



**Dr. Dennis Greer**  
Senior Lecturer in Viticulture

# CHARLES STURT UNIVERSITY

## and the Australian Wine Industry

### Industry

Education.

### Business Issue

Charles Sturt University's Dr Greer required an industry-leading statistical analysis solution that would enable him to investigate major problems facing sectors of the Australian wine grape industry.

### Solution

Following an evaluation, and with previous experience of several third-party statistical systems, Dr Greer implemented a SAS/STAT-based solution for all his analysis and statistical work.

### Benefits

Seamless and rapid transfer of data from virtually any data source, along with access to industry leading statistical methodologies from SAS provide Dr Greer with the ability to concentrate on his work rather than underlying statistical model development and data connectivity issues.

At Charles Sturt University's School of Wine and Food Science, Dr. Dennis Greer, Senior Lecturer in Viticulture, is setting the stage for what could be a massive boon in and for the Australian wine industry. Using a SAS/STAT solution, Dr Greer and a research team consisting of colleagues and PhD students are carrying out exhaustive investigations relating to certain wine grape problems.

Among the research programs being conducted by the team is a phenomenon, apparently unique to Australia, that sees Shiraz grapes lose up to 20 per cent of their water content at the end of the growing season. "Given that growers are paid for their grapes on the basis of weight, they're losing up to 20 per cent of their potential revenue stream," Dr Greer explains. "Using the SAS solution, our goal is to identify what's causing that loss, and provide growers with valuable information that can help them gain back that 20 per cent revenue."

In dollar terms, the loss to Shiraz grape growers ranges anywhere between \$1,000 and \$2,500 per hectare, depending on season, location and style of wine for which the grapes are to be used. Given that Shiraz represents approximately 40 per cent of the Australian wine crop, it's a more than significant loss to the industry.

#### Making full use of data

"Data collection is undoubtedly extremely important in this type of research, but accurate analysis is critical," Dr Greer states. "In modern science we have a

marvellous range of tools, technologies and methods for collecting data; and the amount of data we have been able to collect is incredible. The real challenge is exploring that data and it's use in the application of hypotheses."

As is the case in virtually all research work, Dr Greer's efforts involve the collection of as much base data as is possible; and this is an area in which the SAS solution provides a significant benefit. With sample grape bunch weights being measured every two minutes and special equipment measuring carbon dioxide and water vapour emissions every five minutes; over several days, the research team's Excel stored data sets become unmanageable very quickly.



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"The SAS solution gives me the ability to pull in massive amounts of data from wide range of sources with absolute ease," Dr Greer states. "This is one of the major features – letting me get on with my research and analysis without any concern about the amount of data I need to use or its source. It means I can set up any number of other data collection systems or even increase the frequency of existing measurement cycles."

This no-fuss data-to-SAS solution feature results in Dr Greer having much greater freedom in his analysis modelling. He explains: "The transfer of data from the

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source file – regardless of its format – to SAS is so seamless and quick, that I can constantly work on refining my analysis models and not be faced with lengthy data transfer or conversion. Essentially, it lets me focus on my core work.”

### **Speeding the discovery process**

While Dr Greer makes some use of the SAS solution’s graphical user interface to create custom models for his work, the ongoing supply and refinement of statistical procedures in SAS is where he believes its strength truly lies. “To be quite frank,” he says, “I’m not what you would call a SAS power user, but the statistical procedures I have access to through SAS gives me as much flexibility and accuracy in my data analysis.”

As a registered SAS solution user, Dr Greer has immediate access to the growing library of statistical procedures being developed by

the master’s- and doctorate level statisticians working within SAS.

“Statistical analysis is a constantly evolving field; and the regular SAS solution updates mean that I can apply the latest advances in statistical methodology to further improve the research discovery process,” he says.

“Again, it’s an example of using a tool that lets me focus on my research rather than be distracted by a myriad of side issues.”

### **Established credibility**

According to Dr Greer, two of the distinct advantages of using the SAS solution in his research work are its proven credibility and accuracy. “Much of our work is published both in Australia and internationally in scientific and industry publications such as the American Journal of Enology and Viticulture,” he explains. “When we present our findings

in these cases it’s absolutely crucial that the statistical analysis is of the highest quality and above reproach.

SAS solutions are widely recognised as being at the very forefront of statistical analysis,” Dr Greer continues. “Simply the fact of stating in our published works that we used a SAS solution adds an almost immediate additional level of credibility.”



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