

## Susan Barnes Rodriguez

Department of Viticulture & Enology  
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### EDUCATION

- 1984-85      **Postdoctorate**, Dept of Microbiology & Genetics, Massey University, New Zealand
- 1982      **Ph.D. Microbiology**, Dept of Bacteriology, University of California, Davis
- 1973      **B.A. Biology *cum laude***, University of Pennsylvania, Philadelphia
- 1969-71      Vassar College, Bachelors program, Poughkeepsie, New York

### PROFESSIONAL EXPERIENCE

- 2001 – present      **Lecturer, Research Fellow, & Director, VERC Wine Sensory Laboratory**  
Department of Viticulture and Enology  
California State University, Fresno, CA
- 1996-2000      **Research Microbiologist**  
E & J Gallo Winery  
Modesto, CA
- 1993-1996      **Research Scientist**  
Indiana University, Kokomo, IN
- 1992-1993      **Research Microbiologist GS-12**  
USDA-ARS, Western Regional Research Center  
Albany, CA
- 1990-1991      **Consultant**  
Massey University  
Palmerston North, New Zealand
- 1987-1989      **Senior Scientist**  
Biotechnology Division  
Department of Scientific & Industrial Research (DSIR)  
Palmerston North, New Zealand
- 1986-1987      **Assistant Professor**  
Dept of Food Science & Technology  
Cornell University, NY State Agricultural Experiment Station  
Geneva, NY 14456
- 1981-1984      **Microbiologist**  
Heublein Wines (now Constellation Wines), Madera, CA 93639

## TEACHING

Advanced Sensory Evaluation of Wine (Enology 105): spring 2002-fall2013  
Wine Microbiology Laboratory (Enology 125): spring 2008-2013  
Microbial Physiology (Microbiology 161): fall 2007  
Wine Analysis Laboratory (Enology 116): fall 2007  
Wine Evaluation Techniques (Enology 45): fall/spring 2005-2009  
Introduction to Enology (Enology 15): 2002, 2003  
Raisin Production and Processing (Viticulture 103): 2001

## RESEARCH GRANTS

S. B. Rodriguez, R. J. Thornton Early detection of grape trunk disease by Raman spectroscopy CSU Agriculture Research Institute (ARI) 2014 – 2015	<b>\$23,437</b>
R. J. Thornton, S. B. Rodriguez Quantification of microbial rot in wine grapes American Vineyard Foundation (AVF) 2014 – 2015	<b>\$68,102</b>
R. J. Thornton, S. B. Rodriguez Development of an FTIR-based 'field calibration' for wine grape rot quantification CSU Agriculture Research Institute (ARI) 2013 – 2014	<b>\$74,714</b>
R. J. Thornton, S. B. Rodriguez Quantification of microbial rot in wine grapes American Vineyard Foundation (AVF) 2013 - 2014	<b>\$92,457</b>
S. B. Rodriguez and R. J. Thornton Raman spectroscopy and microbial identification AVF 2011 – 2012	<b>\$22,033</b>
S. B. Rodriguez and R. J. Thornton Identification of wine yeast & bacteria by Raman spectroscopy ARI 2011 – 2012	<b>\$22,033</b>
R. J. Thornton, S. B. Rodriguez, G. Takeoka, E. Person, R. Wample Quantification of rot in wine grapes ARI 2009 – 2012	<b>\$288,692</b>
R. J. Thornton, S. B. Rodriguez, E. Person, R. Wample Quantification of rot in wine grapes ARI - Federal Fund 2009	<b>\$99,823</b>
R. J. Thornton, S. B. Rodriguez Quantification of microbial rot in grapes	

