The American Journal of Enology and Viticulture (AJEV) publishes full-length research papers, literature reviews, technical briefs, and research notes on all subjects related to enology and viticulture.

Research papers are scientific communications that present a new principle, rigorously test an existing hypothesis, or otherwise provide important novel information to the scientific community. Descriptive studies that are hypothesis generating also fit into this category.

Literature reviews synthesize the hypotheses and results within the research area under review and critically compare the published literature.

Technical briefs provide important new information to technical members of the industry, but might not advance the forefront of science in viticulture or enology. Appropriate manuscripts may describe a new assay method, validate or improve upon an existing method, or provide a comparative analysis of the impact of use of different processing methods.

Research notes present data of value to the scientific community. One example would be an extensive compositional study or survey from a single region that would be valuable in a larger analysis of variation of composition in different wine-growing areas. Research notes are generally no longer than two to four pages. Important but negative results may also be presented in this format.

Sequential papers submitted together will most often be returned to the authors to be revised either as a single work or as separate papers, each of which can stand on its own.

The AJEV does not accept articles published in or submitted to other publications. Authorship of papers in the Journal is not limited to members of the American Society for Enology and Viticulture (ASEV); however, non-ASEV members are charged $40.00 per final printed page.

Review Process

The science editor assigns each manuscript received to an associate editor. Manuscripts then undergo a two-step review process. Associate editors and the managing editor screen the manuscript to determine whether it meets standards of scientific rigor and language. (Manuscripts that are largely descriptive, confirmatory, or only of regional significance that otherwise do not present any new information or novel insights will not be accepted.) If a manuscript passes this initial screening review, it is sent to two peer reviewers. (Research notes may receive one review.) Additional reviewers are consulted as necessary. Reviewers’ comments and the associate editor’s decision regarding acceptability of the manuscript will be forwarded to the corresponding author by the managing editor. This entire review process may take up to twelve weeks. Authors may be required to revise their manuscript before formal acceptance of the paper for publication.

Authors of submitted manuscripts may recommend three qualified reviewers who are not members of their institutions and who are not collaborators. Provide the name, institution, email and mailing addresses, fax and phone numbers, and area of expertise for each suggested reviewer. Such reviewers are contacted at the discretion of the associate editor.

The science editor, associate editors, and managing editor are responsible for judging the suitability of each manuscript for publication. The editors reserve the right to edit manuscripts to make them conform with the adopted style and/or to return them to the authors for revision.

Content of Manuscripts

All manuscripts submitted must be in English, following American-English standards of spelling and scientific notation (see the following list of abbreviations and consult The ACS Style Guide: A Manual for Authors and Editors [American Chemical Society, 1997] as a reference). Authors whose primary language is not English must have manuscripts proofread by an English-speaking expert before submittal. Prepare the content of manuscripts in the following order:

Title. The title (in upper- and lowercase type) must reflect the important aspects of the article as concisely as possible, in no more than 100 characters and spaces. Do not use both common and scientific names in the title. Titles may not be in the form of questions.

Authorship and byline. List the first and last names of all authors beneath the title. Authorship should be based only on substantial contributions to (1) the conception and design or analysis and interpretation of data and to (2) the drafting of the paper or major revision for important intellectual content; and (3) on final approval of the published paper. All authors must have agreed to submission of the paper and take public responsibility for defending its content, including acknowledgments and citations, and have agreed that the corresponding author act on their behalf on all matters pertaining to publication.
Authors’ professional titles and current addresses, corresponding author’s email and/or fax number, acknowledgments (see below), and submission date should be given in separate paragraphs below the byline.

Acknowledgments. Note the source(s) of funds used to conduct the research and where research was conducted, if applicable. Personal acknowledgments of assistance may be given in a second paragraph.

Abstract. For full research articles, include a one-paragraph abstract from 80 to no more than 250 words that states the hypothesis, intent, or purpose of the research, the theoretical or experimental plan used, key findings (without experimental details or data), and major conclusions. Do not cite references, figures, or tables. Limit abstracts for research notes to no more than 100 words.

