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(中)	
關鍵字 (英)	passion fruit yeast must style nutrient potassium metabisulfite deacidification
摘要 (中)	<p>百香果的糖度約 16°Brix，然酸度過高，甚少直接食用，一般經稀釋製成飲料。市售百香果利口酒及蒸餾酒品質參差不齊，且有酒精味太強、沉澱、顏色灰黯不亮或添加香料等缺點。由於百香果實酸度太高，加上發酵後易生硫臭味，不易製成高品質的釀造酒。本研究的目的是在探討製程條件，以生產品質較佳的百香果釀造酒。原料為產自埔里的百香果汁，經果膠分解酵素作用後，分離出上、下層液及全液，分別稀釋調糖至酸度 0.7 g/100mL、糖度 22 °Brix，接種菌種 Fermivin 於 20 °C 下發酵，選出主要的發酵果膠形式。再進一步探討發酵酵母菌種（Lalvin V1116、Lalvin RA17、Fermivin、Danstil D）、發酵溫度（16、20、25 °C），以及營養劑與偏重亞硫酸鉀的添加量對品質的影響。此外，將部分百香果汁脫酸，以了解對風味的影響。結果顯示，以下層液的發酵速度最快，上層液最慢，然而上層液所釀製的酒較具有百香果的清香、苦味感略少，喜好程度較高。酵母菌種方面，Danstil D 在初始發酵速率較慢，且苦味程度較高。Lalvin RA17 的揮發性酸稍高、有刺激的酸味，且亦有苦味。因此選擇 Fermivin 與 Lalvin V1116 為較適合的酵母菌。發酵溫度以 Fermivin 於 20 °C 或 Lalvin V1116 於 25 °C 皆可產生風味較佳的百香果酒，苦味較少、口感醇厚。添加 200 ppm 以上營養劑 Fermaid K 可以提高果膠發酵速率，減少可滴定酸的量，感官品評的結果則以添加 200 ppm 為較佳。添加偏重亞硫酸鉀達 150 ppm，在發酵初期有抑制發酵的情形，然未添加者有雜味的情形產生，因此選擇 60~100 ppm 作為百香果酒的添加量。利用上述實驗的發酵條件，配合氫氧化鈣或碳酸鈣進行脫酸所釀製的百香果酒，可以改善百香果酒之揮發性酸過高、香氣不足以及酒體淡薄的問題，品評排序結果則以氫氧化鈣的喜好性較高。但以氫氧化鈣脫酸與未脫酸之百香果酒進行消費者品評，無論外觀、香氣、嚐味以及整體上皆無顯著差異。</p>
摘要 (英)	<p>The sugar content of passion fruit is determined about 16°Brix, but it is seldom consumed directly due to higher acidity. The quality of commercial passion fruit wine and distillate spirits are diverse, and some of them are characterized with stronger alcohol flavor, cloudiness, and somber or poor flavor. The high acidity and sulfur-containing compounds contribute to the organoleptic properties of passion fruit that cause difficulty to make good quality of table wine. The purpose of this study aimed to investigate parameters for processing good quality of passion fruit wine. Passion fruit juice from Puli was employed in this study, which was separated into three must styles (supernatant, sediment, juice). Each must was adjusted its acidity to 0.7 g/100 mL and sugar content to 22°Brix, following vinified with the <i>S. cerevisiae</i> Fermivin at 20 °C. The optimal must style was then selected for fermentation study. The effects of different yeast strains (Lalvin V1116, Lalvin RA17, Fermivin, Danstil D), fermentation temperature, the addition of nutrients and potassium metabisulfite were investigated. Besides, the impact of partial</p>

