

grape growing

Product Review

Vineyard Management Software

We examined the industry's most advanced vineyard management software to determine the pros and cons of each.

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HOW CAN ANYONE grow wine grapes without a database? What seems like a ludicrous question at first is not all that far-fetched. Farming, and especially winegrape growing, are information-intensive operations. But first and foremost, they are businesses, and businesses require accurate record-keeping. Farm planning and budgeting, yield forecasting, pesticide tracking, labor and payroll records, viticultural observations and laboratory analyses all require storage of timely information that can be retrieved and evaluated whenever needed.

Not so long ago, paper filing cabinets sufficed for maintaining all of the records necessary for a vineyard operation. But how secure is that? How do you find anything after the office manager or assistant quits? With the availability of desktop computers, the next progression of record-keeping was to use spreadsheets for data records. Spreadsheets, like Excel, are well-suited for record-keeping as the cells may be organized in any manner then resorted and filtered at will to view only the data that is desired. But spreadsheets suffer from a similar disease that afflicts filing cabinets: data is spread out all over the cyber-office, in computer files that become forgotten or are lost as new spreadsheet files are created every year, and for every different type of data set that is collected.

Databases are the answer to the filing cabinets and spreadsheets of yesteryear. More powerful than spreadsheets, and a one-stop shop for your data storage needs, databases have the ability to capture any number of different data types (e.g., employees, equipment, varieties and rootstocks, block boundaries, insect counts, petiole nutrients, weather, harvest lot numbers, etc.). But not simply a place to store data, the newer software packages provide the ability to extract meaningful information from the mounds of numbers that are collected each season. For instance, how does bloom date of my Cabernet this year compare to previous years and what is an estimated harvest date? Is my tissue nitrogen concentration diminishing or increasing year-after-year? Are my maintenance costs for some equipment so high that it would be cost-effective to replace them instead?

Databases are not new to the wine industry or to the agriculture industry. Some of the software companies presented here have been in business for over two decades. Others are newer to the scene, but are moving quickly to find their place in the wine and grape industry. As the competition intensifies, the product offerings are becoming more useful and germane to vineyard operations of 10 acres to 10,000 acres. And the companies that are developing

the products are taking full advantage of new technologies that are available, such as wireless Internet, PDA (personal digital assistant), GPS (global positioning systems), bar code scanners and RFID (radio frequency identification) tags.

Most of the databases reviewed here had their beginning in the vineyard or other agricultural system. Others are winery software packages that have had software "modules" developed for tracking back into the vineyards. Of the 11 software packages reviewed, there is certain to be one that fits your needs. Some things to consider when looking for a vineyard software database package are:

1. Are you a grower, a winery or a winery with estate vineyards? Some of the software packages are geared more for operations, including budgeting, cost tracking, labor management and regulatory compliance. Others emphasize viticultural practices and quality monitoring. Still others are stronger in contract management of growers. What do you want this database to do for you?

2. Customization. Every grower and winery has different priorities on what they are measuring. Additionally, they might use different terminology in referring to the same information. The

software should not force you to change your practices or technical jargon to suit its needs. It should be malleable enough to conform to your needs and to speak the same language as you and your staff. Many of the databases available allow the user to define their own data fields and to provide customized lists of response options for each item being tracked.

3. Compatibility with your existing data systems. Many operations have existing payroll or accounting systems, grower systems, winery databases or chemical tracking databases. How many of the existing packages are to be replaced and how many are to remain in place? If they are to remain in place, can the new database "interface" with the existing systems? In other words, how much effort will be required to link data between the new and existing systems? Is the vendor willing to work with you to develop seamless linkages from their product into the other products?

4. The maturity of the company and the product being offered. Is this an established company or a new entry in the market? If it is new, has the developer been involved with the industry for very long? You don't want to buy or license a software product only to lose support or any possibility of upgrades

one or two years later. Also, find out if the database may be easily transferred to another platform if another software package is purchased some years later or if your company merges with another company.

5. Software or vaporware? Be sure to have a live demo of the product performed for you or provided for you to try out. A Powerpoint presentation or nice website might look enticing but could be representing what is currently *being developed*, not necessarily the

currently available software release. Make sure that you are buying functional software and not a partially completed product. All good software packages will be continually upgraded, so it is reasonable to expect some features to be “in development,” but be sure that the delivered product will serve your needs right away and that the “in development” features will not be draining you of additional cash. (For this review, I was provided with a live demo on all but one product.)

SOFTWARE FEATURES AND FUNCTIONALITY TO CONSIDER

When reviewing the available products, I inquired specifically about particular functionality from each product.