Key words. Include a list of four key words for indexing.

Introduction. Include a background review of the experimental design of your study and the measurement techniques employed, citing salient literature. Conclude with the hypothesis involved and/or the purpose of the investigation and how it will address deficiencies in existing knowledge.

Materials and methods. Enough detail must be given so that others may repeat your work. Identify the number of repetitions of experimental treatments and the number of times individual experiments were duplicated. For standard methods, cite the corresponding literature; describe in adequate detail those procedures that have not been fully described in cited publications. List model number and sources (vendor, city, state, country) of equipment and media used. When appropriate, include statistical analysis. Specify conditions or variables whose control influences the experimental results (use of colored lights or glasses in sensory evaluation, for example). See also the sections Reporting Information and Reporting Sensory Evaluation in the following pages.

Results. Report the results of your study here; reserve your interpretation of the results for the discussion section. Present results concisely in the text and any accompanying tables (and figures, if necessary). Avoid extensive use of graphs; tables are often more effective. In short papers, the Results and Discussion sections may be combined.

Discussion. The purpose of this section is to interpret the results in relation to previous literature, to propose explanations for the results observed, and to discuss possible applications. Avoid speculation unsupported by the data obtained.

Conclusion. This final section should draw conclusions concerning the original problem/hypothesis and the information given in the study. Base conclusions on the information given in the study. Do not summarize the paper, repeat information given in the results and discussions sections, introduce new information, or cite additional sources.

Literature cited. Beginning in 2003, AJEV has revised its reference/literature cited format. We now use the author and date, rather than the numbered, system; samples are given below. Authors are responsible for the accuracy of all citations, which will be copyedited for format only.

The Literature Cited section should contain only published, relevant sources that are accessible through an information system. These sources include journal articles, books (and chapters in books), proceedings, bulletins, reports, published abstracts of papers presented at meetings, patents, theses, and dissertations. Do not include the following in the Literature Cited section: unpublished abstracts, unpublished data, personal communications, manuscripts in preparation or submitted for publication, letters, company publications, databases, and software used for analysis; these should be referred to in parentheses in the text (see examples below).

Arrange citations alphabetically by author(s) (letter by letter) and chronologically when there are multiple citations for the same first author. List authors by senior author (last name first, then initials) followed by additional authors (initials first) (e.g., Concord, L.V., J.M. Merlot, and N.Y. Pinot) and ending with a period. All authors of an article must be listed in the Literature Cited section. If a source has no author, list the sponsoring organization or publisher, such as “OIV” or “ASEV.” Do not use “Anonymous.”

The year of publication follows the author(s). Place a period after this date. If more than one work by the same author is cited, list the publications in chronological order; if the year is identical, insert lowercase letters (i.e., a, b, c) after the date according to the order each source is cited in the text. In the text of the paper, reference citations by author and date in parentheses.

The title follows the date. Lowercase all words except for the first word and proper nouns, and do not place quotation marks around the title. Do not abbreviate any part of the title. Retain italicized words (e.g., *Vitis vinifera*). Journal name follows the title. Spell out all journals with one-word names (such as Phytopathology). Next give the volume, followed by a colon and the page numbers of the article. (Issue numbers are only necessary when each issue within a volume begins with page 1; include the issue number in parentheses after the volume number.) Give full pagination, with no spaces (e.g., 53:2096-2103). The correct order of elements in sources other than journals is noted in the examples.

References listed in Literature Cited. Sources listed include all journal articles, books, chapters, published proceedings, theses, government/agency publications, published meeting abstracts, and patents, as well as in-press journal articles, books, and chapters. All sources in the Literature Cited section must be cited in the text.