deacidification of passion fruit juice on the flavor of passion fruit wine was also evaluated. Results indicated that fermentation rate of sediment was the fastest, and supernatant the slowest among the three must styles. Wine made of supernatant brought out the refreshing aroma of passion fruit, less bitter, and more acceptable. Danstil D led to a slow starting fermentation rate, and had great bitterness. The use of Lalvin RA17 resulted in a great amount of volatile acidity, and bitter taste. Therefore, Fermivin and Lalvin V1116 were selected as the starter for subsequent studies. The passion fruit wines fermented with Fermivin at 20 °C and/or Lalvin V1116 at 25 °C were characterized with imparting refreshing fragrance of passion fruit, less bitter, and full-bodied of taste. Addition of nutrient up to 200 ppm increased the fermentation rate, and decreased the titratable acidity of wine. And the sensory evaluation on acceptance indicated that addition of 200 ppm elicited better flavor. Though, addition of 150 ppm potassium metabisulfite inhibited the fermentation starting, off-odor was found in wine products free of that. Therefore, the adequate addition of potassium metabisulfite in fermentation of passion fruit wine was 60~100 ppm. Conclusively, more aroma and better body of passion fruit wine was obtained by the process developed in this study using calcium hydroxide or calcium carbonate for deacidification. The results of sensory ranking test showed better acceptability from the deacidified wine using calcium hydroxide. However, the consequence of consumer test revealed no significant difference in appearance, aroma, taste, and overall acceptance between deacidified (calcium hydroxide) and undeacidified passion fruit wines.

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Zaragoza, 47-54 and 99-109. Amerine MA, Berg HW, Cruess WV. 1972. The Technology of wine making. 3rd ed. Connecticut:AVI. Amerine MA, Berg HW, Kunkee RE, Ough CS, Singleton VL, Webb AD. 1980. The Technology of wine making. 4th ed. Connecticut:AVI. Anc^on MC, Ayestar^on B, Corroza M, Garrido J, Gonz^olez A. 1996. Influence of prefermentation clarification on the higher alcohols contents of wines. Food Chem 55:241-249. Anuna MI, Akpapunam MA. 1995. Effect of temperature and time on the quality of pineapple wines obtained from must fermented with Raffia-Wine and Up-wine yeast strains. Discovery & Innovation. 7(2):143-149. Aragon P, Atienza J, Climent MD. 1988. Influence of clarification, yeast type, and fermentation temperature on the organic acid and higher alcohols of malvasia and muscatel wine. Am J Enol Vitic 49(2):211-219. Ayestar^on B, Anc^on C, Garc^oa A, Gonz^olez A, Garr^odo J. 1995. Influence of prefermentation clarification on nitrogenous contents of musts and wines. J Agric Food Chem 43:476-482. Ayestar^on B, Garr^odo J, Anc^on C. 1998. Relation between fatty acid content and its evolution during fermentation and utilization of free amino acids in vacuum-filtered viura must. J Agric Food Chem 46:42-48. Beelman RB, Gallander JF. 1979. Wine deacidification. Adv Food Res 25:1-53. Bely M, Rinaldi A, Dubourdiou D. 2003. Influence of assimilable nitrogen on volatile acidity production by *Saccharomyces cerevisiae* during high sugar fermentation. J Biosci Bioeng 96(6):507-512. Berg HW, Akiyoshi MA. 1962. Color behavior during fermentation and aging of wines. Am J Enol Vitic 13:126-132. Biale JB, Barcus DE. 1967. Respiratory patterns in tropical fruits of the Amazen Basin. Trop Sci 7(2):93-105. Bisson LF, Butzke CE. 2000. Diagnosis and rectification of stuck and sluggish fermentations. Am J Enol Vitic 51(2):168-177. Boulton RB, Singleton VL, Bisson LF, Kundee RE. 1996. Principles and practices of winemaking. New York: Chapman & Hall. Boyle FP, Shaw TN, Sherman GD. 1995. Efficient extraction, single- strength technique open up-wide uses for new passion fruit juice. Food Eng 94-95. Butzke CE. 1998. Survey of yeast assimilable nitrogen status in musts from California, Oregon and Washington. Research note. Am J Enol Vitic 49(2):109-142. Cabrera MJ, Moreno J, Ortega JM, Medina M. 1988. Formation of ethanol higher alcohols, esters, and terpenes by five yeast strains from Pedro Ximenez grapes in various degrees of ripeness. Am J Enol Vitic 39:283 - 287. Calle EV, Ruales J, Dornier M, Sandeaux J, Sandeaux R, Pourcelly G. 2002. Deacidification of the clarified passion fruit juice. Desalination 149:357-361. Casey GP and Ingledew WM. 1986. Ethanol tolerance in yeasts. Crit Rev Microbiol 13:219-290. Casimir DJ, Kefford JF, Whitfield FB. 1981. Technology and flavor chemistry of passion fruit juices and concentrates. Adv Food Res 27:243-295. Castellari L, Magrini A, Passarelli P, Zambonelli C. 1995. Effect of must fermentation temperature on minor products formed by cryo and non-cryotolerant *Saccharomyces cerevisiae* strains. Italian J Food Sci 7(2): 125-132. Chan HT, Chang TSK, Chenchin E. 1972. Nonvolatile acids of passion fruit juice. J Agric Food Chem 20(1):110-112. Chan HT, Kwok SCM. 1975. Identification and determination of sugars in some tropical fruit products. J Food Sci 40:419-420. Charoenchai C, Fleet GH, Henschke PA. 1998. Effect of temperature, pH, and sugar concentration on the growth rates and cell biomass of wine yeasts. Am J Enol Vitic

