

Positively easy centre pivot and lateral move management

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One challenging aspect of centre pivot and lateral move operation is deciding on the most appropriate irrigation strategy. A new tool developed by the National Centre for Engineering in Agriculture (NCEA) allows operators to analyse and compare different application strategies.

The tool, called OVERSched, was developed with support from CRDC and the CRC for Irrigation Futures. OVERSched is

surprisingly simple to use, requiring only a few user inputs, and provides future prediction of soil moisture across the field.

The inputs required are as follows:

- Machine and field length or area irrigated;
- Pump flow rate or system capacity;
- An estimate of daily water use;
- Refill point and current soil moisture estimate; and,
- Depth applied per pass.

SIMPLE TO USE

Figure 1 demonstrates how simple it is to start using the tool. Data about your machine is entered into the yellow boxes on the left hand side. You can set the daily water use to any appropriate figure you choose for different crops at different times of the year.

The middle part of the screen has a representation of your field. You can enter the amount applied to different parts of the field in the yellow boxes with the blue arrows. In this case we are applying 25mm from the end of the field to the middle and then 12mm from the middle to the other end. The same strategy is used on the return journey.

On the other side of the field are three boxes where you can enter current soil moisture data. In this case the deficits entered are 28, 35 and 47mm. The tool can now be run by pressing the calculate button at the bottom of the screen!

Figure 2 shows the screen after the calculations have been performed. On the right hand side, the soil moisture is predicted for the following 12 days at each of the three probe locations. Predictions can be performed over longer or shorter periods by changing the irrigation and simulation duration in the bottom left hand corner.

As well as the soil moisture graphs, the colour of the field changes to reflect differences in soil moisture content. Furthermore, by pressing the play button, the irrigation is animated so you can step through each pass of the machine.

If the prediction is not to your satisfaction, for example the soil at one end of the field is getting too dry before it is irrigated, then you can go back and modify your irrigation strategy by changing the applied depths. Press calculate again and compare this new strategy!

The tool is just as simple to use for a centre pivot.

To use the tool simply go to <http://www.irrigationfutures.org.au/OVERsched.asp>. If you would like more information or assistance using the tool then talk to your local Irrigation or Water Use Efficiency Officer.

FIGURE 1: Information is easily entered into OVERSched by filling in the yellow boxes



FIGURE 2: Predicted soil moisture under a lateral move machine — you can go back and change your application depth to try different strategies