Journal article (for online journals, place “[online]” after the journal title abbreviation):


In-text citation: (Spayd et al. 2002) [for three or more authors, use “et al.” following the senior author’s name in the text citation]

In-press article:


In-text citation: (Frivik and Ebeler 2003)
Tables and Figures

Tables. Information presented in a table must be self-explanatory and agree with the text. The table caption should summarize the information in the table without repeating the column headings. Each column must have a heading that names the variable being measured and indicates the unit of measure within parentheses [e.g., (mg/L) (%)]. Keep column headings brief. (Follow the list of abbreviations found at the end of the Guide to Authors.) Explain nonstandard abbreviations in footnotes. Designate footnotes with superscript lowercase letters beginning with * (1, 2). Use the same style for all tables.

If only a few values are presented, then place the information in the text rather than in a table. Data presented in tables should not be repeated in figures.

Cite tables in numeric order in the manuscript. In electronic files: Place tables in the same rtf file as the manuscript and literature citations. Do not submit tables in Excel format; use the standard table format in your word-processing program.

Figures. Submitted figures must be high quality and ready to be published. AJEV does not create or revise figures. Place each figure on a separate page and label each one with the appropriate figure number. Cite all figures in numeric order in the manuscript. Legends (captions) should describe the contents so that each illustration is understandable when considered apart from the text. All symbols and abbreviations must conform to AJEV standards.

For callouts (labels) within figures: the typeface (or "font") must be consistent for all figures and artwork within a paper. Use a sans serif typeface such as Helvetica or Arial; do not use bold type. Use upper- and lowercase lettering that is no less than 8 point type ("font size") at final reduced size. Figures should be either single or double column (3½ or 7¼ inches in width, respectively).

For line graphs, frame graphs and axis index marks to the vertical axis (y axis, or ordinate) and to the horizontal axis (x axis, or abscissa). Symbols are used to indicate data points. Use open circles for the first set of data and filled circles for the second; triangles, open and filled, are next; then squares, open and filled (○ △ ▲ ■). If a graph requires more than six symbols, consider presenting the data in two graphs. (Diamonds are the fourth set of symbols.) Keys to symbols should be set in a small, inset box in the line graph (or next to it); they should not be placed in the text of the legend/caption.

Special effects, such as 3-dimensional bar charts or graphs, are unacceptable as they are difficult to read. Report such information in a table, if necessary. When applying multiple shades of gray in a bar chart, differentiate the gray levels by at least 20%. Line weight in the artwork should be no less than .30 points. For prominent lines such as plot lines on graphs, the weight should be approximately 1 point.

Black and white illustrations are standard, but color may be considered by the managing editor. Color costs are borne by the author and run approximately $800.00. A cost quotation may be provided, and the author or an institutional officer must indicate acceptance of responsibility for the quoted rate in writing before processing of that figure will be started.

Submitting printed originals. A 1:1 reproduction is best to maintain maximum detail when printed (single column width is 3½ inches and double column is 7¼ inches); however, larger figures are acceptable if they are suitable for reduction without loss of detail or readability of text. Maximum page size for originals to be scanned is 8½ x 11 inches.
Photographs should be high-quality glossy prints cropped at right angles to show only essential details. Overlays may be used to indicate cropping. Insert a scale bar when necessary to indicate magnification.

To avoid damage in transit, do not paperclip figures together or to the manuscript. Place small figures in an envelope.

**Submitting electronic figure files.** We encourage authors to submit figures digitally. Provide figures on a PC-formatted disk. We accept the following media:

- 3.5-inch floppy disk
- Iomega Zip disk
- CD-ROM

Include high-quality printed copies that are identical to the artwork in the files. Discrepancies between printed copies and electronic files will delay publication.

**Accepted file formats.** The Journal supports the following applications and formats for Windows and will accept only TIFF or EPS files as listed.

For pictures/halftones:
- Adobe Photoshop, TIFF files
- CorelPhoto-Paint, TIFF files
For line art:
- Adobe Illustrator, EPS or TIFF files
- CorelDRAW, EPS or TIFF files

Do not send figures in PowerPoint.