- Is it a stand-alone or a modular product? Modular products allow for additional functionality to be added to a base package for an additional cost. Oftentimes, all functionality is present but needs to be switched on with a licensing code. On the one hand, it allows a user to start using the software at a lower cost. But it also means that additional costs are involved as more features are desired.
- Does the software have a PDA (hand-held) interface and utility? PDAs are being used extensively in the vineyard for time tracking of personnel as well as for viticultural monitoring and other data gathering in the field. Does the PDA application have GPS compatibility (i.e., can a field observation be tied to a specific location)?
- Is the database located on a remote server or is it located on the company's intranet? If the server is remote and access is through the Internet, make sure that there are adequate security safeguards, such as tamper prevention, hacking prevention, data backup, data encryption, database privacy protection, and server speed and reliability.
- Does the database have user-configurable data fields?
- What is the smallest vineyard unit that can be tracked (i.e., block, sub-block or vine row)?
- Labor tracking and payroll functions.
- Chemical (fertilizer, pesticide): application tracking, ordering, inventory and reporting.
- Farm planning capabilities, including development of a calendar of operations, work order generation, and annual budgets per block or per ranch.
- Economic analyses (e.g., budget variance, profit/loss, return on investment capital).
- Vineyard scouting (e.g., pests, diseases, nutrition, water status, phenology, yield prediction components, fruit maturity).
- Is there an irrigation scheduling utility?
- Are there any “expert system” functions, such as forecasting models or diagnostic utilities? (While some of the programs evaluated had forecasting models, none really had any diagnostic functions.)
- GIS (Geographical Information System) functions (i.e., mapping, rendering of color-coded maps to indicate data values, overlaying of aerial images, etc.).
- Tracking of samples (e.g., petiole and soil) from the vineyard to the laboratory and linking the analytical results to the sampled block and/or location.
- Tracking harvested fruit from vineyard to winery (and traceability back to the vineyard).
- Report generation (tabular and graphical). Pre-defined reports as well as user-definable reports.
- Data export to other software packages, such as spreadsheets, payroll systems, winery databases, GIS.

The products (Listed in alphabetical order)

CROPTRAK

CropTrak by **ScanControl, Inc.** is a database that is built around the use of the PDA as the data collection device. The database is simple to use and requires very little start-up time before it becomes fully usable. There is a desktop application that connects to the database and is used to set up vineyard information, including all of the needed block data. Data fields in the database are fully configurable. The database itself may reside locally on the desktop, on a local server or on a remote server accessible over the Internet. A local copy of the database is kept on each PDA and each desktop computer, allowing work to be done while not connected to the parent database. All data from the database are replicated on the PDA and may be synchronized with the parent database using a wireless Internet connection or using a direct connection to a PC. Synchronization of the desktop database with the central database is done with a single button push.



The look and feel of the software is no-frills: black and white buttons and drop-down lists, which won't win it any style points, but its simple format makes it easy to read and operate in the field. There is a utility to display active vineyard maps, including aerial images, on the screen of the PDA which, when used with a GPS, can be very valuable for field scouting or simply to navigate to specific regions of the vineyard. There is also a means to capture a digital photo (if the PDA has a built-in camera) and attach it to the data record (images may also be attached using the desktop application). There is an optional provision for server-based GIS maps that depict the data that is queried from the database. They may be viewed simultaneously in real-time by any number of authorized users.

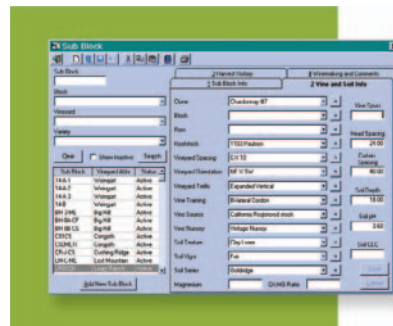
This software will be useful for smaller as well as larger operations as there is no limit to the number of data collection units connecting to the database. However, it does require some manipulation by the user, so there needs to be at least one individual who can be trained to set up the user-configurable fields in the database. The technical user will need to have the ability to generate reports from the data as report generation is not a strong point of this package.

Weaknesses of this package include the lack of payroll tracking (time tracking only), a farm planning utility and built-in reports. The strength of this software is in vineyard scouting, which will utilize a GPS so that localized observations can be logged and mapped. It is a no-nonsense but robust data system that covers most of the bases at a very reasonable price point.

eSKYE VINEYARD MANAGEMENT

eSkye Software has been around for a long time, developing software applications for the wine industry. They have focused primarily on the winery side of the equation but added a vineyard module to the package two years ago.