49(3):283-288. Chen CC, Kuo MC, Hwang LS, Wu JS, Wu CM. 1982. Headspace components of passion fruit juice. *J Agric Food Chem* 30(6):1211. Constanti M, Reguant C, Poblet M, Zamora F, Mas A, Guillamon J. 1998. Molecular analysis of yeast population dynamics: Effect of sulphur dioxide and inoculum on must fermentation. *Int J Food Microbiol* 41:169-175. Coote N, Kirsop HH. 1974. The content of some organic acids in beer and other fermented media. *J Inst Brew* 80:474-483. Cottrell THE, Mclellan MR. 1986. The effect of fermentation temperature on chemical and sensory characteristics of wines from seven white grapes *vitis-vinifera* cultivars grown in New-York state USA. *Am J Enol Vitic* 37(3):190-194. Couture R, Rouseff R. 1992. Debittering and deacidifying sour orange (*Citrus aurantium*) juice using neutral and anion exchange resins. *J Food Sci* 57(2):380-384. Dallas C, Laureano O. 1994. Effect of SO₂ on the extraction of individual anthocyanins and colored matter of three Portuguese grape varieties during winemaking. *Vitis* 41-47. Delfini C, Cervetti F. 1987. Presence in grape must of a factor that controls the production of acetic acid by yeasts. ?. Effects of winemaking procedures. *Vignevini* 12:55-60. Delfini C, Cervetti F. 1988. Experimental survey on the formation of great quantity of acetic acid during alcoholic fermentation. *Rev Oenol* 2:20-27. Delfini C, Conterno L, Giacosa D, Cocito C, Ravaglia S, Bardi L. 1992. Influence of clarification and suspended contact on the oxygen demand and long-chain fatty acid contents of free run, macerated and pressed grape musts, in relation to acetic acid production. *Vitic Enol Sci* 47:69-75. Delfini C, Costa A. 1993. Effects of the grape must lees and insoluble materials on the alcoholic fermentation rate and the production of acetic acid, pyruvic acid, and acetaldehyde. *Am J Enol Vitic* 44:86-92. Durkan A, Cousins J. 1995. *The Beverage Book*. London: Hodder and Stoughton. Engel KH, Tressl R. 1991. Identification of new sulfur-containing volatiles in yellow passion fruit (*passiflora edulis* f. *flavicarpa*). *J Agric Food Chem* 39:2249-2252. Fleet GH, Heard GMY. 1993. Growth during fermentation. In: Fleet GH, editor. *Wine microbiology and biotechnology*. Chur, Switzerland: Harwood Academic Publishers. p 77-194. Flores JH, Heatherbell DA. 1984. Optimizing enzyme and pre-press mash treatment for juice and colour extraction from strawberries. *Fluessiges Obst* 51(7):320-324 ; 327-328. Fundira M, Blom M, Pretorius S, Rensburg P. 2002. Selection of yeast starter culture strains for the production of marula fruit wines and distillates. *J Agric Food Chem* 50:1535-1542. Gao L, Girard B, Mazza G, Reynolds AG. 1997. Changes in anthocyanins and color characteristics of Pinot Noir wines during different vinification processes. *J Agric Food Chem* 45(6):2003-2008. Garcia MJ, Casp A, Aleixandre JL. 1994. The influence of the yeast strain and the fermentation temperature on the concentration of some volatile compounds. *Rivista-di-Viticultura-e-di-Enologia* 47(4):29-37. Gerald R. 1982. *Industrial microbiology*. 4th ed, Amber Laboratories. Girard B, Yuksel D, Cliff MA, Delaquis P, Reynolds AG. 2001. Vinification effects on the sensory, colour and GC profiles of Pinot Noir wines from British Columbia. *Food Res Int* 34(6):483-499. Groat M, Ough CS. 1978. Effects of insoluble solid added to clarified musts on fermentation rate, wine composition, and wine quality. *Am J Enol Vitic* 29:112-119. Guilloux-Benatier M

