

INDUSTRY INFOSHEET:

Vineyards and
Wine Making

PRODUCE BETTER **QUALITY WINE** IN GOOD AND BAD YEARS

Discover the opportunities with world-leading **data analysis**

■ Optimize your harvest through deeper analysis of your soil and fruits >

■ Improve the fermentation stage through better process control and analysis >

■ Refine your customer segmentation and branding with data driven insights >



CAMO

www.camo.com

THE PERFECT BLEND OF **YOUR ART** AND **OUR SCIENCE**

■ CAMO Software has worked with leading wine makers and research institutes around the world for many years. Our advanced multivariate data analysis software, **The Unscrambler X**, is widely used in the wine industry, from viticulture to enology and marketing.

Our latest solutions give you even more value from your data by helping to trend, monitor, predict and ultimately improve product quality.

Our powerful analytical tools help you address challenges such as understanding the impact of environmental factors that influence fruit properties even before it is harvested, or monitoring and controlling the complexities of the fermentation process to consistently produce the quality of wine you aspire to at lower cost.

With your know-how and our world leading data analysis software and expertise, we'll help bring your data to life.



It can be hard to see patterns and make sense of complex data using normal statistics, but the patterns show up immediately when analyzed with the Unscrambler

Dr Bob Damberg, Senior Research Scientist, the Australian Wine Research Institute

REAL BUSINESS BENEFITS

Our solutions can be used across all stages of the wine industry, from growing to marketing



Viticulture

- > Analyze fruit and plants during the growing process to determine optimal times to harvest
- > Analyze soil content and tailor fertilization to optimize crop yields
- > Grape rot quantification before and during harvesting
- > Analyze complex data to map and manage vineyard variability



Winemaking/Enology

- > Optimizing the fermentation process by better understanding which parameters influence it
- > Minimizing energy use for tank cooling in the fermentation process
- > Monitor and make timely adjustments to reduce abnormal fermentations
- > Process monitoring and control through the ageing process



Marketing

- > Optimization routines for programming and blending to match orders
- > Deeper analysis of data for better consumer insights to refine your brand strategy
- > Clustering and classification models can be used for improved market segmentation
- > Identify and classify products based on their geographical regions and to assure their authenticity

EXAMPLE APPLICATIONS OF MULTIVARIATE ANALYSIS

Determining the shelf-life of a formulation ingredient for product development

A wine producer client employed sample measurements using a spectrophotometer, in order to measure moisture, pH, lactose, galactose, lactic acid, water activity, and calcium and L-a-b appearance values.

The client needed to determine how to pre-treat and rearrange raw sample data, detect outliers, build and then test prediction models. Using The Unscrambler® software, the client was able to accurately derive the optimal average shelf life of the formulation ingredient. It determined Y-response time using the intervals between the measurement and first fail

date. PLS regression modeling was used to detect outliers, select important chemical parameters and build prediction models.

Quantifying the link between product quality, grape grower and location

A wine producer client observed from data collected over several years that the chemical composition of the grapes relative to region and grower is directly related to wine quality.

The client wanted to identify the consistency in the rankings of the growers (i.e. good growers versus bad growers) over several years and whether the improvement of the scores of a particular

vineyard would indicate an improvement in the quality of the grapes coming from that vineyard. The producer also needed to combine this information with chemical data, to investigate how chemical parameters correlate with Average Wine Quality scores and the relationship between chemical parameters and different growing regions.

Using The Unscrambler® software, the client generated grower rankings and consistency using Descriptive Statistic Analysis; evaluated tasters and vineyards with PCA (Principal Component Analysis); and estimated the effect of chemical parameters on wine quality using PLS regression coefficients and correlation loadings.



JEFFCO
BevScan
NIR Beverage Analyser

PARTNER SOLUTIONS

The JEFFCO BevScan BS01 Through Bottle Beverage Analyser & Classifier uses near infrared spectroscopy to classify and identify bottles of wine and beverages in seconds without opening them. Using a SimCal™ mathematical model built from a few known good bottles of the wine, it can identify oxidation and vintage differences, authenticate vintage wines, check closure integrity and assist in fraud detection. BevScan makes 100% testing feasible and affordable.

www.bevscan.com

BevScan uses The Unscrambler® technology

The Unscrambler X

CAMO SOFTWARE PRODUCTS & SERVICES

Our range of powerful, yet easy to use and affordable solutions are ideally suited for the wine industry.

The Unscrambler® X

Leading multivariate analysis software used by thousands of data analysts around the world every day. Includes powerful regression, classification and exploratory data analysis tools.

 [TRIAL VERSION](#) | [READ MORE](#)

Unscrambler® X Process Pulse

Real-time process monitoring software that lets you predict, identify and correct deviations in a process before they become problems. Affordable, easy to set up and use.

 [TRIAL VERSION](#) | [READ MORE](#)


Unscrambler® X Prediction Engine & Classification Engine

Software integrated directly into analytical or scientific instruments for real-time predictions and classifications directly from the instruments using multivariate models from The Unscrambler® X.

 [TRIAL VERSION](#) | [READ MORE](#)

Consultancy and Data Analysis Services

Do you have a lot of data and information but don't have resources in house or time to analyze it? Our consultants offer world-leading data analysis combined with hands-on industry expertise.

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Training

Our experienced, professional trainers can help your team use multivariate analysis to get more value from your data. Classroom, online or tailored in-house training courses from beginner to expert levels available.

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Our partners

CAMO Software works with a wide range of instrument vendors and data formats, including handheld devices. For more information please contact your regional CAMO Software office or visit

 www.camo.com/partners

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 **Bring data to life**