Like the other winery software applications reviewed here, this product is not a strong vineyard management tool nor will it fulfill many viticultural needs. Its strengths are linking vineyard blocks and their associated attributes to the wines in the tank and,

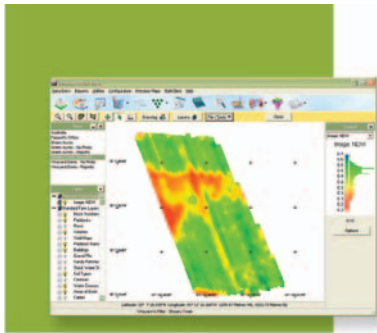


eventually, all the way to the bottle in the marketplace. Hence, this tool will be more useful to wineries than to vineyard operators. Data from the vineyards, of which data fields are user-definable, are entered into the desktop application (there is no PDA data collection utility). Weigh tags from the vineyard are recorded in the database, and the information may be used to identify the vineyard composition of each wine tank and subsequent tanks following any series of blending operations.

This highly polished software package is clearly winery-centric and will serve as a valuable data mining utility to determine the components that go into each bottle of wine. Vineyard managers, however, have other options.

PAM AUSVIT

AusVit was originally developed by the **Cooperative Research Centre for Viticulture** in Australia. The product has been commercialized and is now being marketed and further developed by **Fairport Farm Software**. Fairport has been developing and marketing farm management software products in Australia for 18



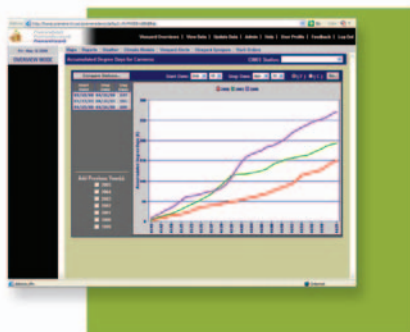
years. PAM AusVit is a very comprehensive vineyard management system. The software is well organized and has a highly polished user interface. The package includes a farm planning utility with full budgeting support. The Pocket PAM is a PDA utility to support the desktop software package. Pocket PAM is used for field scouting and vineyard operations entry but also provides

data entry for other functions, such as inventory tracking. There is a mapping module that serves as a built-in GIS mapping system. The mapping interface may be used as a visual data entry point where data for any vineyard block may be entered or retrieved by clicking on the map. Further, the GIS will read and display spatially collected data from data collectors, aerial images or other field samples.

PAM AusVit is the only software package evaluated that has some expert system functionality. It can be used to generate fertilizer recommendations per a built-in model and can be used to model pest and disease pressure. Overall, this is a very comprehensive software suite. However, it is primarily suited for the Australian market as it stands. Provision of local technical support—along with modifications to the internal chemical database and to the suite of pest and disease models—and this product could be in demand by the U.S. market.

PREMIEREVISION

PremiereVision software was developed by the viticultural consulting company **Premiere Viticulture**. The software was initially developed to serve as a custom data collection tool for the viticulturists and vineyard managers within their own company and, therefore, it has been well thought-out. The company has recently rolled out the product to the market and has been touting



the product's strengths in quality assurance and farm planning. There is no software to install. The software and user databases reside on a secure server, and access to the product is via a web browser. That means that anyone with Internet access may use the software from anywhere in the world. Security is a priority, and data access is strictly controlled using user names and passwords. Each user has a defined authority level so that only trusted personnel may change key data.

Field data collection is accomplished using web-enabled PDAs. Again, no PDA software is required; the user logs into the website on the PDA and enters data directly on the website. While there is benefit to having no additional software to load on each PDA, there is the risk that data connections may be slow or unavailable at some vineyard locations. There is no stand-alone operating mode for the PDAs. This is a warning for those of you in weak signal areas.

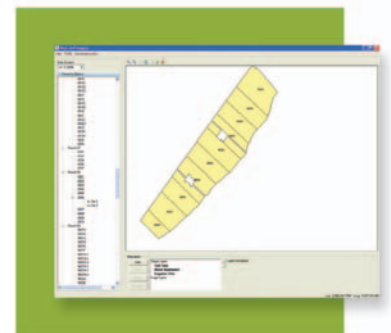
On the other hand, in areas where wireless web access is reliable, the software is a well-designed and easy-to-use tool. It starts with farm planning, where tasks may be assigned individually to blocks or collectively to a selection of blocks. Details may be assigned to each task that will make it easy to generate work orders. The presentation of the activity calendar is very clear with a Gantt chart style of presentation. The display makes it easy to see if tasks are being completed on time.

