Winegrape growers and vintners often cite lack of information about potential costs for implementation as a key barrier to adoption of sustainable practices. To address this barrier, the California Sustainable Winegrowing Alliance (CSWA) worked with an Advisory Group of agricultural economists, other experts and growers and vintners to develop a suite of economic assessment tools. The Economic Tools are primarily excel-based calculators (with one online tool) that are designed for growers/vintners to modify for their operations’ unique circumstances to assess costs, returns, and benefits of sustainable practices. The ultimate goal for the Economic Tools is to help growers and vintners better understand the business value proposition for integrating sustainable practices into vineyard and winery operations.

**ECONOMIC ASSESSMENT TOOLS:**
The vineyard Economic Tools allow growers to evaluate costs and potential savings from implementing different trunk disease prevention practices, support decisions on different types of sprayers, compare dust mitigation methods and develop a sustainable water management strategy. The winery Economic Tools enable vintners to evaluate winery water efficiency and identify hot spots, estimate the true cost of water, and conduct a solid waste audit. In addition, a certification cost benefit evaluation tool can be used by growers and vintners to evaluate the expected benefits and investments associated with the first year of certification.

The Economic Tools can be downloaded from the CSWA website at [www.sustainablewinegrowing.org/economic-tools.php](http://www.sustainablewinegrowing.org/economic-tools.php). Each tool includes an Introduction page, How to Use the tool page, the tool itself, and a Summary page that can be easily printed and used for internal discussions and for tracking over time.
VINEYARD ECONOMIC TOOLS

TRUNK DISEASE MANAGEMENT TOOL:
Grapevine trunk diseases eventually infect every vineyard in California and can significantly reduce yields in mature vineyards, often leading to premature replanting. If adopted in young vineyards, preventative practices can reduce these negative effects. This web-based tool is designed to help growers assess the costs and economic benefits of implementing various preventative practices at different ages of vineyard maturity. http://treeandvinetrunkdiseases.org/economic-tool

DID YOU KNOW?
Trunk diseases are the main depreciable driver of vineyard longevity. Early prevention practices can keep vineyards profitable for the life of the vineyard.

SPRAYER DECISION TOOL - AIR BLAST VS. ELECTROSTATIC SPRAYERS:
This tool assists growers in comparing the financial cost of air blast dilute sprayers (fan assisted) and electrostatic sprayers. While electrostatic sprayers can cost up to twice the price of air blast sprayers, they may allow vineyard managers to reduce the material applied in the vineyard up to 25% without decreasing efficacy in addition to documented water savings. Once completed, the tool provides a summary of the present value for the two sprayer types allowing growers to determine potential payback periods for each sprayer.

DID YOU KNOW?
While initially a greater investment, air blast sprayers can pay off quickly with up to 25% material and water savings.

DUST MITIGATION METHODS COMPARISON TOOL:
This tool has been designed to aid in creating and implementing an effective and cost efficient dust control strategy to protect air quality. The tool provides helpful information on different dust control techniques, types of palliatives commonly used, a simple worksheet for tracking your dust control strategies over time, and a cost comparison calculator that will help inform you of the most cost effective method for you to maintain unpaved roads.

DID YOU KNOW?
This icon in the online self-assessment indicates that an Economic Tool is available for that practice.

VINEYARD SUSTAINABLE WATER MANAGEMENT TOOL:
This tool is designed to help growers create an effective sustainable water management strategy that helps save both water and money, as detailed in Chapter 5 of the California Code of Sustainable Winegrowing Workbook. An efficient sustainable water management strategy contains many complex decisions and is highly variable across regions, varieties, and grape growing goals. This tool can be used to establish a baseline for tracking decisions over time to better understand the economic impact of different water management decisions. The tool includes sections on: vineyard layout, irrigation scheduling, monitoring (water quality, irrigation system, moisture), and other water uses (frost protection, dust control, cover crops, and summer cooling).

DID YOU KNOW?
Conducting a simple Distribution Uniformity test over successive years gives growers the essential data necessary to correct non-uniformity problems.