and Feuillat M. 1993. Effects of grape must clarification on alcoholic and malolactic fermentation. *J Int Sci Vigne Vin* 27:299-311 Harvey TC, Chang TSK, Chenchin E. 1972. Nonvolatile acids of passion fruit juice. *J Agric Food Chem* 20(1):110-112. Heatherbell DA. 1984. Fruit juice clarification and fining. *Confructa* 28:192-196. Henschke PA, Jiranek VY. 1993. Yeast-metabolism of nitrogen compounds. In: Fleet GH, editor. *Wine Microbiology and Biotechnology*. Chur, Switzerland: Harwood Academic Publishers. p 77-164. Hernandez-Orte P, Ibarz MJ, Cacho J, Ferreira V. 2005. Effect of the addition of ammonium and amino acids to musts of Airen variety on aromatic composition and sensory properties of the obtained wine. *Food Chem* 89:163-174. Herreo M, Cuesta I, Garcia LA, Diaz M. 1999. Change in organic acids during malolactic fermentation at different temperatures in yeast-fermented apple juice. *J Inst Brew* 105:191-195. Herreo M, Garcia LA, Diaz M. 2003. The effect of SO₂ on the production of ethanol, acetaldehyde, organic acids, and flavor volatiles during industrial cider fermentation. *J Agric Food Chem* 51:3455-3459. Hiu DN, Scheuer PJ. 1961. The volatile constituents of passion fruit juice. *J Food Sci* 28:557-563. Houtman AC and Du Plessis CS. 1986. Nutritional deficiencies of clarified white grape juices and their correction in relation to fermentation. *S Afr J Enol* 7:39-46. Jackson RS. 2000. Chemical constituents of grapes and wine. In: *Wine science: principles, practice, perception*. 2nd ed. California, U.S.A: Academic Press. Johnson RL, Chandler BV. 1982. Reduction of bitterness and acidity in grapefruit juice by adsorptive process. *J Sci Food Agric* 33:287-293. Johnson RL, Chandler BV. 1985. Ion exchange and adsorbent resins for removal of acids and bitter principles from citrus juices. *J Sci Food Agric* 36:480-484. Joshi VK, Bhutani VP, Sharma RC. 1990. The effect of dilution and addition of nitrogen source on chemical, mineral and sensory qualities of wild apricot wine. *Am J Enol Vitic* 41(3):229-231. Karagiannis S, Lanaridis P. 2000. The effect of various vinification parameters on the development of several volatile sulfur compounds in Greek white wines of the cultivars Batiki and Muscat of Hamburg. *Am J Enol Vitic* 50(3):334-342. Killian RE, Ough CS. 1979. Fermentation esters-formation and retention as affected by fermentation temperature. *Am J Enol Vitic* 30:301-305. Kluba RM, Mattick LR. 1978. Changes in nonvolatile acids and other chemical constituents of New York state grapes and wines during maturation and fermentation. *J Food Sci* 43:717-720. Kourkoutas Y, Kanellaki M, Koutinas AA, Tzia C. 2005. Effect of fermentation condition and immobilization supports on the wine making. *J Food Eng* 69:115-123. Kruger E, Bielig HJ. 1976. Betriebs- und Qualitätskontrolle in Brauerei und alkoholfreier Getr?nkeindustrie. In: Verlag Paul Parey. Germany: Berlin und Hamburg. p310. Kruger L, Pickerell ATW, Axcell B. 1992. The sensitivity of different brewing yeast strains to carbon dioxide inhibition: Fermentation and production of flavour-active volatile compounds. *J Inst Brew* 98:133-138. Kunkee RE. 1984. Selection and modification of yeasts and lactic acid bacteria for wine fermentation. *Food Microbiol* 1:315-322. Kwok SCM, Chan HT, Nakayama TOM, Brekke JE. 1974. Passion fruit starch and effect on juice viscosity. *J Food Sci* 39:413-433. Lafon-Lafourcade S, Geneix C, Ribreau-Gayon P. 1984. Inhibition of alcoholic fermentation of grape must by fatty acids produced by yeasts

and their elimination by yeasts ghosts. *Appl Environ Microbiol* 47:1246-1249.