Outside of the farm planning and progress charts, the tool is not completely geared toward vineyard management. There is no payroll system, for instance, and costs are not assigned at a very low level (i.e., material costs or equipment operating costs). However, it does have entries for chemical applications and produces county pesticide use reports. There is extensive scouting support as well as reporting based in the scouted data. It has a yield estimation tool that can be custom-configured by the user. There is also a harvest prediction utility that extrapolates maturity date from successive sugar samples. The software does not have a GIS interface although existing maps and images may be imported for viewing.

The primary shortcomings of this data system are within the limited set of vineyard economics capabilities and in the lack of GPS-enabled PDA for field scouting. Additionally, the need for PDA web access in the field may restrict its use for some growers. This is a very capable database that has been thoughtfully constructed. The company is constantly upgrading the software based on customer input. Therefore, there is little chance of this software ever becoming obsolete.

SUREHARVEST

SureHarvest originally was created to support sustainable vineyard management, a short time before the completion of the Wine Institute's "Code of Sustainable Winegrowing Practices" was developed. Since then, the software has matured into a complete vineyard management and viticultural support tool. The software is of a modular structure, meaning that groups of functions—such as pest and nutrition, soil and water, vine-



yard sampling and contract management—may each be purchased individually. However, all modules work seamlessly together to form a software system that serves the needs of each customer. The database may be configured as a stand-alone or a networked system. Alternatively, the database may be installed off-site and accessed over a secure Internet connection. The desktop user may "disconnect" from the main database and operate it in stand-alone mode, when necessary, and the data will be synchronized upon reconnection.

The software has a very professional look. It is laid out using vineyard, block and sub-block hierarchies just like a Windows Explorer file system, making navigation intuitive. Blocks, sub-blocks or smaller units may be handled individually, or management groups can be created to make short work of some database tasks. Management groups can be created for anything the grower desires, such as all of the Merlot blocks, all of the VSP trellis blocks or all of the E-W rows, etc. The data fields are almost all user-configurable.

The software integrates with a PDA that is used for remote data collection. The PDA may be synchronized with the parent database by any standard direct or wireless connection means. There is also an integrated GIS tool, which can display layers of information interactively and seamlessly with the database. While not as complete as a dedicated GIS, it provides most of the tools that a vineyard manager would ever need.

Vineyard operations are supported at many levels: from farm planning to assigning costs, to equipment operations and materials, to generation of work orders for vineyard tasks. Some functions are in development and are not in the current software release, such as labor tracking and payroll, as well as detailed farm planning tools. Most other functionality that has been mentioned in this article is in this software package. There is strong support for numerous report formats, and users can define their own reports as well. Any data formats may be imported into the database or exported from the database using customizable data transfer tools. Overall, this is a well thought-out data system that is worthy of a test drive.

TIGER JILL / POCKET JILL

Orange Enterprises, Inc. has been making agricultural support software for 21 years, making them the granddaddy of all of the agricultural-based data systems reviewed here. Their software was originally created for general agricultural use, and modules (there are 73 modules!) have been created to address specific agricultural functions (e.g., irrigation, pest control, economics, harvest, viticulture, etc.).



The longevity of the company is testament to its product, which provides a very comprehensive system for vineyard operations management and viticultural quality control.

Like most of the others, the database may be used stand-alone or in a networked environment. The PDA utility, called Pocket Jill, is the field data capture utility that uses the same database format as the desktop Tiger Jill program and synchronizes with the main database.

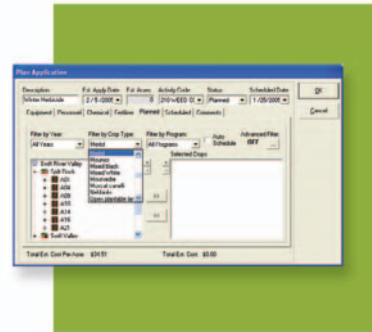
The user can define aliases, or substituted terminology, to replace other terms used by the database. Additionally, some data fields may be hidden from the user if they are not necessary.

The user interface is a bit dated looking although one might call it “retro-chic.” Despite the neon colors and somewhat busy screens, this program is a one-stop shop for a vineyard’s data needs. There is a common screen that the user comes back to, and all functionality stems from the main screen. The user may “drill down” and obtain more details by clicking fields on each screen. Comprehensive employee tracking and payroll functions are included, and bar code or RFID technology may be used to clock employees in and out. Detailed budgeting is available as is a thorough equipment tracking module. Exhaustive economic evaluations may be made through extensive built-in reporting functions. Material applications may be tracked, and pesticide use reports generated.