AVF 2008 – 2012	<b>\$487,492</b>
R. J. Thornton, S. B. Rodriguez, The influence of <i>Saccharomyces cerevisiae</i> and <i>Saccharomyces bayanus</i> yeast strains on color enhancement and color stability in the vinification of Cabernet Sauvignon grapes from the San Joaquin Valley	
AVF 2008 – 2010	<b>\$75,000</b>
S. B. Rodriguez, R. J. Thornton Evaluation of wine yeast strains for color enhancement, color stability and flavor in Cabernet Sauvignon and Zinfandel grapes grown in the San Joaquin Valley	
CATI-ARI 2007 – 2009	<b>\$44,750</b>
S. B. Rodriguez Supertasters and nontasters: do they perceive wines differently?	
CATI-ARI 2007-2008	<b>\$19,985</b>
R. J. Thornton, S. B. Rodriguez, K. C. Fugelsang, B. H. Gump Selective hybridization of wine yeast strains to enhance the production of flavor/active thiol compounds in Sauvignon Blanc wines.	
CATI-ARI 2005 – 2007	<b>\$70,510</b>
R. J. Thornton, S. B. Rodriguez, K. C. Fugelsang, B. H. Gump Detection, enumeration, viability and vitality of strains of <i>Lactobacillus</i> and <i>Pediococcus</i> in wine	
California Competitive Grant Program for Research in Viticulture & Enology (CCGPVE) 2005 – 2006	<b>\$25,000</b>
R. J. Thornton, S. B. Rodriguez, K. C. Fugelsang, B. H. Gump Identification, enumeration, viability and metabolic activity of yeasts and bacteria during winemaking and wine processing	
CATI-ARI campus grant 2005 – 2006	<b>\$28,900</b>
R. J. Thornton, S. B. Rodriguez, K. C. Fugelsang, B. H. Gump Characterization of the growth of strains of <i>Oenococcus oeni</i> in the presence of <i>Saccharomyces cerevisiae</i> in real time during winemaking	
AVF 2004 – 2005	<b>\$10,000</b>
CCGPVE 2004-2005	<b>\$10,000</b>
R. Wample, D. Schulteis, G. Wraith, R. J. Thornton, S. B. Rodriguez, Commercializing a New Raisin Product: California Golden Sun Dried Raisins “Buy California Initiative” Specialty Crop Grant 2004 – 2005	
	<b>\$46,700</b>
R. J. Thornton, S. B. Rodriguez, K. C. Fugelsang, B. H. Gump Identification, enumeration, viability and metabolic activity of yeasts and bacteria during winemaking and wine processing	

CATI-ARI campus grant 2004 – 2005	<b>\$19,400</b>
R. J. Thornton, S. B. Rodriguez, K. C. Fugelsang, B. H. Gump Effect of vine root aeration on raisin productivity “Buy California Initiative” Specialty Crop Grants 2003-2004	<b>\$73,078</b>
R. J. Thornton, S. B. Rodriguez, K. C. Fugelsang, B. H. Gump Evaluation of factors affecting the occurrence of sluggish or stuck high-density wine fermentations “Buy California Initiative” Specialty Crop Grants 2003-2004	<b>\$129,800</b>
R. J. Thornton, S. B. Rodriguez, K. C. Fugelsang, B. H. Gump Characterization of the flavor spoilage potential of different strains of <i>Dekkera/Brettanomyces</i> “Buy California Initiative” Specialty Crop Grants 2003-2004	<b>\$110,500</b>
S. B. Rodriguez, R. J. Thornton Investigation of technologies for rapid determination of mold in dried figs CATI-ARI 2004 – 2005	<b>\$29,636</b>
R. J. Thornton, S. B. Rodriguez, K. C. Fugelsang, B. H. Gump Characterization of the growth and flavor potential of strains of <i>Oenococcus oeni</i> in red and white winemaking AVF, CCGPVE 2003 - 2004	<b>\$20,000</b>
S. B. Rodriguez, R. J. Thornton Determination of timing of oleate raisin spraying Raisin Administration Commission 2002 - 2003	<b>\$10,000</b>
<b>TOTAL</b>	<b>\$1,810,503</b>

## INDUSTRY CONTRACTS

2014-15 <b>Cheminova:</b> Difference testing of Chardonnay wines made from grapes from fungicide viticultural trial. S. Rodriguez, J. Giannini	<b>\$3,600</b>
2012-13 <b>Valent USA Corporation:</b> Difference testing of Chardonnay wines made from grapes from fungicide viticultural trial. S. Rodriguez, J. Giannini	<b>\$3,049</b>
2012 <b>Scott Laboratories, Inc.:</b> Fermentation of two varieties of San Joaquin Valley grapes using different malolactic bacteria & tannin products. S. Rodriguez, J. Giannini	<b>\$4,992</b>
2011 <b>Scott Laboratories, Inc.:</b> Fermentation of three varieties of San Joaquin Valley grapes using different yeasts, malolactic bacteria, tannin products. S. Rodriguez, J. Giannini	<b>\$7,468</b>
2010 <b>Scott Laboratories, Inc.:</b> Fermentation of three varieties of San Joaquin Valley grapes using different yeasts, and tannin products. S. Rodriguez, J. Giannini	<b>\$7,326</b>
2010-11 <b>Arysta LifeScience:</b> Fermentation rate and sensory differences of wines made from fungicide-treated and control grapes. S. Rodriguez, J. Giannini	<b>\$2,463</b>