Lafon-Lafourcade S. 1983. Wine and brandy. In: Rehm HJ, Reed G, editors. *Food and feed production with microorganism. Biotechnology*, vol. 5. Veriag Chemie, Weinheim. p 81-163.

Lamilanra O. 1997. Changes in organic acid composition during fermentation and aging of noble muscadine wine. *J Agric Food Chem* 45:935-937.

Large PJ. 1986. Degradation of organic nitrogen compounds by yeasts. *Yeast* 2:1-34.

Lea AGH, Piggott JR. 1995. *Fermented beverage production*. London: Blackie Academic and professional.

Lie S, Haukeli AD, Jacobsen T. 1974. Nitrogenous components in worts. In *European Brewery Convention, Wort Symposium, Monograph 1*, Zeist.

Liu JWR, Gallander JF, Wilker KL. 1987. Effect of juice clarification on the composition and quality of eastern US table wines. *Am J Enol Vitic* 38:147-150.

Liu SQ, Pilon G. 2000. An overview of formation and roles of acetaldehyde in winemaking with emphasis on microbiological implications. *Int J Food Sci Tech* 35:49-61.

Llaurad? J, Roz?s N, Constanti M, Mas A. 2005. Study of some *Saccharomyces cerevisiae* strains for winemaking after preadaption at low temperature. *J Agric Food Chem* 53:1003-1011.

Lubbers S, Voilley A, Charpentier C, Feuillat M. 1994. Influence of yeast walls on the behavior of aroma compounds in a model wine. *Am J Enol Vitic* 45:29-33.

L?ck H, Rudd S. 1972. Milk flavoured with natural fruit juice. *S Afr J Dairy Technol* 4(3):153.

Lue SJ, Chiang BH. 1989. Deacidification of passion fruit juice by ultrafiltration and ion-exchange processes. *J Food Sci Technol* 24:395-401.

Luh BS, Wang Z. 1984. Kiwifruit. *Adv Food Res* 29:279-307.

Main GL, Morris JR. 1991. Color of Riesling and Vidal wines as affected by bentonite, Cufex?, and sulfur dioxide juice treatments. *Am J Enol Vitic* 42:354-357.

Mateo JJ, Jimenez M, Pastor A, Huerta T. 2001. Yeast starter cultures wine fermentation and volatiles. *Food Res Int* 34:307-314.

Millan C, Ortega JM. 1988. Production of ethanol, acetaldehyde, and acetic acid in wine by various yeast races: role of alcohol and aldehyde dehydrogenase. *Am J Enol Vitic* 39:107-112.

Mollenhauer HP. 1954. The passion fruit. *Food Mfg* April 149.

Monk PR, Cowley PJ. 1984. Effect of nicotinic acid and sugar concentration of grape juice and temperature on accumulation of acetic acid yeast fermentation. *J Ferment Technol* 62:515-521.

Monteiro FF, Bission LF. 1992. Nitrogen supplementation of grape juice. ?. Effect on amino acid utilization during fermentation. *Am J Enol Vitic* 43(1):1-10.

Murray KE, Shipton J, Whitfield FB. 1973. The chemistry of food flavor. ?. Volatile constituents of passion fruit, *Passiflora edulis* Sims. *Aust J Chem* 25:1921-1933.

Nordstr?m K. 1964. Formation of ethyl volatile acidity in fermentation with brewer' s yeast. V. Effect of some vitamins and mineral nutrients. *J Inst Brew* 70:209-221.

Nykanen L. 1986. Formation and occurrence of flavor compounds in wine and distilled alcoholic beverages. *Am J Enol Vitic* 37(1):84-96.

Ough CS, Amerine MA. 1967. Studies with controlled fermentation. Effects of fermentation temperature on some volatile compounds in wine. *Am J Enol Vitic* 18:149-156.

Ough CS, Davenport M, Joseph K. 1989. Effects of certain vitamins on growth and fermentation rate of several commercial active dry wine yeasts. *Am J Enol Vitic* 40:208-213.

Ough CS. 1964. Fermentation rates of grape juice. 1. Effects of temperature and composition on white juice fermentation rates.

