



Optimising the profitability of High Rainfall Zone Farming Systems

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The GRDC investment “Optimising the profitability of high rainfall zone (HRZ) farming systems – survey, farmer scale demonstration trials and field days” aims to reduce the gap

between current and potential yield in the HRZ, focussing on wheat and canola production.

The high rainfall zone (HRZ) of Southern Western Australia is the arable area where annual rainfall is between 450-800mm. This area represents approximately 1.2 million Ha in WA. As annual rainfall has decreased over the last four decades, the amount of area in the HRZ sown to crops has increased. This is due to less frequent and less severe waterlogging events, which can reduce yields by 37% in wheat alone. Current research suggests that growers in the high rainfall zone are missing out on an extra 1-3 t/ha of wheat and 0.5-1.5 t/ha of canola, depending on the decile year.



Photo: Darcy Warren, FAR Australia

Twenty growers were recently surveyed to ascertain an understanding of current farming performance and system practices in the HRZ regions of the Albany Port Zone. This survey was also completed by 20 growers in the Esperance region managed by SEPWA. The survey covered farm profiles, crop rotations, yields, agronomic strategies, technology and production constraints, answering 56 questions in total! Thanks again to those members who gave their time to complete such a comprehensive survey.

The survey results found non wetting soils to be one of the main physical characteristics impacting yield potential, along with waterlogging. Soil type, free draining soils, and favourable

seasons were the main characteristics that defined our growers ‘best yielding paddock’s. 40% of growers surveyed indicated they would like to do more soil amelioration to increase production over the next five years, since 50% of growers believe they can only achieve higher yields once soil amelioration has taken place. Soil amelioration is soil type dependant, and doesn’t necessarily mean growers need to do something for every paddock they manage.



Photo: Darcy Warren, FAR Australia

Only three of the twenty growers surveyed did not grow wheat. Most growers current cropping rotation have 20 – 50% barley and the same with canola. Scepter was the main wheat variety grown by the respondents with 55% having it in their cropping program. Nuseed GT 53 was the main variety of canola grown with 21% of respondents growing it. The surveys showed five-year wheat yields ranged from 2.5t – 5.5t/ha, with an average of 4t/ha. Canola yield ranged from 1.5 – 2.4t/ha, with an average of 1.9t/ha.

Twelve of the survey respondents currently have yield mapping abilities with six not currently or under utilising the technology. Protein mapping is not currently being used by any of the survey respondents and VRT is being utilised by six of the surveyed growers. Seven of the respondents are using CTF, however most of the growers are looking at implementing it in the next five years to help increase production.

The growers final question was ‘what resources and technology do you need to help achieve an increase in production’: six indicated they would like more resources on precision agriculture, four indicated they need access to specialised machinery, and others stated they would like to see more research around legumes.

SISTER PROJECT TO THE SCF SURVEYS AND FARM-SCALE DEMONSTRATIONS IN 2020-2022

Alongside this project, the SCF and SEPWA grower groups will be working alongside partners from the Foundation for Arable Research (FAR), DPIRD and CSIRO, who with GRDC investment will be conducting small-plot trials looking at aspects of pushing for higher productivity in cereals and canola in the HRZ. Within these small plot trials, researchers will investigate how to optimise production through variety selection and appropriate management, particularly given the unique constraints present in the HRZ. SCF will be assisting with the extension of the small plot trial results as well as attending and promoting in-season field days. SCF and SEPWA will also apply some of the 'best-bet' practices to broad-scale farm trial demonstrations throughout the duration of the project for validation and extension purposes.



Photo: Darcy Warren, FAR Australia.

WHAT RESEARCH IS BEING DONE IN 2020 AND BEYOND BY SCF AND SEPWA?

As part of this project SCF and SEPWA will be conducting two farm-scale trials each, looking at aspects of high yielding crops in the high rainfall zone. In 2020 both groups will be looking at the differences between long-season wheat genetics, in conjunction with deep ripping compared to not deep ripping. In the following seasons, each group will be taking aspects of the plot trial research and applying to our large-scale farm demonstrations. The trial protocol for the 2020 season is listed below-left and SCF are looking for a site from the South Stirlings/Green Range region and a site in the western SCF region around Kendenup and Tenterden.

If you would like to host one of these trial sites, please get in touch with Nathan on 0429 468 030.



Photo: Darcy Warren, FAR Australia.

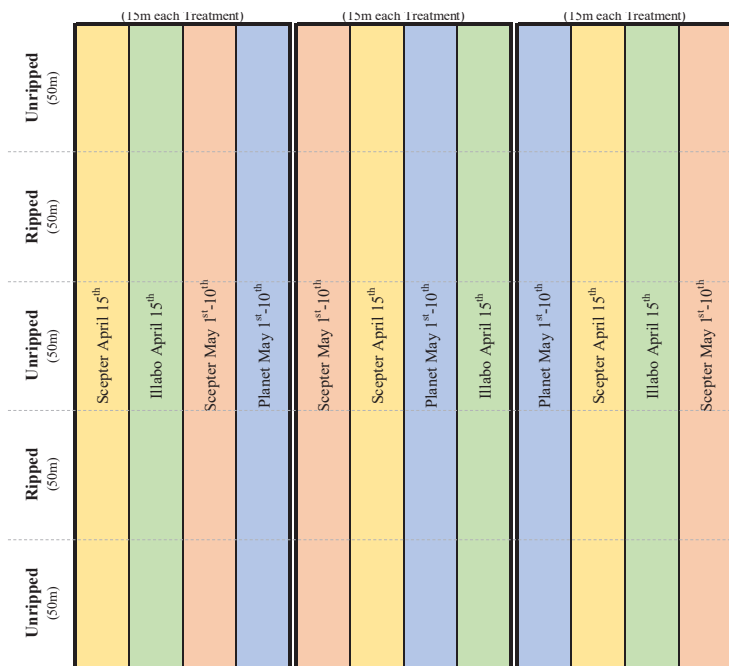


Figure 1: Diagram of the farm-scale demonstration trial to be conducted by Stirlings to Coast Farmers (SCF) in 2020. One trial site will be in the western SCF region and one in the east.

ACKNOWLEDGMENTS

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