2009	<b>Scott Laboratories, Inc.:</b> Fermentation of four varieties of San Joaquin Valley grapes using different yeasts, fermentation nutrients, ML bacteria. S. Rodriguez, J. Giannini	<b>\$6,000</b>
2008-09	<b>Valent USA Corporation:</b> Difference testing of Chardonnay wines made from insecticide control vineyard trials. K. Fugelsang, S. Rodriguez	<b>\$3,859</b>
2007-08	<b>Organic Laboratories/Terra Nova Turf:</b> Sensory effects of wine made from French Colombard grapes sprayed with Organocide™. S. Rodriguez	<b>\$1,584</b>
2006-07	<b>Oasis Foods:</b> Produce fig wine and conduct consumer testing on wine sweetened to two different levels. K. Fugelsang, S. Rodriguez	<b>\$ 435</b>
2006	<b>Cacciatore Winery:</b> Sensory differences in wines cold stabilized by traditional refrigeration, flash refrigeration or electro dialysis. R. Wample, S. Rodriguez	<b>\$4,209</b>
2005-06	<b>Kim-C1 LLC:</b> Sensory effects of wines made from French Colombard grapes sprayed with plant growth regulator, Prestige™. S. Rodriguez, K. Fugelsang	<b>\$2,010</b>
2005-06	<b>PQ Corporation:</b> Difference testing of Merlot wines made from powdery mildew control vineyard trials. K. Fugelsang, S. Rodriguez	<b>\$4,434</b>
2005-06	<b>Valent USA Corporation:</b> Difference testing of Chardonnay wines made from grapes from four viticultural treatments. K. Fugelsang, S. Rodriguez	<b>\$2,850</b>
2004-05	<b>AEB Biochemical USA, Inc.:</b> Sensory effects of mannoprotein added to wines. S. Rodriguez	<b>\$502</b>
2004-05	<b>PQ Corporation:</b> Difference testing of Chardonnay wines made from powdery mildew control vineyard trials. K. Fugelsang, S. Rodriguez	<b>\$1,708</b>
2004	<b>Pall Corporation</b> - Sensory and analytical testing of wines made using cross-flow filtration. K. Fugelsang, S. Rodriguez	<b>\$30,000</b>
2003-04	<b>Chr. Hansen Inc. -</b> Flavor Design” trials, sensory differences of blends of <i>Saccharomyces</i> and non- <i>Saccharomyces</i> yeast cultures. R. Thornton, S. Rodriguez	<b>\$6,569</b>
	<b>TOTAL</b>	<b>\$89,459</b>

#### **M.S. ENOLOGY & VITICULTURE CANDIDATE THESIS COMMITTEE:**

- 2013 **Jorge Ramirez-Perez**, “Quantification of rot in Chardonnay and Zinfandel grapes of the San Joaquin Valley”
- 2010 **Hatice Durgun**, “The quantification of rot in wine grapes”
- 2010 **Swetha Kovvali**, “Effect of growth of wine spoilage bacteria using flow cytometry” (M.S. Biotechnology, Department of Biology, California State University, Fresno)
- 2010 **John Giannini**, “Yeast strain and its chemical & sensory Impact on red wine phenolics”
- 2008 **Tiffany Otto**, “Detection, quantification and viability of the wine spoilage bacteria, *Lactobacillus* and *Pediococcus*, using polyclonal antibodies and flow cytometry”
- 2008 **Maureen Qualia**, “The evolution of phenolic compounds in red wine during post-fermentation maturation: Correlation with perceived astringency and bitterness”
- 2008 **Olga Karapanou**, “Wine grape yeast interactions”
- 2006 **Eiji Akaboshi**, “Real-time monitoring of *Hanseniaspora* and *Metschnikowia* using fluorescently labeled antibodies and flow cytometry”
- 2006 **Oren Kaye**, “Determination of grape and wine sensory attributes resulting from different pruning and irrigation practices on the Syrah cultivar”

