

Time Of Sowing Impact On Pulse Crop Grain Yields.

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The time of planting in crop production is known to be a key factor for many species to achieve the highest grain yield potential. The optimum time of sowing in cropping zones is well known for some species and varieties, with extensive research work undertaken to better match variety phenology with sowing time for wheat and canola. However, there is limited information regarding the effect of time of sowing on the grain yield of pulse crops in the key pulse production regions of South Australia.

The purpose of this study was to analyse the effect of time of sowing in the major pulse production environments: Yorke Peninsula, Mid-North, Eyre Peninsula and South-East. Research trials were undertaken from 2015-2018 focusing on lentil, chickpea and faba bean. For lentil and chickpea the first time of sowing was driven by the break in the season, generally early May. The second time of sowing was delayed by 3-4 weeks (late May-early June). Faba bean was generally dry sown in mid-April with two subsequent delays in sowing, 3-4 weeks apart.

The results from this work showed that there was large variation in the response to time of sowing for the different pulse species. For lentil, the response to time of sowing was complex, with location and environmental limiting factors having an impact on the yield response. The newer commercial varieties generally showed better adaptation to early time of sowing than the traditional varieties such as Nugget. There were differences in the time of sowing response in faba bean depending on the environment. In the medium rainfall environments there was a consistent positive response to sowing early, with yield reductions from delayed sowing. In contrast, in the high rainfall zone sites, time of sowing generally had no effect on grain yield for most varieties. There was a consistent trend for increased grain yield in chickpea, between 0 and 23%, with later sowing dates. While the trend was for higher yield from later sowing, there was variation in the variety response to early time of sowing. For example, PBA Slasher responded better to early sowing than other varieties.

While the results demonstrated clear trends for each species, an understanding of the differences in agronomic characteristics and how they interact with the environment and potential constraints is important when making variety selection. Variety selection and an understanding the effect of time of sowing on pulse species and varieties allows growers to optimise their seeding program to achieve the highest yield potential for the crops grown.