The irrigation module tracks applications and associated costs but does not perform scheduling. There is no built-in GIS utility, but data may be exported to a GIS. Other data may be exported using a large number of data export formats. Overall, this package is a highly capable utility for vineyard management and viticulture. The company holds annual seminars for their user base, demonstrative of their close interaction with their clientele. The company would not have lasted 21 years if their product line was not excellent.

TOTAL SCOUT / TOTAL RANCH

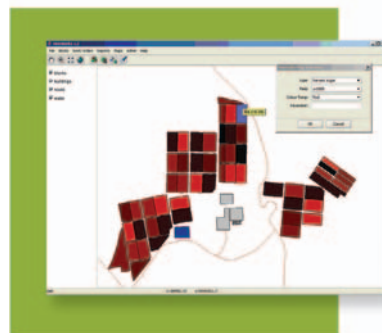
AgCode has been producing agricultural support software for four years, originally developing products for Midwestern farmers. They have branched out into the vineyard market recently, and their product looks like it will be competitive with the others out there. (Note that I did not receive a “live” demo of this product and so will take it on faith that the functions described to me are actually included in the current software version.)



Total Ranch is the vineyard management module while Total Scout is the vineyard scouting and viticultural component of the package. The primary strength of this software design is in its vineyard management utilities. This system creates farm plans and task schedules and manages labor and equipment on the most detailed level imaginable. Pay rules can be programmed into the software for overtime, premium pay and/or for payment by job type. Hourly or piece rate pay can be tracked, and it can also discern between employee labor and contract labor. While it does not have payroll functionality, it will integrate with popular payroll data systems.

The system uses a PDA both for vineyard management and for vineyard scouting tasks. PDAs are used to communicate and execute work orders, clock in/out employees and track materials usage. Scouting functions are performed using the PDA, where data fields are fully user-definable. Laboratory samples may be originated in the field, and bar code tags may be assigned to samples in the field for tracking back to the point of collection in the vineyard. The software has built-in and user-definable reports. There is not an integrated GIS in this software, but data may be exported for that purpose.

The software uses a web interface so that software is not needed on the client’s computer. The web server may be located on-site or accessed remotely over the Internet. All-in-all, this is a good choice if the desired emphasis is on farm planning, management and budgeting, as well as labor management.



VINEWORKS

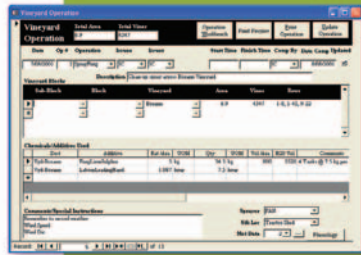
Vineworks is a highly capable, but “lightweight” GIS and database from a new company called **Wornboot Geographics** in BC, Canada. It is intended to facilitate day-to-day vineyard operations. Unlike most of the other packages, this product has a map interface from which most of the database activities originate. For users desiring a map interface that can render data in

color-coded maps, this is a good solution. It does not require nearly as much training as a full GIS but contains most of the rudimentary functionality that most vineyard managers would ever use anyway.

There is no sophisticated farm planning functionality nor is there a strong economic support side to the software. But it can be used to generate, record and track work orders for vineyard tasks. There is no PDA interface with this software, and so it is not really intended to be a viticultural assessment tool. Nevertheless, it is a very clean, well-designed and easy-to-use mapping system that will be very attractive to the smaller vineyard operator.

VINGROW

This is a straightforward database from a small New Zealand company, **Vinsight Software**, that will serve the needs primarily of smaller vineyard operations. It is a desktop-based application with no PDA functionality yet, although a PDA version is in development, according to the company. The database is intended for use right out of the box as there are no user-configurable data fields that need to be managed. Hence, it is more appropriate for growers that do not have the technical resources to customize their database. The system does not perform farm planning at this time, and much of the vineyard economics are done at a block level or task level rather than by piecing costs together from labor, equipment and materials costs. Chemical applications are tracked and may be used to support regulatory compliance. There are several built-in reports, but there is no provision for user-defined reporting.



Overall, this database is fairly rudimentary, though still far better than keeping records in spreadsheet format. The product will be much more robust when the PDA version is released.

