

Retrofitting My Equipment with Electronics and The Benefits on My Farm

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In the spring of 2004, I purchased an Outback S and an Outback 360 mapping unit for the air seeder. Part of the decision for that make was made because my dealer was close. The light bar made the learning curve to drive major farm equipment easy for anyone. I was able to move the GPS system from the air seeder to my high clearance sprayer, (Willmar 745) where I found the on-the-go mapping very useful. I have used this light bar to help guide the seeding operation, spraying, land rolling, harrowing, and combining.

In the summer of 2005, I purchased a MF860 combine outfitted with the Agleader PF3000 and I purchased an Agleader PF Advantage to put on my existing MF860 combine. In addition I purchased some portable scales which I use to calibrate the monitors. I also had to purchase a second Outback S, so I would have one for each combine. The most important purchase was the SMS Basic software package from Agleader. This allowed me to analyze all the data that I was collecting.

The combine monitors gave me harvesting information that I could put to use right away. The yield monitor gave me estimates which I could use to estimate storage needs and make better use of my bin space as we were combining. I could also tell the trucker when to expect the bin to fill up. The moisture sensor was a guideline to getting the grain in dry.

The SMS Basic software is very useful in tracking the amounts harvested from each field and allowing me to have better estimates of my inventory.

The mapping software also gives me a good way of estimating harvested areas when I get help from my neighbours. I have an example of a field where a neighbour helped me, and I know accurately how much was done by my combine, and how much my neighbour did.

In 2006, I moved the PF3000 monitor to the air seeder. It is tied into the air seeder switch and allows me to log every seeding move. All those adjustments, screw ups, and test strips, can become learning opportunities, because the data is logged. It is very easy to record any areas that I would like to keep a record of. I also moved the PF Advantage to my sprayer to log every spray load. Again I now have the opportunity to add or leave test strips in my fields and get the feedback at harvest.

The Agleader SMS basic software package allows me to record, map and query all the data that I am collecting. I have an example of a field where I had some extra fertilizer (illustration 1). I needed to empty the fertilizer tank, so I made several passes across the field that I had just finished seeding. After harvest I looked at the yield map from that field, and overlaid the field map of the extra fertilizer. In this case the extra fertilizer produced extra bushels. I have participated in some Greenseeker trials where I have several strips of nitrogen fertilizer put down at 150% of what the rest of the field has. Often I do not see any difference, telling me that in those cases nitrogen was not the limiting factor.

I also have an example of a fungicide application on a field of barley (illustration 2). I sprayed the field, but decided to leave a test strip. The resulting yield map showed me the difference. In this case I calculated a benefit of about 9 bushels per acre. I left another test patch the following year, but the difference is much harder to see. I have done several fungicide tests on my canola, but I have yet to see a difference that will pay for the spray and give me any net benefit.

The ability to record information has paid big dividends. I am now able to log any test areas that I would like to try any seeding (illustration 3) or spraying variations and collect the data at harvest time, and with the software I am able to look at my test and put quantitative numbers to it – did it make me any money? How will I use that information next year? The results are real for my farm, not a guess from someone else's situation.

Another useful addition is my hand held GPS. I am able to exchange information between the hand held GPS and my mapping software. My software generated soil sampling points (illustration 4), and I loaded those points into the hand held GPS and went out to each field and collected samples from those points. I am now able to take soil samples at repeatable locations every year. The accuracy of the hand held GPS is only plus or minus 3 metres, so it is not an exact science, but I feel it is an improvement over random sampling.

In the case where I had a fertilizer application problem and needed to top dress extra fertilizer, I was able to map the seed load in question, transfer a couple of corner points to the hand held GPS and locate the corners in the field. With the rented fertilizer spreader guided by my outback light bar, it was easy to cover the area with a top dressing of fertilizer.

I have found many useful applications of the GPS equipment on my farm. It has been an investment that has already paid for itself.

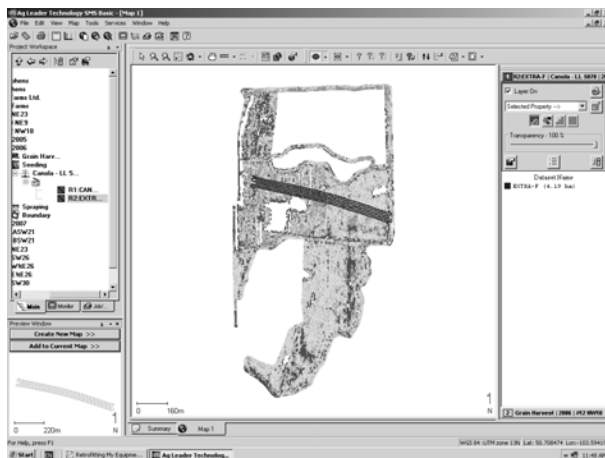


Illustration 1: Extra Fertilizer Strip

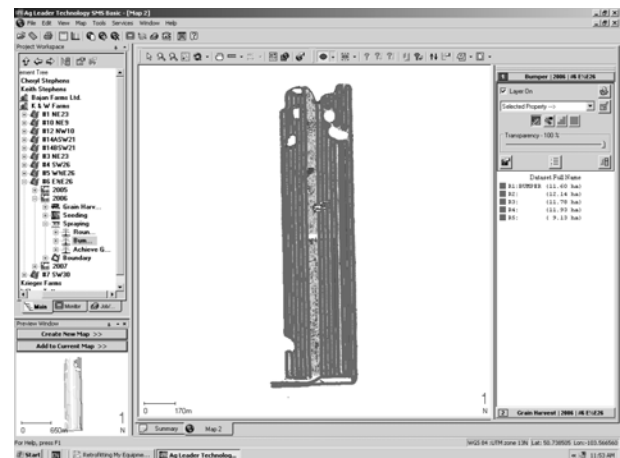
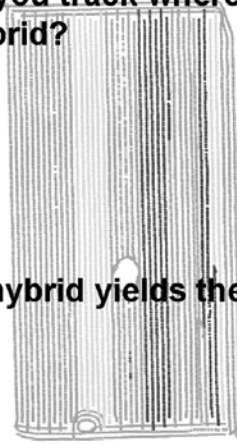


Illustration 2: Fungicide strip

How do you track where you plant each hybrid?



Which hybrid yields the best ?

Repeatable soil sample locations

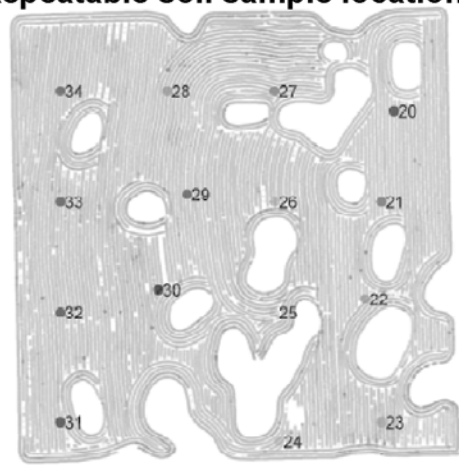


Illustration 3: Hybrid test strips

Illustration 4: Sample locations