Images should be saved and submitted in the size at which they will be printed. Crop, scale, rotate, and manipulate images during the scanning or imaging stage (i.e., in Adobe Photoshop) before submitting them to the Journal. Assemble multipanel figures (figures with parts labeled A, B, C, D, etc.) into one piece and supply as one file.

Internet graphics downloaded or saved from Web pages are not acceptable for printing. These graphics have very low-resolution images (usually 72 dpi) that are intended for screen display but are far below acceptable quality standards for print.

**Scanning figures.** When scanning images and placing them in programs like Illustrator or CorelDRAW to be manipulated, it is important to use the correct resolution or dpi (dots per inch, also referred to as pixels per inch or ppi). Use the following guide to set the proper resolution for the type of image you are scanning.

- Lineart (graphs, charts, diagrams): scan at 900 to 1200 dpi and save in bitmap/monochrome mode.
- Halftones (black and white pictures): scan at 300 dpi and save in grayscale mode.
- Combination halftones (black and white pictures with text and/or graphics added): scan at 600 dpi and save in grayscale mode.

If you have questions about preparing files, please email the publications coordinator at edward@asev.org.

**Reporting Information**

**Trade names.** The names of manufacturers or suppliers of special (not reagent grade) materials should be given (including city, state, and country). Trade names must be capitalized and followed by ® or ™. In experimentation, a chemical compound should be identified by its common name (if such name exists) or by the chemical name and structural formula.

**Nomenclature.** The binomial or trinomial (in italics) must be shown for plant, insects, and pathogens when first used in the abstract and in the text (for example, *Vitis vinifera*). Following citation in Materials and Methods, the generic name may be abbreviated to the initial, except when confusion could arise by reference to other genera with the same initial. A collection number or that of a comparable listing should identify algae and microorganisms referred to in the manuscript.

For varietal names, the AJEV conforms to spellings listed in the BATF Working List of US Wine Grape Varieties.

**Chemical identification.** Papers reporting on flavor constituents should conform to the recommendations made by the International Organization of the Flavor Industry [see J. Agric. Food Chem. 44:10 (1996)]. Any flavoring substance must have its identity confirmed by at least two methods. Otherwise, the identification should be labeled “tentative.” Authors should include at least semiquantitative data on the concentration of an identified component in the original source. Ranges such as <1 µg/L, 1 to 10 µg/L, 10 to 100 µg/L, rather than absolute amounts, are acceptable.

**Numerals.** Spell out all numbers or fractions that begin a sentence. Do not use a dash or hyphen to replace the preposition “to” between numerals (13 to 22 min, 3 to 10°C) within the text; however, a dash or hyphen may be used in tables and figures.

Write out numerals one through nine, except with units of measure. Write out and hyphenate simple fractions (for example, two-thirds). It is best to use decimals instead of fractions.

**Time and dates.** When reporting time, use the 24-hour time system with four digits; the first two for hours and the last two for minutes (for example, 0400 hr for 4:00 a.m., 1630 hr for 4:30 p.m.). Dates are reported as day of month, month, and year (9 April 2002).

**Units.** Units of measure are treated as collective nouns and take singular verbs (for example, “2.5 mL of bentonite was added to the sample”). Observe the following:

- **Wine volume:** report as liter (L) or milliliter (mL). Hectoliters are not recommended. Abbreviate liter as a capital L, not lowercase, to avoid confusion with the number 1.
- **Grape weights:** report as grams (g), kilograms (kg), and metric tons (t).
- **Temperature:** report as degrees Celsius (°C) only.
- **Parts per million (ppm) and parts per billion (ppb):** Not recommended. Use the equivalent milligrams per L (mg/L) and micrograms per liter (µg/L).
- **Wine or juice yield:** report as liters per 1000 kg (L/1000 kg) or milliliters per kilogram (mL/kg) (equivalent).
- **Land area:** report as hectares (one hectare = 2.47 acres).

**Statistical methods.** Authors must report enough details of their experimental design so that the results can be judged for
validity and so that previous experiments may serve as a basis for the design of future experiments.