- 2005 **Donald Chaney**, “Microbial, chemical and sensorial considerations for managing high-density fermentations”
- 2005 **Elizabeth Dickson**, “The effects of three nitrogen treatments on the fruit composition of *Vitis vinifera* cv. Cabernet Sauvignon”
- 2004 **Jeffrey Farthing**, “Fermentation of high density Chardonnay and Cabernet Sauvignon by strains of *Saccharomyces cerevisiae*”

## HONORS/ACTIVITIES

- American Society of Viticulture & Enology Nominating Committee, 2012-13
- Division of Graduate Studies Winning Thesis Committee Member (Hatice Durgun), May 20, 2011
- Journal of Food Processing and Preservation reviewer, 2011 - present
- Journal of Agriculture and Food, Editorial review board, 1999 - present
- USDA-ARS Competitive Grants reviewer, 1996 - present
- Visiting Scientist, Indiana University, Kokomo, September 1993
- Honorary Lecturer, Dept. of Microbiology & Genetics, Massey University; 1987
- American Journal of Viticulture & Enology, Editorial review board, 1984-91
- University Grants Committee Postdoctoral Fellowship Award, Massey University, 1984 (This award was one of two at Massey University in 1984)
- Member of the Steering Committee for the formation of the New Zealand Society of Viticulture & Oenology, 1984
- NIH Predoctoral Trainee, University of California/Davis (1976 - 1980) and University of Virginia (1973 - 1974); Teaching Assistantship, University of California/Davis (1974 - 1976)

## MEMBERSHIPS

- American Society for Viticulture & Enology, Professional Member, 1984 – present
- American Society for Microbiology, Member, 1978 – 2009, 2013
- Institute of Food Technologists, Professional Member, 2001 - 2009

## PRESENTATIONS AT SCIENTIFIC MEETINGS AND CONFERENCES

- Poster paper: Yeast strain and its chemical and sensory impact on red wine phenolics. Thornton, RJ, Rodriguez, SB, Fugelsang, KC, and JC Giannini at the American Society for Enology & Viticulture Annual Meeting, Seattle, June 2010.
- Poster paper: The use of Raman Spectroscopy in the quality evaluation of wine grapes. Rodriguez, SB, Ramirez-Perez, J., Durgun, H., Wood, S, and RJ Thornton at the American Society for Enology & Viticulture Annual Meeting, Seattle, June 2010.
- Poster Paper: Quantification of grape rot by FTIR and chemometrics. Rodriguez, SB, Durgun, H, Ramirez-Perez, J, Wood, S, and RJ Thornton at the American Society for Enology & Viticulture Annual Meeting, Seattle, June 2010.

- Poster paper: The use of flow cytometry to distinguish different genera of wine yeasts in spontaneous fermentations. Thornton, RJ, Akaboshi, E, Dilley, S, and SB Rodriguez at the Australian Wine Technical Conference, Adelaide, Australia, July 2007.
- Non-molecular methods of detection of wine microorganisms. Thornton, RJ (presenter) and SB Rodriguez, Micro-Flora Symposium at the American Society for Enology & Viticulture Annual Meeting, Reno NV, June 2007.
- Invited speaker, “Flow Cytometry and Antibodies”, Beam Wine Estate Technical Meeting, Santa Rosa, CA, Aug 14, 2006.
- Poster paper: Analytical and sensory testing of wines made using crossflow filtration. Fugelsang, KC, Rodriguez, SB, and L Madsen at the American Society for Enology & Viticulture Annual Meeting, Sacramento, June 2006.
- Invited speaker, “Flow cytometry and antibodies”, International Wine Microbiology Symposium, Tenaya Lodge, CA, Apr 5, 2006.
- Poster paper: Detection and quantification of *Oenococcus oeni* in Chardonnay and Syrah fermentations by flow cytometry. Rodriguez, SB, Holzer, S, and RJ Thornton, American Society for Enology & Viticulture Annual Meeting, San Diego, CA, June 2004.
- Invited speaker, “Speedy answers to malolactic questions: Detection of *Oenococcus* in Wine by Flow Cytometry”, Managing the Winery laboratory, Vineyard and Winery Management conference, Santa Rosa, CA, Apr 20, 2004.
- Poster paper: L-Arabinose utilization by *Pachysolen tannophilus*. Thornton, RJ and SB Rodriguez at the American Society for Microbiology Annual Meeting. Washington, DC, May 1995.
- Poster paper: Aflatoxin production in pistachios. Rodriguez, SB, Mahoney, M, and D King at the USDA Workshop on the Elimination of Aflatoxin, Fresno, CA, Nov. 1992.
- Invited speaker, “Rapid utilization of malic acid by a mutant of *Schizosaccharomyces malidevorans*”, 2<sup>nd</sup> International Symposium for Cool Climate Viticulture & Oenology, Auckland, New Zealand, Jan 1988.
- Poster paper: Complexity in Chardonnay wines: effects of malo-lactic fermentation and barrel fermentation. Rodriguez SB and RJ Thornton at the Second International Symposium for Cool Climate Viticulture and Oenology. Auckland, New Zealand, Jan. 1988.
- Poster paper: Sugar utilization and glycerol production by four common grape molds. Rodriguez, SB, Ravji, RG, and RJ Thornton at the Australian Wine Industry Technical Conference, Adelaide, South Australia, July 1986.
- Invited speaker, “Malo-lactic fermentation” at the Te Kauwhata Viticultural Research Station Annual Field Day, May 1985.
- Invited lecturer, “Winery Sanitation Workshop”, American Society for Enology & Viticulture Annual Meeting, San Diego, June 1984
- Invited speaker (“A genetic and physiologic study of nucleoside triphosphate synthesis in *Salmonella typhimurium*”), West Coast Bacterial Physiologists, Asilomar Conference, California, Dec. 1980