VINTNER'S ADVANTAGE

Modular Information Systems has been in business for 21 years and has been providing software to the wine industry for 10 years. Like the other “winery-centric” data systems reviewed here (eSkye and The Winemaker’s Database), the strength of this system is in the tracking from the vineyard through the winery and into the market. It is not intended to be a vineyard management data system nor a quality assurance system. The vineyard module is primarily a grower tracking system, which is a crucial component to any medium to large winery.

There are an unlimited number of user-configurable data fields that can be used to track any vineyard attribute that is desired. There is capability for labor, materials and equipment costs, but the level of detail is probably not sufficient for most vine-

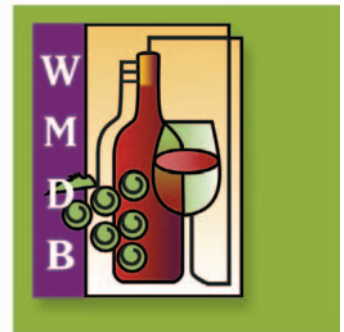


yard managers. There is no field PDA component to this system.

This software package is a top-notch grower tracking system that will be attractive to wineries who purchase grapes but has little to offer a vineyard manager or viticulturist when compared to more vineyard-focused data systems.

THE WINEMAKER'S DATABASE

The **Winemaker’s Database** is the granddaddy of databases for wineries, having been in business for 22 years making data systems for this industry. They have a suite of 24 modules to suit small to large wineries. Another of the winery-centric databases, there is limited functionality as a stand-alone vineyard support package. However, this tool is not marketed as a vineyard management tool. Rather, it is a tool for a winemaker to track quality from the vineyard through to the winery (and beyond). It also provides the vineyard manager the ability to track where his/her grapes end up at the winery.



The vineyard module (which may be operated as a stand-alone program) will track numerous vineyard attributes, all definable by the user. There is a PDA-based application that can be used for scouting, but the scouting should be thought of as a QA device for winemakers or winery representatives to evaluate vineyards that are providing fruit to the winery. In other words, this is a utility that is a component of a highly developed suite of winery software products, but is not ideally suited for use as a vineyard management or viticultural tool. **wbm**

