Esperance Port Zone - Opportunities and Constraints

Port Zone	Title	Description	Area	Frequency	Impact /cost
Esperance	On the go nutrition testing	Growers are disenchanted by using tissue testing due to lag time in getting results and needing to make faster decisions. If growers had access to this technology in real time, they would regularly test the nutrient levels of their crops to make more informed decisions about applying nutrients at the right time and level to maximise profitability.	4.86	4.43	3.22
Esperance	Growers want to be able to measure the depth to different soil layers, and the effects of deep ripping shallow duplex soil and loamy clay soils.	Growers are still interested in knowing about the effects of deep ripping shallow duplex and loamy clay soils. Because of variable depth to clay and the need to treat the whole paddock the same, to enable a set seed depth, they are starting to rip into shallow duplex and some clay loams. Need to measure effects in these soils.	3.25	3.38	3.38
Esperance	Identifying and understanding soil constraints by having access to soils researchers on farm	The RCSN members wanted to have access to experts who visit a soil pit and give a recommendation on what would best alleviate the most limiting factor	4.32	3.19	2.44
Esperance	Updating phosphorus response curves on high yielding canola	Need to revisit the phosphorus response curves on high yielding canola as growers believe the current thinking on P fertiliser on these high yielding crops needs to be revisited. There is a need for better understanding on nutrient packages to decide on how to economically reach yield potential.	2.82	3.38	3.5
Esperance	Faba bean, Albus lupin, chickpea and lentil agronomy work	Growers will have access to the most profitable legume package to be able to use the most appropriate legume for the rainfall/soil type, including options for herbicide, fungicide, sowing timing/width, soil type constraints and nutrition. Esperance growers are interested in best management packages for faba bean, Albus lupins, chickpeas and lentil including agronomy and nutrition on non-traditional soil types (including N, P, K, S and trace element requirements)	3.95	4.15	4.25
Esperance	Delving and biomass effects on frost damage	Are there any effects of biomass or deep ripping and/or delving on frost impacts in season Further quantification is required of the impact of the delving/ripping treatment and why frost damage is changing.	3.25	2.25	3.57

Esperance	With lack of break crop options, cereal root disease is starting to become more prevalent and is impacting on production	With cereal on cereal rotations increasing in popularity due to a lack of profitable break crops, cereal root disease is also increasing. We need to understand the best way to address this constraint. How much of an effect does cultivation have? Does it outweigh the loss in soil structure and moisture? Is it worth looking at again?	3.13	2.57	3.32
Esperance	Economic response of late season fungicide applications on cereals	Looking to explore late season application of fungicides on wheat and to some extent barley (first sign of grain formation in the head) and the effect on both yield and quality. Yield and quality response curves for different timings of new generation fungicides in a high yielding situation (+5t/ha). Can you save money from earlier season applications and only apply later? How early or late can I go? What is the trade off for yield/operation/MRLs (if any)? Label information on timings vary. In wheat, do you get a benefit at the late timing (first sign on that 1/4 grain). It certainly has a strong visual effect on the colour of the heads (much darker when not sprayed). The main diseases for consideration are powdery mildew & septoria. In a barley, spot and net type net blotch, leaf rust & ramularia.	2.94	3.32	2.69
Esperance	Management of sodic soils	Some areas of the zone have a large proportion of sodic soils, so getting these soil types to work better would be valuable. To date, growers have not had the knowledge, the tools or the confidence to put effort into these soil types. They often tend not to not muck around with them too much; and instead manage to their limitations e.g. pasture rotation, fertilising to moderate yield potential. Are there other more efficient ways to displace sodium on sodic soils than gypsum?	2.88	2.84	2.82
Esperance	Management of high PBI soils	RCSN members highlighted that they were concerned that they weren't getting the best out of their soils with high PBI. Are there ways that they can unlock nutrients that are tied up? And can these high PBI soils be correlated better with DGT?	2.5	2.94	2.82
Esperance	Engagement of young people in agriculture in schools, especially in the city	Huge need for better general education and to attract young people into careers in grains industry. We need to engage with the education dept so that the barriers that have been put in place are reduced or eliminated Promoting careers in agriculture by targeting school or university students to educate about potential jobs in agriculture. How can we attract local workers rather than rely on overseas workers?	4.45	4.9	2