## WORKSHOPS

- “Wine faults” for Orange County Wine Society, Department of Viticulture & Enology, Fresno State, April 29, 2009.

- “What makes a good red wine?” for Orange County Wine Society, Department of Viticulture & Enology, Fresno State, March 24, 2007.
- “Wine faults” for Orange County Wine Society, Department of Viticulture & Enology, Fresno State, May 6, 2006.

## PUBLICATIONS

### **Rodriguez, SB, Thornton, MA, and Thornton, RJ (2013)**

Raman spectroscopy and chemometrics for identification and strain discrimination of the wine spoilage yeasts, *Saccharomyces cerevisiae*, *Zygosaccharomyces bailii*, and *Brettanomyces bruxellensis*. Appl Environ Microbiol **79**:6264-6270.

### **Rodriguez, SB, and Thornton, RJ (2008)**

Use of flow cytometry with fluorescent antibodies in real-time monitoring of simultaneously inoculated alcoholic-malolactic fermentation of Chardonnay. Letts Appl Microbiol **46**:38-42.

### **Farthing, JB, Rodriguez, SB, and Thornton, RJ (2007)**

Flow cytometric analysis of *Saccharomyces cerevisiae* populations in high sugar Chardonnay fermentations. J Sci Food Agric **87**:527 - 533

### **Chaney, DE, Rodriguez, SB, Fugelsang, KC and Thornton, RJ (2006)**

Managing high density commercial scale wine fermentations. J Appl Microbiol **100**:689-698.

### **Rodriguez, S., & Thornton, R. (2002).**

Microbiology. Encyclopedia of Food and Culture. New York: Scribner.

### **Harrod, CJ, Rodriguez, SB and Thornton, RJ (1997)**

Derepressed utilization of L-malic acid and succinic acid by mutants of *Pachysolen tannophilus*. J Industrial Microbiol Biotechnol **18**:379-383.

### **Thornton, RJ and Rodriguez, SB (1996)**

Deacidification of red and white wines by a mutant of *Schizosaccharomyces malidevorans* under commercial winemaking conditions. Food Microbiol **13**:475-582.

### **Mahoney, NE and Rodriguez, SB (1996)**

Aflatoxin variability in pistachios. Appl Environ Microbiol **62**:1197-1202.

### **Lubbers, MW, Rodriguez, SB, Honey, NK and Thornton, RJ (1996)**

Purification and characterization of urease from *Schizosaccharomyces pombe*. Canadian J Microbiol **42**:132-140.

### **Goodrich-Tanrikulu, M, Mahoney, NE and Rodriguez, SB (1995)**

The plant growth regulator methyl jasmonate inhibits aflatoxin production by *Aspergillus flavus*. Microbiol **141**:2831-2837.

### **Rodriguez, SB and Mahoney, NE (1994)**

Inhibition of aflatoxin production by surfactants. Appl Environ Microbiol **60**:106-110.

### **Rodriguez, SB and Thornton, RJ (1990)**

Factors influencing the utilization of L-malate by yeasts. FEMS Microbiol Letts **72**:17-22.

### **Rodriguez, SB, Amberg, E, Thornton, RJ and Mc Clellan, MR (1990)**

Malolactic fermentation in Chardonnay: growth and sensory effects of five commercial strains of *Leuconostoc oenos*. J Appl Bacteriol **68**:139-144.

