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MURRAY VALLEY WINEGROWERS' INC.

BUD FERTILITY PROJECT

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Introduction:

Dissection of grape buds to determine bud fertility was developed by CSIRO and the Victorian Department of Agriculture during the early seventies, as a tool to assist grape growers to regulate cropping levels for their grapevines. Dissection of grape buds during the Winter period was initially used by the Dried Grape Industry to provide growers with information to assist in determining spur, cane and bud numbers to leave on grapevines to achieve desirable yields of good quality grapes.

During recent years, this technology has also been adopted by many Tablegrape and Winegrape growers. Due to the extensive and costly operations required to produce moderate yields of high quality tablegrapes, growers have the ability to regulate bud numbers to assist with this achievement.

More recently, with the changes in the Winegrape industry, with the essential move from production of high volumes, to producing acceptable yields which meet the quality specifications required by the Winery Customers, many Winegrape growers are also using bud dissection to assist with crop regulation.

Bud Dissection Project:

Murray Valley Winegrowers' Inc has developed a project for winegrape growers which may assist by producing bud fertility information on a district basis. This information may then be applied to individual properties and varieties throughout the Murray Valley.

Methodology:

Bud samples of Chardonnay and Shiraz were collected from a total of eleven properties throughout Sunraysia which included Dareton, Irymple, Red Cliffs, Karadoc, Nangiloc and Lake Cullulleraine.

Nine samples of Chardonnay and ten samples of Shiraz were collected from sites which were considered to be fairly uniform in age, health status and management regimes. In all cases the Chardonnay were grafted to Ramsey rootstock, while the Shiraz were planted on own roots and Schwarzmann rootstock. In most cases canopy management involved various levels of box hedging and hand pruning to complete the job.

A total of 100 buds for each sample, were dissected under a microscope. Each sample consisted of 20 spurs with 5 buds for each spur.

Results:

Chardonnay

Bud fertility in terms of fruitful buds for Chardonnay ranged between 76 and 84 percent, with the average being 81.1 percent. Percentage bunches ranged from 126 to 148 percent with the average being 136.2 percent. Necrotic buds ranged from 16 to 24 percent with an average of 18.9 percent. While the average for bud death is considered to be a little higher, the average percentage bunches is also a little higher than the district average.

Shiraz

Bud fertility in terms of fruitful buds for Shiraz ranged between 57 and 92 percent, with the average being 69.8 percent. Percentage bunches ranged from 98 to 160 percent, with the average being 113.9 percent. Necrotic buds ranged from 8 to 43 percent with the average being 30.2 percent. With the exception of the two sites, one of which had very high bud death and the other which was extremely low, the remaining sites were considered to be a little lower than what would be expected for Shiraz.

Without being more familiar with total management considerations in the case of high death, it is difficult to discuss the reasons. However, this may be followed up with the grower at that site. However, the site where bud necrosis was unusually low, had been hedged back to the base of the developing shoots at the end of December, 2004, removing all of the crop. This management decision was made as a result of severe damage caused by a hail event, and this is considered the reason for the low incidence of bud necrosis.

Conclusion:

With the exception of the two unusual Shiraz results, it is considered that the remaining results for Shiraz indicate that bud fertility across the district is a little above average. The variability throughout the individual samples is no greater than what may be expected.

The average fertility for the Chardonnay bud samples also indicates that fruitfulness across the district is above average. Again the variability within the individual samples is what would be expected, given the differences with grapevines, trellises, irrigation, soils and the various approaches to canopy management systems.

It is considered that the results obtained as a result of the bud dissections provides reliable information regarding bud fertility for Chardonnay and Shiraz across the Sunraysia district. This information will assist growers in making decisions regarding crop regulation, based on expected fertility levels for the coming season.

Further modification to pruning approaches may now be undertaken according to individual historical information for past production and canopy management approaches.

The information and results in this report provides an overview of what can be expected in terms of potential district production in Sunraysia for the 2005 season. While this information provides an opportunity to predict initial cropping levels, there are a number of factors, particularly environmentally related, while will also contribute to determining subsequent yield and quality.

Finally, it is suggested that an opportunity be provided for further discussion and also to provide more detailed information which may be required. There is also a need to discuss what has been achieved and benefits of the information, as well as the benefits for the Winegrape Industry by the continued provision of this type of crop prediction information.

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