Esperance	Review and validation of the frost work that has already been done in the Esperance port zone	Growers are looking for an update on the investment that has been occurring in this space. Revisiting soil amelioration sites to look at their long-term impacts on frost ie. Delving site from Brownley's. Is there a way to predict frost with historic weather data and model it? Is there anything that you can apply to the crop to reduce frost risk eg. improve crop fitness, alter canopy, protect crop.	3.5	3.45	4.3
Esperance	Timing of glyphosate to crop top canola looking at ryegrass timing and rates	Currently, it is an accepted practice and done commonly on direct headed canola and done because growers want the highest possible yield of canola with best ryegrass control for following years. Growers want to have the ability to compare alternative solutions if the yield loss to achieve appropriate grass control is too large. (HWSM, seed destructors, to actional changes, more aggressive herbicides in following cereal crops). Along with ryegrass timings, they also want to know the effect on yield and oil at different colour change scenarios of canola and also how this relates to canopy. This will help to quantify the economics of yield loss in achieving grass control.	4.2	4.1	2.45
Esperance	Upskilling growers with information on rain forecasting and deciles in the Western Region	How do weather forecasters get the data and determine the season so quickly, and understand the risk of trusting forecasting?	4.3	3.85	2.4
Esperance	Nutrition and updated response curves for maximum production on ameliorated soils	Pushing the production boundary on ameliorated soils, unlocking some nutrients. What fertiliser package is needed after sub-soil constraints have been rectified to meet new yield potential after soil amelioration. NPK as well as micronutrients and sulphur. High rate potash applications - does this have better long term benefits compared to regular applications every season? Also, how will the K shift through the profile, and length of effect?	3.7	3.5	3.2
Esperance	Nitrogen management and measurement: matching N applications to protein requirements	In season deep N soil testing. Is this relevant to our soil types or just an East Coast centric practice? How to best utilise nitrogen. How long does it hang around and how much rain is really needed? Benefits of spraying/streaming UAN vs spreading urea? Timing of application for best/cost effective protein? How do we predict and measure nitrogen use efficiency (low, medium, high).	3.7	3.55	3.05
Esperance	Variable rate technology	Interest in looking at variable rate technology to better target weed and soils issues - particularly looking at seeding rates, weed seeker, green on green and fertiliser and ROI	4.05	3.75	2.3

Esperance	Improving crop germination and establishment	We want to improve crop germination - seeding gear, wetter, in-row seeding. Crop establishment - mechanical or wetting agent solutions in CTF systems to improve crop establishment and get moisture into the furrow in drying environment. CTF sowing into inter-row and getting moisture into the furrow. However still seeing issues with emergence especially into non-wetting and wetting soils, stubble loads and stubble types	3.35	3.4	3
Esperance	Chemical control options for late germinating ryegrass in all crop types	Herbicide resistance issues – but is not limited to ryegrass with marshmallow also appearing to have issues. Ryegrass surviving in kopi soils - little known about these soils. Finding it difficult to get a chemical that is effective. Is it due to poor application as these soils are often very dusty? Or is it another issue?	3.9	3.45	2.35
Esperance	Non-mechanical solutions to soil constraints	Growers are looking for options that aren't mechanical for areas/soils that can't be mechanically ameliorated (sodic soils, heavy gravels, sandy lighter soils) and are potentially more economic compared to deep soil amelioration by mechanical means. There is potential of using crops with deep root structures to maintain soil structure after amelioration.	3.35	2.85	2.65