Vineyard Management Software

Company	ScanControl, Inc.	eSkye Software	Fairport Farm Software	Premiere Viticulture	SureHarvest
Software title	CropTrak	eSkye Vineyard Management	PAM AusVit	PremiereVision	SureHarvest
Pricing	\$350 base price for stand-alone version. Enterprise version (multi-user) varies depending on scale.	\$5,000+, depending on features.	\$1,695 to \$3,950 for desktop software. \$300 for PDA software. Annual licensing fee.	Acreage-based. One-time setup fees \$400-\$2,000. Support fees \$540 to \$1,800/year with an additional service fee per acre (e.g., \$7,200/year for 100 acres)	Acreage-based; options for purchase, lease-to-own or annual subscription. System may be purchased as modules.
User-configurable data fields?	Yes	Limited	Yes	No, modifications available.	Yes
Smallest vineyard unit tracked	Sub-block	Sub-block	Sub-block (smaller units may be defined)	Sub-block (smaller units may be defined)	Sub-block (smaller units may be defined)
PDA utility?	Yes	No	Yes	Accessible through an Internet-enabled PDA	Yes
GPS compatible?	Yes	No	Yes	No	Yes
Labor tracking and payroll	Time in/out	No	Tracks labor to tasks and to location; not specifically tailored for payroll functions.	Tracks work order data based on a farm plan; does not support individual time tracking or payroll.	In development
Chemical application and reporting	Records chemical applications and locations applied. Does not generate use reports, but can export data into other systems.	Can track materials applied in the vineyard. No usage reports are built-in.	Thorough tracking of chemical applications; currently uses Australian database. Tracks inventory. Reports are not formatted for usage reports.	Work order-based planning and tracking, including products needed for applications. Prepares county pesticide use reports.	Work order scheduling and tracking. Can generate a California pesticide use report. In development: inventory tracking.
Farm planning and tracking	No farm planning. Records task details as they are performed.	Activities may be scheduled, including applications, sampling, etc.	Farm planning and tracking are functions of the software.	Yes, extensive planning tools. Prepares Gantt charts for task tracking.	Farm planning, including scheduling of all activities for a season.
Resource (equipment) management	Records equipment usage while being used for tasks.	No	Records equipment usage while being used for tasks.	No	Can track equipment usage and associated costs.
Vineyard economics and budgeting	Costs are tracked at a block level and vineyard return on investment can be determined.	No	Extensive capabilities in vineyard cost tracking.	Farm plan provides a budgeting tool. Does not build budget based on low-level unit costs.	Equipment and supplies cost tracking. In development: labor cost tracking and cost estimates during planning.
Vineyard scouting	Any user-definable scouting parameter may be addressed. Photos may be attached to scouting records.	Primarily used for fixed block information, but many tracking parameters are available.	Any user-definable scouting parameter may be addressed.	Vineyard scouting is a strong point of this application. Pests, water status, yield components, etc. may be tracked.	Any user-definable scouting parameter may be addressed.
Irrigation	Vineyard water status may be tracked, but there is no provision for scheduling.	No	Tracks applied irrigation, but is not a scheduling tool. Water status observations used to generate recommendations.	An evapotranspiration (ET)-based scheduling tool is available free to the public on their website.	Tracks applied irrigation, but is not a scheduling tool. Water status observations used to generate reports.
Tracking of phenology, yield components, fruit maturity, etc.	Yes	Yes	Yes	Yes	Yes
Decision support / expert Systems	No	No	Some expert system functionality per Australian research products. Prediction of insect and disease outbreaks.	Harvest date prediction.	No
GIS and mapping	Enterprise edition has mapping tools with real-time data rendering and secure web access.	No	Mapping is integrated with the other tools, including active maps for entering field observations.	No	Yes
Laboratory sample tracking	Any user-definable parameter may be sampled and tracked. No provision for importing laboratory analytical results.	User-definable	Samples may be tracked from the vineyard to the laboratory and data from the laboratory may be imported.	Samples may be tracked from the vineyard to the laboratory, and data from the laboratory may be imported.	Sample tracking to and from the laboratory may be performed.
Traceability to/from wine lots	Weigh tag number may be referenced in harvest tracking function for interface to winery databases.	Weigh tags in field may be tracked all the way through winery to shipping of product.	Not directly, but vineyard areas may be assigned to winery purchasers.	In development	Supports tracking from vineyard to associated winery tracking numbers.
Report generation	No built-in reports. GIS interface can be used to represent information.	40 pre-defined reports built-in.	Numerous built-in reports where data may be filtered to focus results.	Pre-defined reports and user-defined reports are available.	Pre-defined reports and user-defined reports are available. Tabular and graph formats too.
Strengths	Vineyard scouting. Low cost per unit makes it a good solution for small to large operations.	Tracking from the vineyard all the way through product shipment. Tying wine attributes back to vineyard.	A complete package, except for payroll. Highly integrated with mapping and set up for precision viticulture.	System has been designed and built by viticulturists and has a viticulture/quality emphasis.	A complete package that tracks anything desired and provides tools for exploring the data in different ways.
Weaknesses	Data analysis and report generation capabilities are not strong.	Not really a vineyard management tool or a scouting tool; clearly winery-focused	Geared for the Australian industry. Lack of local (U.S.) support at this time.	Annual maintenance fees. Web access by PDAs in the field may be limited in some areas where coverage is poor.	Farm planning tools and payroll features are not yet available, but are in development.
	ScanControl, Inc.	eSkye Software	Fairport Farm Software	Premiere Viticulture	SureHarvest
Contact Information	Pleasanton, CA 925-249-9463 www.scancontrol.com	Glen Ellen, CA 707-996-9754 www.eskyesolutions.com	South Perth, Western Australia 61-8-9367-5814 www.fairport.com.au	Napa, CA 707-261-8750 www.premierevit.com	Soquel, CA 831-477-7797 www.sureharvest.com

