC), New South Wales (NSW) and Tasmania (TAS) from samples collected in the most recent surveys. The information is presented as percent of resistant samples to the Group 1 FOP, DIM and DEN herbicides, Group 2 sulfonylurea herbicides, trifluralin, triallate/prosulfocarb, pyroxasulfone and glyphosate. Several hundred ryegrass samples were tested with each

herbicide. The random weed surveys detected similar levels of resistance to the commercial testing services for wheat selective Group 1 and 2 herbicides, trifluralin, triallate/prosulfocarb and pyroxasulfone. However, large discrepancies between the two approaches were detected for resistance to clethodim and glyphosate. Reasons for these differences will be discussed.

Llewellyn RS, Ronning D, Ouzman J, Walker S, Mayfield A and Clarke M (2016) *Impact of Weeds on Australian Grain Production: the cost of weeds to Australian grain growers and the adoption of weed management and tillage practices* Report for GRDC. CSIRO, Australia.