



Decision Support Platform Comparison Summary Report

Summary report for: Olds College Smart Farm

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Summary

In the past year we have looked at just a few of the current decision support platforms on the market, these included Trimble Ag Software, FCC AgExpert Field, Climate Fieldview, Decisive My Farm Manager, Farmer's Edge. By comparing these various software platforms we are looking to provide a comprehensive analysis of the capabilities, functionalities, and usability of the products for producers. Producers are looking for easy interfaces that allow for quick data input and functionality to help improve their decision-making ability and data management on-farm.

The key aspects we have chosen to focus on in comparing these platforms are overall cost, ease of use, features and functionality, interoperability, performance, security, and support. They each are equipped with a certain set of tools for use in a number of areas such as financial tracking, marketing, inventory, crop planning and agronomy. While some are unique and may offer something that the other does not, many are similar and it will come down to some of the other factors in play. We can evaluate the cost, in terms of time and effort involved as well as subscription fees to utilize the software. This will allow farmers to see if there is a financial benefit in paying for software and using it for data management and evaluation of in-season applications. We can help to remove the buzz and see what aspects work well and sync nicely with other equipment and platforms and which could use some further development. With that also comes the question of security, how secure is all of your data once it has been inputted into the system? Is that data being shared with others and is it still YOUR data? Once you have invested time into importing all your information how easy is it to export it again and in what format? These are important things to keep in mind when making your decisions.

Introduction

Decision support platforms designed for farm management streamline the record-keeping process by making it much simpler and accessible, while significantly improving their value and functionality for end-user. By allowing producers to collect and manage their data it allows for better opportunities to make informed decisions and in turn improve their bottom line.

Currently, producers are faced with a huge multitude of companies providing data management software that makes claims of many kinds revolving around improving efficiencies and improving profits. In that lies a problem, every operation is different. So how does one start to find a system that works for them? Is it user-friendly? Does the method of collecting and visualizing the data work for them? Does the software provide analytics and actionable insights to utilize all this data to improve the operation? Does it work with

the other systems I currently have in place? We set out to try and answer a few of these questions for them.

Methodology

In this project, five decision support platforms were compared based on a number of parameters. These parameters include:

- Financial Tracking
- Marketing
- Inventory Tracking
- Equipment Inventory
- Farm Map
- Scouting Reports
- Connectivity and Inoperability
- Analytics
- Zone and prescription creation
- Yield and profit report
- Ability to split and change field boundaries
- Weather
- Imagery
- Multi layer data capabilities
- App

The platforms were utilized on the Olds College Smart Farm throughout the 2019 season in order to better understand the features and functionality of each.

Results

Platform Summaries:

My Farm Manager - Decisive farming

- View fields and crop plans on the map
- Track agronomy and crop marketing services
- Up to date equipment records and notes
- Profit margin tracking for all your crops
- Access settings for everyone on the farm
- Telematics compatible to record as-applied and yield data from the field
- Precise field boundaries
- Yield report cards



Crop Marketing Platform built into My Farm Manager makes it easy to be in control with a comprehensive set of tools to track and analyze your market position and overall farm profit.

Packages are available for variable rate applications, agronomy and soil testing and are delivered through the My Farm Manage farm management software.

Croptivity (The App)

- Croptivity simplifies tasks and ensures they are managed quickly and accurately. Use it for scheduling, scouting and tracking applications in the field. All records are stored in one place and can be easily accessed by everyone on your team.
- Track Applications- Record an application, review field application history and generate reports to view seeded acres, variety, application type, date, product and acres applied.
- Team Collaboration and Communications- Keep everyone on the same page by scheduling tasks, tracking activities and sharing reports.
- Manage Inventory - Efficiently record the movement of inventory across your farm and always know what's in your bins.
- Access Records From the Field - Quickly access farm information to know what happened in the past and schedule your next task.

Overall, this software is an excellent tool, whether you are looking to focus on agronomy, financial data or a combination of both. You can get as much or as little from this software depending on how much data you want to enter. The more data that can be entered allows a producer to make strong data based decisions to enhance the day to day operations of the farm. The support system from the online chat or help emails is great and timely so regardless of whether you're a beginner or someone experienced with management style software this is a program that can be easily utilized to manage your farm.

Trimble Ag Software

- Simple farm set up- Create client/farm/field names, import or draw field boundaries, and set up materials manually or by using a pre-built list of chemicals and seeds.
- Automatically sync all guidance lines, field names, boundaries, materials, implements, vehicles, and operator information across all connected devices.
- Streamline Farm Operations - Manage precision farming data from Trimble displays and other sources via API, keeping all of your guidance lines, field names, materials, and machine information in one place.
- Improve reliability of farm records - Automatically create field records based on data collected with your precision farming display to generate an easy-to-understand profitability analysis for each field
- Maps - Trimble Ag Software's Yield Data Cleaning tool automatically fixes issues with grain flow delays, GPS errors, sensor errors, and overlaps, saving you countless hours manually fixing them field-by-field. As more and more farmers move toward precision ag, accurate yield maps become critical when using them for prescriptions or management zones. Clean yield data means accurate maps, which result in more profitable acres.

