

JAN - FEB. 2006



on track to improved profit and lifestyle

CTF UP-2-DATE newsletter

Jan - Feb CTFSolutions Up -2 -Date

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2005 CTF Solutions team highlights

- Over 500,000 ha of high resolution (1m pixel) satellite imagery captured
- Yield and topography mapping services developed
- Very successful CTF05 Conference, 200 people attended, over 100 growers
- Victorian client base expanded with more satellite imagery in the high rainfall zone and new contacts in the Wimmera/Mallee
- Testing of high resolution imagery for sugar cane production
- Condamine Alliance project in Queensland identifying reasons for low uptake of sustainable farming practices in the area
- Fitzroy Basin Association project in Central Queensland provides community base station to growers for 2cm guidance and topographic mapping, and selection of the best machinery for CTF
- Successful outcomes from our GRDC, Fitzroy Basin Association and Condamine Alliance projects
- Development of www.ctfsolutions.com.au website

New faces at CTF Solutions

Wayne Chapman, whom many of you will know, has joined the CTF Solutions team. His extensive machinery experience will assist us greatly in providing the best machinery solutions to farmers; especially with the mass of new technology coming onto the market. Wayne has been operating a farm in Central Queensland as well as a consulting business for the past few years. Before this he worked as part of the original CTF team based in Emerald in Central Queensland.

Blue Perkowicz began this month as a GIS/field officer at the Dalby office. Blue has recently completed his degree in

Applied Science at U.Q.Gatton (with Jeff Tullberg), and has skills in GIS mapping and precision agriculture.

Information Rich Agriculture – exciting new tools for farm management

Precision agriculture (PA) uses new sources of information about your soils and crops. In particular, PA aims to understand the distribution of soils and crop growth within the paddock, so that you can manage within the paddock. Of course, you can't manage if you don't measure.

CTF Solutions has developed a range of tools based on “more detail = greater quality of information = greater understanding = better decisions”. These tools are automated or remote, they interfere little with your day-to-day operations and the data are recorded directly to computers for easy analysis and presentation.

Our research has identified three key tools – satellite imagery, yield monitoring and topography.

High resolution satellite imagery provides accurate and meaningful data at the square metre scale (10,000 values per hectare). Is this overkill? No, many major impacts on your productivity occur at this scale – wheel tracks (compaction), missed planting, poor spraying or spreading, harvest trails, weeds and insects all cause major losses. With you we can assess the imagery to accurately show the extent and impacts, and together we can identify causes and controls (make better decisions).

CTF Solutions is the most experienced provider of high resolution satellite imagery to agriculture in Australia - we have now captured over 500,000ha for the grain, grazing, sugar and cotton industries.

Yield monitoring is coarser (about 150 values per hectare) but is an essential measure of your management. CTF Solutions can process your data,

analyse yields over years and compare with imagery, topography, etc. in a GIS format. To encourage growers to monitor yields, we have purchased a monitor for you to hire as a trial.

Topography is essential information for farm and paddock design, particularly for erosion and waterlogging control. In flatter country, accuracies of 5 cm are needed using RTK-GPS equipment. If you have 2cm auto-steer, you should be able to record your own topo data during normal operations with no extra cost or effort. Once analysed it will give you very detailed information about water flow and topography.

CTF Solutions is committed to developing and providing quality, up-to-date services in Information Rich Agriculture. An ongoing challenge is the farm record keeping system and we expect to make a lot of progress in 2006.

Tyres for Controlled Traffic Farming – an introduction by Jeff Tullberg

At almost any practical tyre pressure, wheels (or tracks – steel or rubber) carrying more than one tonne cause major damage to the soil. After a wheel has passed over the surface, infiltration, plant available water and soil biological activity are all reduced. Random wheel traffic reduces soil's ability to support crop production, and is the basis of a raft of practical problems.

Generally tyre pressure dictates surface damage, and overall wheel load dictates subsurface damage, and how far down this goes. Surface damage might delay the next planting, but it can be fixed by tillage, and will self-repair quite quickly.

Subsurface damage, largely determined by wheel load, is a much greater problem. Deep tillage is expensive, and will often do more harm than good. Self-repair; on the other hand, might take up to 10 years to fix problems at 30 to 40cm, even on a deep-cracking, self-mulching soil. Repair may be even slower on other soils.

We can't farm without wheels, so controlled traffic farming is the best option to restrict damage to cropping soil. The hard, compacted soil in permanent traffic lanes becomes an advantage, providing more efficient traffic and traction, and increasing the window of opportunity for most cropping operations.

The major challenge is to find practical ways to minimise the area of permanent

traffic lanes. There are four interrelated components:

1. Keeping all heavy wheels on the traffic lanes.
2. Minimising traffic lane width.
3. Maximising traffic lanes spacing
4. Accurate guidance

There are obvious trade-offs between these. There is no point in a narrow traffic lane if we can't steer well enough to follow it. Narrow lanes mean narrow tyres, which might in turn reduce practical traffic lanes spacing.

Equipment weight largely dictates tyre size, rating and pressure. Looking at broad acre agriculture, you cannot buy a grain harvester with an axle mass (weight) of less than 10 t. Many exceed 20 t with a full bin. Cotton harvesters are not quite as heavy, but still represent a major impact. The minimum tyre width that can carry loads of up to 10 t/tyre is around 0.5 m. This requires tyres of high ply rating, special rims, and tyre pressures of 280 to 420 kPa (40 to 60 psi). Not cheap, but not necessarily difficult to justify.

New wheels and tyres could reduce the percentage of land area damaged by the header by about 10%. The outcome would be a yield benefit of 20 to 40% (on this 10%), which could be worth anything from \$6 to \$30/ha. New tyres and rims could pay for themselves several times on a header covering thousands of hectares/year. An additional benefit is that 10% less paddock area will have serious tyre damage to complicate the next planting.

If the harvester stays on the permanent traffic lanes, it will be possible to re-start harvesting more quickly after rain - when others are stopped by soft soil. With all tyre damage restricted to the permanent lanes, planting can be started soon after harvest. You can pay for several sets of tyres if you have a new crop growing, while others are spraying out the weeds which germinated on that harvest rain!

2006 CTF Solutions plans

- **Additions to the CTF Solutions team in response to the increased workload.**
- **Major sponsor of CTF06 Conference in Ballarat in September.**
- **Begin development of an automated paddock recording system for farmers.**
- **Help with the formation of ACTFA – the Australian Controlled Traffic Farmers Association (more on this, next newsletter)**

CTF Solutions is a grower-orientated organisation. We need your support and input to provide the service excellence that we strive for.

Please contact us with your comments and ideas. This is your Newsletter, please tell us what you'd like to see more (or less) of!

To contact the **CTF Solutions** team, or to arrange a visit, logon to www.ctfsolutions.com.au

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