Am J Enol Vitic 15:167. Parliament TH. 1972. Some volatile constituents of passion fruit. J Agric Food Chem 20(5):1043-1045. Patel S, Shibamoto T. 2002. Effect of different strains of *Saccharomyces cerevisiae* on production of volatiles in Napa gamay wine and petite sirah wine. J Agric Food Chem 50:5649-5653. Patrizia R, Giovanna S, Luca T, Mario P. 1994. Acetaldehyde production in *Saccharomyces cerevisiae* wine yeast. FEMS Micro Letters 118(3):213-218. Perez-Coello MS, Briones Perez AI, Ubeda Iranzo JF, Martin Alvarez PJ. 1999. Characteristics of wines fermented with different *Saccharomyces cerevisiae* strains isolated from the La Mancha region. Food Microbiol 16(6):563-573. Picinelli A, Bakker J, Bridle P. 1994. Model wine solutions: Effect of sulphur dioxide on colour and composition during ageing. Vitis 63:31-35. Pruthi JS, Lal G. 1955. Studies on the nutritive value and utilization of purple passion fruits (*Passiflora edulis* Sims.). Indian J Hort 12(1):1-4. Pruthi JS, Lal G. 1958. Carotenoids in passion fruit juice. Food Res 23:505-510. Pruthi JS, Susheela R, Lal G. 1960. Anthocyanin pigment in passion fruit rind. Central Food Technological Research Institute, India. Pruthi JS. 1959. Chemistry and technology of passion fruit juice. Food Sci (India) 8:396-397. Pruthi JS. 1963. Physiology, chemistry and technology of passion fruit. Adv Food Res 12:203-282. Ramon-Portugal F, Seiller I, Taillandier P, Favarel JL, Nepveu F, Strehaiano P. 1999. Kinetics of production and consumption of organic acids during alcoholic fermentation by *Saccharomyces cerevisiae*. Food Technol Biotechnol 37:235-240. Rapp A and Mandery H. 1986. Wine aroma. Experientia 42:873-884. Reed G, Nagodawithana TW. 1988. Technology of yeast usage in winemaking. Am J Enol Vitic 39:83-90. Reynolds AG, Edwards CG, Cliff MA, Thorngate III JH, Marr JC. 2001. Evaluation of yeast strains during fermentation of Riesling and Chenin blanc musts. Am J Enol Vitic 52(4):336-334. Ribreau-Gayon P, Dubourdieu D, Donche B, Lonvaud A. 2000. Handbook of Enology. The Microbiology of wine and vinifications. vol. 1. West Sussex, England: Wiley. Romero C, Bakker J. 2000. Effect of storage temperature and pyruvate on kinetics of anthocyanin degradation, vitisin A derivative formation, and color characteristics of model solutions. J Agric Food Chem 48 (6):2135-2141. Rose AH. 1977. Scientific basis of alcoholic beverage production. In : Economic Microbiology. Vol. 1. London: Academic press. Santamaría MP, López R, Gutiérrez AR, Díez de Bethencourt CA, García-Escudero E. 1995. Incidence de la température de fermentation sur l'évolution des acides gras totaux. J Int Sci Vigne Vin 29:101-104. Schisler DO, Ruocco JJ, Mabee MS. 1982. Wort trub content and its effects on fermentation and beer flavor. J Am Soc Brew Chem 40:57-61. Schmitt R. 1988. Enzyme in the fruit juice industry. Confructa 32(8):138. Seale PE, Sherman GD. 1960. Commercial passion fruit processing in Hawaii Agric Expt Sta Circ 58:1-18. Shimazu Y, Watanabe M. 1981. Effects of yeast strains and environmental conditions on formation of organic acids in must during fermentation. J Ferment Technol 59:27-32. Siebert KJ, Blum PH, Wisk TJ, Stenroos LE, Anklam WJ. 1986. The effect of trub on fermentation. MBAA Tech Q 23:37-43. Simone G, Norscia P, Suzzi G, Romano P. 1995. Relationship between selected strains of *Saccharomyces cerevisiae* and must composition variability. Industrie-delle-Bevande 23(134):561-

