Yield Mapping – collecting quality data and utilising the information

Yield mapping has been around for decades with many farmers having more than 10 years of valuable yield map records. Yet there is still an attitude that mapping yield is a low priority during the hectic process of harvesting. We often hear stories like “my yield monitors was switched off during drought seasons, why would I want to record that season”, “the monitor must have stopped working part way through harvest” and “we had several header drivers and it was all too hard to organise”.

The grains industry has clearly failed to place a value on yield maps and thus data collection is generally an ad-hoc step to the harvest operation. We at PrecisionAgriculture.com.au work with over 400 farmers throughout Australia supporting yield data capture, processing and value-adding of data.

Prior to harvest farmers should make sure the hardware components are in good working order on the harvester. The three main components to check including all associated wiring include the grain flow sensor, the GPS feed into the yield monitor and the moister meter. Many yield monitors only require a low cost (approx. $200) sub-metre accurate GPS receiver in order to begin yield mapping – you do NOT require autosteer.

Secondly it is important to be using a formatted data card with pre-defined paddock pick lists and machinery settings, and enough space to record the entire season’s yield data (for those people who cannot commit to regular downloads). When formatting a card for the first time double check with a PA technician that the card is in the correct format (typically FAT) and that the formatting process actually worked (prior to the first day of harvest!).

(Left) Is an illustration of a compact flash card and PCMCIA card adaptor which are commonly used by yield monitors. The compact flash card which fits into this adaptor should typically be between 128MB to 4GB, any smaller or bigger and you may run into capacity and functionality issues.

Common uses for yield maps include:

- Wall paper with pretty colours – but this is only for farmers who do not make the time to utilise the maps to better understand drivers of yield and increase farm profits.
- A record of crop yield to be used for measuring crop management (trials) and understanding paddock variability for farmers looking at variable rate.
- Creation of profit maps – this is a simple conversion of yield into gross margin. It is extremely valuable to know where the money is being made or lost.
- Development of phosphorus application map in the subsequent crop – this may be a blanket application of P or a variable rate P map (assuming P is not a yield limiting factor and are at satisfactory levels).
Preparation is the key to avoiding problems with yield mapping – follow this simple check list to give you the best possible chance for accurate yield mapping this year.

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
<th>N/A</th>
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<tr>
<td>TEST YIELD MONITOR on other paddocks before trial site. Download and check data if practical to do so.</td>
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<td>Calibrate FLOW SENSOR as much as possible for this season (but not halfway through the trial) – read manual for proper method for each machine. Proper calibration means calibrating for different flow rates and yields.</td>
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<td>Calibrate MOISTURE SENSOR against moisture meter – if this isn’t working then yields be completely irrelevant or have large errors</td>
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<td>Make sure the HEIGHT SWITCH is setup and working correctly</td>
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<td>Ensure the right HEADER FRONT WIDTH is in the monitor</td>
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<td>Ensure the correct CROP TYPE is entered into the machine. There are normally different calibration settings for each crop type.</td>
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<td>DON’T try to calibrate the sensors half way through a paddock</td>
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<td>DON’T use 2 headers to harvest key paddocks (i.e. trial sites)</td>
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<td>Raise HEADER FRONT at end of runs. This activates the height switch to turn off logging</td>
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<td>Try to keep a FULL COMB, and use GPS guidance if available</td>
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<td>Harvest up and back PARALLEL WITH TRIAL SITES, not round and round or at any other angle</td>
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For more information or to receive a **free** formatted data card contact: info@precisionagriculture.com.au