APSRU agricultural production systems research unit

Software tools for learning and decision support

A number of computer based decision support tools have been created to capitalise on computer systems analyses of climate records to explore probabilities of various outcomes and to provide information on real time conditions e.g. soil moisture or nitrogen. These tools can be used in learning settings as well as being used as analysis tools leading to better informed decisions.

Consider a decision framework .....

Current conditions + Future expectations >>>> Decision

where "Current conditions" might be the soil water and nutrient status or commodity prices while "Future expectations" might be average rainfalls or a seasonal weather forecast. An example "decision" might be to plant at a later date with the expectation of better starting conditions. These tools have been designed to improve understanding in current conditions while providing probabilities of future events.

HowOften?

HowOften? examines the "future expectations" element above from a rainfall perspective For example, what is the chance of getting a planting rain given that a certain amount of water and nitrogen is stored in the soil?

HowWet?

HowWet? estimates water storage and nitrogen mineralisation during fallow periods using farm rainfall records.

HowMuch?

HowMuch? is a simple yield estimator using the water use efficiency concept (WUE) (kg of grain per mm of available water). HowMuch? can be used to investigate management options such as length of fallow and planting date.

Choices Choices

Choices Choices enables easy comparisons of average gross margins for crop sequences or rotations. Choices choices is ultimately flexible, but requires the user to have a good understanding of yields and inputs for various crops.

Availability

These tools are for education purposes and as such are in the public domain and can be downloaded from the internet.
www.apsru.gov.au/products

HowLeaky?

HowLeaky? is a user friendly version of a simplified cropping system model. Crop trial input and output allow "non-modellers" to examine many aspects of crop and soil management on water balance, erosion, pesticide movement and production.

Browser

Browser is a new generation graphical visualisation tool for efficiently exploring time series data. Its efficiency and speed make the task of data exploration (input and output data) more doable in an environment where models generate large volumes of data, much of which is never inspected for reality or cause-effect.

Farm

FARM is an Microsoft Excel® spreadsheet budget suitable for comparing continuous cropping and ley cropping systems on mixed farms. It has been developed to allow simple comparison of crop sequences. The heart of the system is a sequencer that links gross margin data from each enterprise into a multi-period, multi-enterprise gross margin.

For further information

To download any of these products and for further information go to
http://www.apsru.gov.au/apsru/Documents/products.htm

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