

## **Lentil Herbicide Management In Low Rainfall Environments**

Sarah Day<sup>1</sup>

Helena Oakey<sup>2</sup>, Penny Roberts<sup>1</sup> and Larn McMurray<sup>3</sup>

<sup>1</sup> SARDI

<sup>2</sup> University of Adelaide

<sup>3</sup> Global Grain Genetics

Break crops continue to occupy a small percentage of arable land across the southern low rainfall zone, despite extensive research demonstrating their role and value in farming systems. This is generally thought to be due to the perception that break crops have an increased risk and production cost, compared to cereals. There is also a lack of confidence about correct break crop management required to reduce production risk and minimise inputs in a low rainfall system. There is little information in this area, as break crop development has largely occurred in medium and high rainfall zones, and often these strategies are inappropriate for low rainfall environments. Herbicide damage in lentil commonly occurs in low rainfall environments and often the damage that occurs is not consistent across low rainfall environments. This study aims to identify crop safety levels and economic risk of pre- and post-emergent herbicide use on lentil across different soil types and environments in the southern low rainfall zone. To address the knowledge gap, a lentil herbicide management trial was established at Willowie, upper Mid North South Australia, in 2017 and extended to the upper Eyre Peninsula and South Australian Mallee in 2018. There were 24 herbicide treatments applied to PBA Hurricane XT lentil, consisting of six herbicides (Group B and C), each was applied at two timings and at two rates for each timing. Metribuzin applied at a low rate incorporated by sowing was included as a control treatment. Results were variable across environments with few similarities observed between environments. An interaction was observed between herbicide, application timing, and application rate for gross margin at Minnipa 2018, and indicated an increased level of economic risk for some treatments compared to the control. Terbutylazine expressed a lower safety level and higher economic risk compared to the control, Metribuzin, at Minnipa in 2018. Herbicide choice and application timing was shown to be important to reduce risk associated with lentil production in low rainfall environments, particularly as lentil is sensitive to herbicide use in dry condition. Addressing the knowledge gap in low rainfall environments will provide growers with local information on lentil production and management and increase grower confidence in utilising lentil in their rotation.