- Integrating third-party data- Farm data compatibility and connectivity agreements between Trimble Ag Software and other third-party farm management software platforms include Raven Slingshot® system, AGCO VarioDoc and AgCommand® systems, John Deere Operations Center, Case IH Advanced Farming Systems (AFS) Connect™, New Holland Precision Land Management (PLM) Connect, and more.
- Fleet- Customers with a Display Connection license can now utilize the full functionality of Fleet, such as tracking current and historical locations, vehicle utilization, and alerts
- Track equipment locations, status, and utilization view historical positions, Capture time spent idling, moving, and traveling as well as monitor reasons for delays, Access engine diagnostics for real-time machine health

The App

- Allows producers to input, access and share records in real-time from any mobile device
- Works on and offline
- User-friendly layout is easy to navigate
- Used for
 - Field record keeping
 - Fleet management
 - Work orders
 - Crop scouting
 - Soil sampling
 - Grain contracts and bin management

The Trimble Ag Software is a complete package for a new grower exploring farm management up to a producer who wants to track and record every aspect of their farm operation. It encompasses a vast array of options and tools so you have an in-depth look at the overall and day to day farm operations and expenses. In terms of software that can do it all, this is an excellent option to incorporate into your farm operation.

AgExpert Field - Farm Credit Canada

- Use the interactive map of your farm to set up each field
- Track your cost of production
- Activity Record - Record standard activities like planting, spraying, irrigation, equipment maintenance, harvesting and pest control
- Track inventory and contracts
- Manage storage locations including treatment
- Plan your crop rotation
- Crop Insurance reports
- Profitability reporting
- Measure performance- See how your operation is performing from year-to-year, crop-to-crop, even field-to-field. The ability to compare what strategies and inputs deliver results.
- Share information - AgExpert Field lets you share key information, choose the partners, employees and consultants who help you build your operation.



- Accessible - Enter and access your records at any time from any device with the AgExpert App
- Ag Data Transparent - AgExpert is the first Canadian software to be certified Ag Data Transparent. Your data is protected to the highest standards
 - Premium offers access to imagery providers

FCC has done an excellent job in creating a simple to use yet effective financial tool. Regardless of if you're just starting to track finances or have been doing it for years, the transition will be smooth and simple and effective for the most basic or more in-depth farm reports. This would be the optimal software for someone looking at tracking finances and very basic agronomy data.

Climate Fieldview

- Make field data management simple- Collect, store and view your field data in one easy-to-use digital platform that you can access from the field, office or home.
- Upload historical data - Easily move historical data into your account from most major farm management platforms and equipment providers. Simple manual upload is also available.
- Share information- Help your agronomic partners get the data they need to make recommendations tailored to your operation. Share your unique field data from your entire operation, one farm, or single fields.
- Use data for decision making- Instantly visualize and analyze crop performance with imagery and field data maps so you can make the best input decisions for your fields.
- Crop performance analysis- Analyze yield by individual field and variety, so you can make the best decisions for next season. Compare maps side-by-side to better understand field variability.
- Field health imagery - Get consistent high-quality field satellite imagery to help you identify issues early and take action to protect yield before it's too late.
- Optimize inputs to maximize yield and profitability on every acre with variable rate seeding prescription tools and fertility scripting tools.
- Variable rate seeding - Save time and improve productivity with variable rate seeding prescription tools that use your historical field data, combined with proprietary field testing results, to provide planting scripts tailored to your unique yield or profitability goals.
- Fertility management - Optimize inputs to maximize yield and profitability on every acre with manual zone creation and fertility scripting tools.

Climate Fieldview enables producers to collect and analyze field data, measure performance, monitor nitrogen, and build tailored seeding prescriptions. With the ability to visualize multiple layers this program gives producers the tools to better analyze and improve their operation.



Farm Command - Farmers Edge

- Weather Network - Make better decisions with weather info directly from your field and the world's most accurate forecast with on-farm weather stations, access to a network of stations, forecasting, historical data, and predictive modeling.
- Fleet Management - Track Equipment in real-time, view historical paths, monitor equipment metrics, real-time as applied and job data.
- Jobs & Assets - Plan and assign jobs in advanced, track progress, collect records as jobs complete and set alerts
- Analytics & reports - Understand how your farm stacks up and compare the performance of equipment and seed varieties within your region, compare fuel and total productivity, make purchasing decisions and make operational decisions based on operator performance.
- Predictive Modeling -Make informed decisions based on accurate predictions for crop growth, pests, fertility, and yield
- Scouting -Pinpoint your scouting efforts and get the job done faster with powerful tools you can use in the field, identify problems with built-in pest lists, locate problem spots accurately with GPS navigation and take pictures and schedule tasks right from the field
- Maps- Includes a broad series of maps that allow you to visualize and understand your data easily: Zone Maps, As-Applied Maps, Overlap Maps, NDVI Maps, health change maps, and notifications, Variation maps, scouting, treatment, harvest, elevation maps, productivity(equipment), Moisture, Fuel, Vehicle, profit, VR profit maps

FarmCommand provides access to a wide range of information including real-time fleet management; what piece of equipment is working, where it is working, how fast it working and more. It also provides access to the field-centric weather information, satellite imagery, and harvest information. FarmCommand can be tailored to provide a number of different alerts that come through to your computer or smartphone. It has advanced yet easy to use imagery features to help you make faster more informed decisions.

All results displayed in supplemental visual reports available in the appendix.

Conclusions and Future Work

Each of the platforms that were compared in this project has strengths and weaknesses, to the different operations, these aspects may be considered more or less important than that of another. Where certain programs have focused on keeping their program simple and user-friendly showing a simple snapshot of your farm others have become more advanced with embedded analytics that can take your operations to the next level. Farm Management Software is used to optimize and manage farm operations and production activities. The thing these systems have in common is they all help in automating farm activities such as record management, data storage, monitoring and analyzing farming activities as well as streamlining production and work schedules. The software is customized to meet specific farm requirements since each operation is unique.



With the increasing amount of software platforms on the market, we aim to continue to add platforms to our comparison project and to further look at what sets them apart. In doing so we will also be including a rating system that not only takes into account the Smart Farm team but also students and producers to get a more complete picture.

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