Multiple comparison procedures such as Duncan’s multiple range test are frequently misused. Such misuse may result in incorrect scientific conclusions. Multiple range tests should be used only when the treatment structure is not well understood (for example, studies to compare cultivars). When treatments have a logical structure, significant differences among treatments should be shown using t- or F-tests.

Field experiments, such as studies on crop yield and yield components, that are sensitive to environmental interactions and in which the crop environment is not rigidly controlled or monitored, should be repeated (over time and/or space) to demonstrate that similar results can (or cannot) be obtained in another environmental regime. Perform replicate chemical or sensory evaluations to show reproducibility and consistency, respectively.

Abbreviations and symbols. See the accompanying list of abbreviations. Replacement of certain unwieldy chemical names by well-known abbreviations is acceptable (for example, ATP, DNA). Standard chemical symbols may be used without definition (Ca, NaOH). If the paper uses numerous abbreviations, define all in a single paragraph after the key definition (for example, ATP, DNA). Standard chemical symbols may be used without definition (Ca, NaOH). If the paper uses numerous abbreviations, define all in a single paragraph after the key words; use such abbreviations only if a term is used at least five times.

With the exception of those standard for international usage (for example, HPLC, ATP), do not use abbreviations in the title or abstract. The metric system is standard, and SI units should be used (other units may be placed in parenthesis after the SI). Symbols and abbreviations in figures and tables must also conform to guidelines.

Reporting Sensory Evaluation

As with other disciplines, manuscripts reporting sensory information should present some new principle, rigorously test an existing hypothesis, or otherwise provide important new information to the scientific community. In all cases, authors must clearly indicate exactly how the test was conducted, at what temperature the wines were stored, how much wine was poured in each glass, how many tests the panelists performed, and how many samples were served per session.

Panelists. Trained panelists or “expert” panelists may not be asked to indicate their liking or the acceptability of the sample(s). Only true consumer panelists can give this type of information. Consumer panelists usually should not be asked to score the intensities of specified sensory attributes. However, there may be isolated situations where this would be acceptable.

Discrimination testing. With discrimination testing (such as paired difference, duo-trio, triangle, two-out-of-five) the objective is to determine whether two samples are perceptibly different. In all cases, except the directional paired difference test, that is the only information the test provides.

The major issue with discrimination tests is ensuring that the test had enough power. (Power is defined as the probability of finding a difference that actually exists). Power is affected by several factors, but the one that the experimenter usually has control over is the number of panelists evaluating the samples.

If a discrimination test shows that two samples are perceived to be significantly different, then the test had enough power (regardless of the number of panelists).

If a discrimination test shows that two samples are not perceived to be significantly different, then the power issue becomes crucially important and the authors must then indicate the power associated with their test. (This is usually the issue when authors want to show that a new method or variation does not affect the sensory properties of the product—the power of such tests is low when the number of panelists is small.)

Using the directional paired difference test with wines can be problematic. The requirement for this test is that the two samples may only differ in a single sensory attribute: for example, a 1% salt-water solution is less salty than a 2% salt-water solution, but it does not differ in any other sensory modality. However, when real products are used this is often not true; for example, a wine with 2% residual sugar is perceived to be less sweet than one with 4% residual sugar, but the first wine may also be perceived to be sourer than the second. In such cases, the paired directional test should not be used.

Description analysis. When authors use the descriptive analysis techniques to evaluate their samples, there are three major issues:

First, unless the panel was trained by or in direct consultation with the Tragon Corp. (Palo Alto, CA), the technique used was not QDA (Quantitative Descriptive Analysis). QDA is a registered trademark of the above-mentioned company. The same is true for FPA (Flavor Profile Analysis), which is trademarked by A.D. Little Company (Boston, MA) and the SDA (Spectrum Descriptive Analysis) (Sensory Spectrum, East Hanover, NJ).