Orange Enterprises, Inc.	Agcode, Inc.	Wornboot Geographics	Vinsight Software	Modular Information Systems, Inc.	The Winemaker's Database
Tiger Jill / Pocket Jill	Total Scout / Total Ranch	Vineworks	Vingrow	Vintner's Advantage	The Winemaker's Database
Modular structure for software, pricing. Can purchase only modules that are desired.	Based on acreage and/or number of field personnel.	Licensed based on vineyard size.	Licensing fee: \$1,995 for first year and \$795 per year thereafter.	\$7,000 (winery operations module), \$2,000 (grower contracts module). Other options available.	Contact company for a quote.
Yes	Yes	Yes	No	Yes	Yes
Sub-block (smaller units may be defined)	Sub-block (smaller units may be defined)	Block-level	Sub-block (smaller units may be defined)	Sub-block	Block
Yes (Pocket Jill is the PDA version)	Yes	No	No (PDA tool in development)	No	Yes
Yes	Yes	Yes	No	No	No
Time and attendance system. Detailed tracking of employees and job costing.	Hourly or piece-rate data may be entered for individual or field crew.	Work orders may be generated and tracked in database.	Labor costs may be tracked on a block level by manual data entry.	Labor may be tracked on an hourly or piece rate basis.	No
Tracks chemical applications. Generates county, state and federal use reports. Inventory tracking and worker protection standards posting.	Tracks chemical applications as they are entered. (Pesticide use reports are in development.)	Chemicals and application rates may be specified in each work order.	Tracks applications of chemicals, fertilizers, etc., and handles purchase ordering and receipt of goods.	Application of chemicals. (Ordering and reporting functions are currently in development.)	No
Tracks all aspects of farming operations, but is not a strong planning tool.	Farm planning, including scheduling of all activities for a season.	Software is built around work orders. Farm plans are created by a series of work orders.	No	In development	No
Can track equipment usage and associated costs, including maintenance records.	Very detailed tracking and documentation of equipment and resources used for tasks.	Equipment may be associated with work orders.	Equipment may be cataloged as stock items, but maintenance and operating costs are not tracked.	In development	No
Detailed budget for each managed unit. Tracks deviations from budget. Will prepare a profit and loss report.	Detailed costs are tracked for personnel, equipment and materials. Both employee and contract labor tracked.	Costs are tracked with work orders.	Per block determination of costs may be obtained, as can costs per operation type.	There is no budgeting functionality yet, but costs may be tracked.	No
Pocket Jill may be used for field scouting of numerous parameters. Photos may be attached to scouting records.	Any user-definable scouting parameter may be addressed. User may define measurement scales.	No	Field scouting will become available upon release of the PDA software, currently in development.	No	Yes, there is a PDA application for vineyard observations.
Tracks applied irrigation as well as inputs required for irrigation, but is not a scheduling tool.	In development	Irrigation orders may be generated along with quantities, but there is no scheduling utility.	Work orders for irrigation may be made, but there is no scheduling tool.	In development	Irrigation applications may be recorded, but there is no scheduling utility.
Yes	Yes	Yes	Yes	No	Yes
No	Harvest date and yield prediction.	No	No	No	No
Export to GIS only. Mapping module to capture and create block maps.	No, export to GIS only.	Product is a lightweight GIS utility and provides thematic mapping of vineyard data.	No	No	No
Sample tracking to and from the laboratory may be performed.	Field samples for laboratory analysis may be tracked.	No	No	No	No
Harvests from field may be tracked up to the point of delivery.	Will interface with major winery software databases.	Not directly	A unique harvest number is attached to each harvest unit and can be used to trace back from winery to the vineyard.	Product is winery-centric and may be used to trace fruit from vineyard through the entire process, including sales.	Product is winery-centric and may be used to trace fruit from vineyard through the entire process, including sales.
Hundreds of built-in reports, and there are user-customizable reports also.	Built-in and customizable reports. Formatted both in editable "views" and hard-coded output.	Data are exported to Excel for reports. Thematic maps can serve as visual reports.	Several built-in report formats in the software.	Built-in and user-definable reports are available.	Built-in and user-definable reports are available.
Longevity of company; efficient "drill down" access of high-level data down to details.	Vineyard farm planning, budgeting and cost tracking. Labor tracking and payroll functions.	Easy-to-use GIS system and database. A useful tool for small vineyard operations.	A simple database that requires very little effort to get started.	Strong grower tracking functionality. Primarily a winery operations software that tracks grower lots through to sales.	This product is intended to be a winemaker's tool for quality tracking from a vineyard.
Product not developed specifically for vineyards. Not directed towards high-end vineyard production.	Some functionality is still in development.	No capacity for field data collection. Lacks sophisticated farm planning, budgeting and labor tracking needed for larger operations.	Costly annual fee structure. No user-definable data fields. Limited support in the U.S.	The grower module is robust from a winery standpoint but is quite limited in its vineyard operations abilities.	Not really a vineyard management tool and will not serve that purpose for most operations.
Orange Enterprises, Inc.	Agcode, Inc.	Wornboot Geographics	Vinsight Software	Modular Information Systems, Inc.	The Winemaker's Database
Fresno, CA 559-229-2195 www.orangesoftware.com	Glenwood, MN 877-250-8435 www.agcode.com	British Columbia, Canada 604-374-7963 (no website)	Auckland, New Zealand 415-335-4453 (U.S.) www.vinsight.net.nz	San Ramon, CA 925-244-5930 www.miscorp.com	Sonoma, CA 707-933-8635 www.wmdb.com