TOOLS AVAILABLE AT: WWW.SUSTAINABLEWINEGROWING.ORG/ECONOMIC-TOOLS.PHP
CERTIFICATION ECONOMIC TOOL

CERTIFICATION COST/BENEFIT EVALUATION TOOL:
This tool allows potential certification applicants to evaluate the expected benefits and investments associated with the first year of certification. Some expected benefits include meeting new market needs and improving sales relationships. The tool was developed by sustainability experts at thinkstep and is modeled on their well-established Business Value of Sustainability System™. The tool development was guided by feedback from current certified participants who attained multiple benefits of certification.

DID YOU KNOW?
Typically, 75% or more of a winery’s water use can be attributed to a handful of activities. Using the Winery Water Tool can identify “hot spots” to focus efficiency efforts.

WINERY ECONOMIC TOOLS

WINERY WATER EFFICIENCY AND HOT SPOTS TOOL:
This tool walks users through the steps needed to identify the highest water using activities (“hot spots”) at the winery, and results in a conceptual facility water balance to understand where water is being used throughout the winery. This information can be used to promote discussion among staff about where and how water is used and can focus water efficiency improvement projects to target hot spots. The tool also helps users consider the tangible and intangible costs of water and the multiple benefits of improving water use efficiency. After using this tool, a vintner can use the supplemental WINERY WATER BUDGETING TOOL to estimate their current cost of water, including the costs of acquiring water, using the water, and disposing of that water.

SOLID WASTE AUDIT:
This tool provides wineries with easy-to-follow steps for estimating the volume of solid waste generated at their facility by type: pomace and lees, diatomaceous earth, barrels, glass, cardboard, paper, capsules, cork, plastic, wood pallets, packaging, bins, food, landscaping yard waste, and metals. Creating a baseline for solid waste is the first step in creating a solid waste management strategy as outlined in Chapter 12, Solid Waste Reduction and Management, of the California Code of Sustainable Winegrowing (www.sustainablewinegrowing.org/swpworkbook.php). The tool covers how to collect available information, how to conduct a solid waste audit, identifying disposal practices, and estimating the costs and revenues for managing each waste stream.

Pomace is one of the many solid waste streams evaluated using the Solid Waste Audit Tool.
**SUSTAINABLE WINEGROWING COST STUDY:**
UC Davis cost and return study for a sustainable vineyard, showing sample costs for producing “sustainable” winegrapes.

**TOP 62 HIGH IMPACT PRACTICES:**
A qualitative analysis was completed for all 200+ best practices included in the California Code of Sustainable Winegrowing workbook to identify which sustainability practices have the highest impact on the triple bottom line (i.e., vibrant businesses, healthier environment, and stronger communities and workforce). 62 Code workbook practices ranked high for providing value and positive impact in all three areas of sustainability simultaneously (economics, environment and social equity).

**HIGH IMPACT PRACTICES REPORT:**
The SWP online system includes a new report that grower and vintner participants can run to see their current self-assessment scores for the top 62 sustainable practices that have the biggest return on investment with regards to the triple bottom line. This report allows growers and vintners to review these “high impact practices” and helps them determine if focusing their continuous improvement efforts on any of these areas makes sense for their operation.

**HIGH IMPACT PRACTICES ICON $$:**
As SWP participants complete the online sustainability self-assessment, they will see an icon that identifies which practices are high impact in regards to the triple bottom line.

**ADDITIONAL RESOURCES**
http://www.sustainablewinegrowing.org/resources.php

**ENERGY AUDIT FOR VINEYARDS:**
A checklist and educational handout about how to conduct an internal energy audit in a vineyard operation.

**WEED SCOUTING:**
An excel template and handout to help growers assess and identify their weeds and assist in building a weed management plan.

**ECONOMIC THRESHOLDS FOR PEST MANAGEMENT:**
An excel based scouting template and a handout on identifying and treating hot spots, and using economic thresholds.

**THE VALUE OF SUSTAINABLE CERTIFICATION:**
A handout on the benefits of certification for growers and vintners and marketplace drivers for certification.

**CASE STUDY VIDEOS:**
Videos on How to Conduct a Distribution Uniformity Test, Trunk Disease Preventative Practices, the Business Value of Certification, and How to Complete a Winery Water Audit.

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