Second, usually authors use variations of the above techniques. They could refer to a variation of the QDA technique as the consensus training method and to variations of the FPA and SDA as ballot training methods. It is also possible to amalgamate the two methodologies as a combination training method.

Third, authors must give explicit information on the following: number of panelists; source of panelists; method of train-

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Example: Authors want to indicate that using a new fining agent produces a wine that is not perceptibly different from a wine fined with a more traditional agent.

Before starting the study, the authors determine that they want a power of 90% (a 90% chance of detecting a difference if it exists). This is analogous to a Type II error (beta) of 10%. In addition, the authors use the usual Type I error (alpha) of 5%; they want less than 10% of the population to discriminate between the samples. Given these assumptions, the authors determine that to perform a triangle test they would need at least 342 panelists. Using the same assumptions but a duo-trio test, authors would need 853 panelists.

After completing the study, the authors write a paper stating that they used alpha at 5%, a duo-trio test, and 50 panelists and found that the two fining agents did not significantly differ in how they affected the sensory quality of the wine. The reviewer determines that assuming that less than 25% of the population can detect a difference; the power of this test is about 55%. If the authors had performed a triangle test, then the power would have been 78%.
Content of Manuscripts

Organize printed manuscripts as stated above in the Content of Manuscripts section and as follows:

- Printed, double-spaced, on 8.5 x 11 inch (21.5 x 28 cm) paper (or on A4 paper with the margins set for US letter size paper).
- Number each page beginning with the title page, and number the lines on each page for ease of reference by reviewers.
- The text of the paper must be followed in order by literature cited, tables (one per page), figure legends/captions (grouped together), and figures (one per page). (See below for electronic format.)
- Send three printed copies of the entire manuscript, including figures, tables, and one copy of original (not photocopied) artwork.

Format of electronic files. The electronic file must match the printed manuscript exactly. Use a PC-formatted, high-density disk (or Zip disk or CD). We cannot accept files on Mac-formatted disks.

- Include the text of the paper, literature citations, tables, and figure legends in one (1) rich text format (.rtf) file. (Make sure tables are included in this file; do not submit tables as Excel files.)
- Place each figure in a separate TIFF or EPS file. See the section on Tables and Figures for guidelines on formatting graphics files.

Submission of Manuscripts

Mail three paper copies of your manuscript and a 3.5" high-density PC-formatted disk, CD, or zip disk to:
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American Journal of Enology and Viticulture
P.O. Box 2160
Davis, CA 95617-2160 USA

For packages sent by special courier services such as Federal Express, our street address is 1784 Picasso Ave, Suite D, Davis, CA 95616. All manuscripts received are acknowledged by email.

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Cover letter. Include a cover letter that contains the telephone and fax numbers and an email address of the corresponding author and that states the manuscript is not being submitted, in review, or otherwise considered for publication elsewhere.

Format of printed manuscripts.

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Corrections. Corrections are published, if necessary, in the number 4 issue of each volume. Authors should notify the managing editor of any necessary corrections.
Guide to Authors

