Hari Dadu:

I hope that everyone is doing well and are getting ready for a big and profitable season. Firstly, I want to acknowledge the app developers from DPIRD Western Australia, led by Art Diggle and the funding support with the GRDC. Agriculture Victoria has been a collaborator with this project and has provided a great deal of historic data to support the app development.

Hari Dadu:

Now let's have a look at the app and how to download it. The app is available for iPads and Android tablets and can be downloaded through App Store and Google Play. But most importantly, it is free. The search items are StripeRustWM, which means wheat management. So if you type in those keywords, you'll be able to see the app as shown in the figure and can be downloaded.

Hari Dadu:

Now let's have a look at the app and app interface and how it looks and basically how it can be operated. The app opens up to a summary table, as you can see on the screen. It has three columns on the right, which is no spray, spray once and spray twice. And on the far left, you can see various parameters that include crop circumstances, current conditions, weather forecast, fungicides used to now, fungicide strategy and other diseases.

Hari Dadu:

And those little arrows next to each section, if you click, you'll be able to see another set of parameters. For example, under crop circumstances, you'll be seeing target yield, yield range, grain price, price range, and cost of production. All these parameters can be adjusted and also to suit your paddock circumstances so that you get the results which you are predicting.

Hari Dadu:

And likewise, under current conditions, we have variety resistant rating, crop growth stage, and disease score. At the moment, we don't have variety list coming with this app, but what we can give is a resistant rating and the ratings for any variety that you grow can be found in the cereal disease guide of that year. And remember, we'll be keeping on updating this app going forward to include all the other aspects that can help to make it more user-friendly.

Hari Dadu:

On the right side, if you see on those three columns, they are actually the predictions that are made based on the selections that you make on the left side. And the predictions are generally available in expected yield, loss to stripe rust in terms of grain yield, which is mentioned in tonnes per hectare. And also, it gives section with net returns, which is mentioned in terms of dollars per hectare. And the purple and yellow highlights, which you see are the best outcome and the worst outcomes based on your selections that you make on the left side.

Hari Dadu:

Again, I just want to elaborate on the other sections as well, which is weather forecast, fungicide used to now, fungicide strategy and other diseases. So you'll be able to modify and play with weather forecast such as if you have any wet days in this week and also next week. And if you have added a seed dressing to your crop, so that also can be selected. So all this sections help you to actually customise the app. And also, it provides the data output, whether to go for a spray or no spray.

Hari Dadu:

And there's another hamburger icon, which the arrow indicates on the top of the screen. Which opens up to another set of options where user can actually click on to view the different interfaces. I suppose if you click on the net return, you can see a range of graphs. And yield, grain price, disease impact, mitigation, disease progress. I'll produce some of the examples in next slides. We'll see how that looks.

Hari Dadu:

So now, we'll take into consideration a couple of imaginary situations and see how the app predicts and also check if that is going on the user's predated mind perceptions. Here is a situation where I have selected a very susceptible variety. For example, maize. So what I've selected on the crop circumstances is I selected a target yield of 3.5 tonnes per hectare. And I changed... All those yield range, grain price, price range, and cost of production are automatically provided. So I didn't change anything. Coming to the current conditions, I kept the crop at ear half emerged. And also, I found a trace of stripe rust in my crop.

Hari Dadu:

So the other options are also remaining constant. So you can see two graphs here. On the top graph, it is actually when you do spray once and on the bottom one, it is spray twice prediction. So what is happening here is, as I said before, the purple colour highlight is actually the best outcome. On the top graph, if a user selects for spray once, it will be ending up with more or less $22 return from spray. That is a profit. And there's a one in 10 chance that you may lose the benefit as well.

Hari Dadu:

And again, on the other side of the graph, you can see the 90% less than 50, which is a nine in 10 chance to get a less profit. But if you decide to go for a spray twice condition, you'll be more often ending in losing your money. And there's only a one in 10 chance to get some profit.

Hari Dadu:

And here, when I said about the hamburger icon, I wanted to show different interfaces. This is one of the interface which appears when you click on mitigation by fungicide. So, the two, graphs here show that the disease is controlled at least by 86% if you spray once. And the other one shows when you spray twice, the disease can be controlled by 96%. So this is based on the selections that we made on the previous slide.

Hari Dadu:

And now, from keeping all the other things same, I just want to play with the target yield and see what it provides, what it predicts. So the target yield is changed from 3.5 tonnes per hectare to two tonnes per hectare. And you can see the graphs are changing to more of yellow highlights. Which means the user is more probably going to lose all their money, even if he selects for a spray once or spray twice.

Hari Dadu:

So this is based on our predictions as well, which says if your crop is at Z55 and if you decide to spray and if your target yield is very low. So you're obviously ending in on the negative side. And that says the app is predicting on the predetermined lines.

Hari Dadu:

And now, we'll also check what happens if the crop growth stage is changed to full flag emergence. So I changed the crop growth stage to full flag emergence, which is Z39. Which means I have found a trace in crop at Z39 stage. And I kept all the other factors constant, which is target yield at two tonnes per hectare. And now you see purple graphs here, which means you're going to end up in profit side. Either you spray once or you spray twice.

Hari Dadu:

And again, the means indicate that you'll be having $154 per hectare, which is higher than spray once, which is $131 per hectare. So this is a scenario where you can say, if you go for twice spray, you're going to end up in getting more benefit. So these are the two imaginary situations which I wanted to show you. And at the same time, if you keep on tampering with all the parameters, the app keeps on predicting different outcomes based on your situation.

Hari Dadu:

The take home message or the bottom line of this app is we want growers to consult the Stripe rust app and see if your spray is economically viable. Also, remember if it doesn't pay, don't spray. Too many sprays will actually give more chances for developing fungicide resistance in your crop. That's the thing. I hope all the other users as well can make the reviews or feedback, either to us or in the app store. So that will help us to keep on improving this app.