564. Singleton VL, Ough CS. 1962. Complexity of flavor and blending of wines. *J Food Sci* 27: 189-196. Singleton VL, Sieberhagar HA, Wet p, Wyk Cj. 1975. Composition and sensory qualities of wines prepared from white grapes by fermentation with and without solid. *Am J Enol Vitic* 26(2):62-69. Soufleros EH, Pissa I, Petridis D, Lygerakis M, Mermelas K, Boukouvalas G, Tsimitakis E. 2001. Instrumental analysis of volatile and other compounds of Greek kiwi wine; sensory evaluation and optimization of its composition. *Food Chem* 75:487-500. Thomas KC, Hynes SH, Ingledeew WM. 1994. Effects of particulate materials and osmoprotectants on very-high-gravity ethanolic fermentation by *Saccharomyces cerevisiae*. *Appl Environ Microbiol* 60:1519-1524. Torija MJ, Beltran G, Novo M, Poblet M, Guillam?n JM, Mas A, Roz?s N. 2003. Effect of fermentation temperature and *Saccharomyces* species on the cell fatty acid composition and presence of volatile compounds in wine. *Int J Food Microbiol* 85:127-136. Torrea D, Fraile P, Garde T, Anc?n C. 2003. Production of volatile compounds in the fermentation of Chardonnay musts inoculated with two strains of *Saccharomyces cerevisiae* with different nitrogen demands. *Food Control* 14:565-571. Valadon LRC, Mummery RS. 1981. Effect of canning and storage on carotenoids (Vitamin A activity) and vitamin C in Spanish and Turkish oranges. *J Sci Food Agric* 32:737-743. Valero E, Moyano L, Millan MC, Medina M, Ortega JM. 2002. Higher alcohols and esters production by *Saccharomyces cerevisiae*. Influence of initial oxygenation of the grape must. *Food Chem* 78:57-61. Van Straten S and Maarse H. 1983. Volatile compounds in food: qualitative data. TNO: Div. Nutr Food Res. van Wyk CJ. 1978. The influence of juice clarification on composition and quality of wines. In proceeding of the international enology symposium, Auckland, New Zealand. Vannier A, Brun OX, Feinberg MH. 1999. Application of sensory analysis to champagne wine characteristic and discrimination. *Food Qual and Preference* 10:101-107. Vera E, Dornier M, Ruales J, Vaillant F, Reynes M. 2003a. Comparison between different ion exchange resins for the deacidification of passion fruit juice. *J Food Eng* 57:199-207. Vera E, Ruales J, Dornier M, Sandeaux J, Persin F, Pourcelly G, Vaillant F, Reynes M. 2003b. Comparison of different methods for deacidification of clarified passion fruit juice. *J Food Eng* 59:361-367. Wallker P, Woodbie M. 1982. The biosynthesis of fatty acid. In: Smitn JE, Berry DR, Kristionsen B, editors. *The filamentous fungi*. New York: Edward Arnold Publishers Ltd. Webster DR, Edwards CG, Spayd SE, Peterson JC, Seymour BJ. 1993. Influence of vineyard nitrogen fertilization on the concentration of monoterpenes, higher alcohols, and esters in aged Riesling wines. *Am J Enol Vitic* 44:275-284. Whitfield FB, Sugowdz G, Casimir DJ. 1977. The structures and stereochemistry of edulan ? and ? and the stereochemistry of the 2,5,5,8,d-tetramethyl-3,4,4a,5,6,7,8a,-octahydro-2H-1-benzo- pyrans. *Aust J Chem* 30:1073-1091. Whittaker DE. 1972. Passion fruit: Agronomy processing and marketing. *Trop Sci* 14(1):59-77. Willians AA, Rosser PR. 1981. Aroma enhancing effects of ethanol. *Chem Senses* 6(2):149-153. Willians JT, Ough CS, Berg HW. 1978. White wine composition and quality as influenced by method of must clarification. *Am J Enol Vitic* 29:92-96. Winter M, Furrer A, Willhalm B, Thommen W. 1976. Identification and synthesis of two new

	organic sulfur compounds from the yellow passionfruit (<i>passiflora edulis</i> f. <i>flavicarpa</i>). <i>Helv Chem Acta</i> 59:1613-1620. Winter M, Kloti R. 1972. The aroma of the yellow passion fruit. <i>Helv Chem Acta</i> 55(6):1916-1921. Zoecklein BW, Fugelsang KC, Gump BH, Nury FS. 1990. <i>Production wine analysis</i> . New York: AVI.
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