### **Rodriguez, SB and Thornton, RJ (1989)**

A malic acid dependent mutant of *Schizosaccharomyces malidevorans*. Arch Microbiol **152**:564-566.

### **Tegmo-Larsson, I-M, Spittler, TD and Rodriguez, SB (1989)**



Effect of malolactic fermentation on ethyl carbamate formation in Chardonnay. *Am J Enol Vitic* **40**:106-108.

**Rodriguez, SB and Thornton, RJ (1988)**

Rapid utilization of malic acid by a mutant of *Schizosaccharomyces malidevorans*. In: Proceedings of the Second International Symposium for Cool Climate Viticulture and Oenology. Smart, RE, Thornton, RJ, Rodriguez, SB and Young, JE (eds). Auckland, New Zealand: pp 313-315.

**Rodriguez, SB, Amberg, E, Arnink, KJ, Thornton, RJ and McClellan, MR (1988)**

Complexity in Chardonnay wines: effects of malolactic fermentation and barrel fermentation. In: Proceedings of the Second International Symposium for Cool Climate Viticulture and Oenology. Smart, RE, Thornton, RJ, Rodriguez, SB and Young, JE (eds). Auckland, New Zealand: pp 287.

**Ravji, RG, Rodriguez, SB and Thornton, RJ (1988)**

Glycerol production by four common grape molds. *Am J Enol Vitic* **39**:71-76.

**Thornton, RJ and Rodriguez, SB (1988)**

Commercial scale deacidification of grape juice for wine making by *Schizosaccharomyces malidevorans* mutant 11. Proceedings of the New Zealand Society for Viticulture and Oenology ": Innovations in Viticulture and Oenology", McCallum, NK and Milne, JDG (eds). Auckland, New Zealand: pp 1-6.

**Rodriguez, SB (1987)**

System for identifying spoilage yeasts in packaged wine. *Am J Enol Vitic* **38**: 273-76.

**Thornton, RJ and Rodriguez, SB (1987)**

Genetics of wine microorganisms: potential and problems. In: Proceedings of the Sixth Australian Wine Industry Technical Conference, Lee, TH (ed). Adelaide, South Australia: pp 98-102.

**Rodriguez, SB (1985)**

Malolactic fermentation in New Zealand winemaking. *Te Kauwhata Research Station Oenological and Viticultural Bulletin* No. 46; pp 139-158.

**Rodriguez, SB and Ingraham, JL (1983)**

Location on the *Salmonella typhimurium* chromosome of the gene encoding nucleoside diphosphokinase (ndk). *J Bacteriol* **153**:1101-1103.

**Rodriguez, SB (1982)**

Genetic and physiological studies on nucleoside triphosphate synthesis in *Salmonella typhimurium*. PhD Dissertation, Department of Bacteriology, University of California, Davis.

## BOOKS

**Rodriguez, SB and Thornton, RJ. (eds) 2011.** 2nd International Wine Microbiology Symposium Proceedings, Tenaya Lodge, Yosemite, California State University, Fresno. March 29 - 30. 194 pages.

**Thornton, RJ, Rodriguez, SB, and Fugelsang, KC. (eds) 2006.** International Wine Microbiology Symposium Proceedings, Tenaya Lodge, Yosemite, California State University, Fresno.

**Smart, RE, Thornton, RJ, Rodriguez, SB and Young, JE (eds) 1988.** Proceedings of the Second International Symposium for Cool Climate Viticulture and Oenology. 11-15 January

1988, Auckland, New Zealand. New Zealand Society for Viticulture and Oenology, Auckland.

## **PATENTS**

### ***Rodriguez, SB and Thornton, RJ.***

Novel yeast for novel winemaking process and technique enabling identification and separation of the mutant yeast. Patent filed in New Zealand (No. 214177), Australia (No. 65087/86), USA (No. 928432), Canada (No. 522711), S. Africa (no.86/8614) and EEC countries (No. 86308778.9) in Nov. 1986. Patents also applied for in Japan and Chile (No. 876-88), 1989.

The U. S. Patent (No. 4830968) was granted May 16, 1989.

### ***Rodriguez, SB and Thornton, RJ.***

A second patent was filed in New Zealand, Japan and Chile and a CIP in the remaining countries for the use of this yeast in juice other than grape.

August 2014