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microequivalent µeq racemic (optical configuration, a mixture of dextro- and levo-) (preceding chemical name) (small caps) DL
microgram µg
microliter µL rate change of a process with $10^x$ increase $Q_{10}$
millilitre (micron) µL retardation factor (distance unknown factor has traveled relative to a solvent front in chromatography) $R_s$
millimole µmol revolutions per minute rpm
milliampere mA ribonucleic acid RNA
milliequivalent meq roentgen equivalent man rem
milligram mg second (angular) °
milliliter mL second (time) sec
millimeter mm secondary (preceding chemical name; (italic) sec-
millimole mmol significant at 0.05 level *
millivolt mV significant at 0.01 level **
minimum min. significant at 0.001 level ***
minute (angular) °
minute (time) min. sine sin
mitochondrial deoxyribonucleic acid mtDNA
molar (concentration) (italic) $M$
nicotinamide adenine dinucleotide
mole mol specific gravity sp gr
month mo specific heat sp ht
nano (x $10^{-9}$) n specific volume sp vol
nanometer nm square sq
Nephelos turbidity unit NTU
standard atmosphere atm
newton N standard deviation SD
NAD standard error SE
NADPH standard temperature and pressure STP
nicotinamide adenine dinucleotide, reduced
nicotinamide adenine dinucleotide phosphate (reduced)
NADPH substrate constant (see Michaelis) (italic) $K_m$
normal (concentration)
nt
not significant
nuclear magnetic resonance
number (in table headings) No.
not significant
newton
fractional part of a degree "
ounce (avoirdupois) oz
outside diameter o.d.
parentheses (preceding chemical name)
(italic) $p$
parts per billion µg/L
parts per million mg/L
pascal Pa
per /
percent %
per cent
peta (x $10^{15}$)
photon (x $10^{12}$)
polymerase chain reaction
post meridiem
pound (avoirdupois) lb
pounds per square inch lb/in²
probability (lowercase italic) $p$
robustness factor $R_{10}$
rotations per minute rpm
second (angular) °
second (time) sec
significant at 0.01 level **
significant at 0.001 level ***
sp. nov.
sp. nov.
sp. spp.
sp. spp.
sp. nov.
species nova (only after specific epithet)
standard atmosphere atm
standard deviation SD
standard error SE
standard temperature and pressure STP
substrate constant (see Michaelis) $K_m$
substrate (organism) $S$
substrate constant (see Michaelis) (italic) $K_m$
sine sin
specific gravity sp gr
tangential
(temporary) (italic) tert-
tendency
tertiary (preceding chemical name) (italic) tert-
that is (in tables and figure captions only) i.e.
that is (in tables and figure captions only) i.e.
thick layer chromatography TLC
thin layer chromatography TLC
transfer ribonucleic acid tRNA
ultrahigh frequency UHF
ultraviolet UV
varietas (variety; only after specific epithet) var.
versus (only in tables and figures; spell out in text) vs
volt V
voltage V
volume ratio (volume per volume) v/v
weight (organism) wt
weight per volume w/v
weight ratio (weight per weight) w/w
year yr
Author Index

Volumes 49, 50, 51, 52, 53

A


See F.M. Dewey. 51:276-282.
See J.F. Harbertson. 53:54-59.
Ageorges, A. See A.S. Renault. 51:81-87.
Agosin, E., A. Belancic, A. Ibacache, R. Baumes, E. Bordeu, A. Crawford, and C. Bayonove. Aromatic potential of certain Muscat grape varieties important for Pisco production in Chile. 51:404-408.
AJEV. Guide to authors. 52:60-65; 53:334-341.
Allain, P. See G.J. Martin. 50:409-417.
Alves, A. See F.G. Braga. 53:41-45.
See P. Herbert. 51:262-268.
See I. Mafra. 50:128-132.
See M. Ibern-Gómez. 51:29-36; 52:159-164; 53:218-221.
Antolín, I. See H. Baigorri. 52:357-363.
See M.V. McKenry. 52:304-309, 310-316.
Arfelli, G. See M. Castellari. 49:91-94.
Austin, K.T., and C.E. Butzke. Spectrophotometric assay for arginine in grape juice and must. 51:227-232.
Avalone, S. See P. Sarni-Manchado. 50:81-86.
B
Baptista, E. See S. Dequin. 50:45-50.
Barba, A. See S. Navarro. 52:35-40.
Barre, P. See S. Dequin. 50:45-50.
Barrios, M.L. See E. Soufleros. 49:266-278.
See P. Herbert. 51:262-268.
See I. Mafra. 50:128-132.
Basha, S.M. See H. Mazhar. 53:87-91.
Bauer, R. See H.A. Nel. 53:191-196.
Baumes, R. See E. Agosin. 51:404-408.
See E. Masson. 51:201-214.
Bayonove, C. See E. Agosin. 51:404-408.
Belancic, A. See E. Agosin. 51:404-408.
Bellavance, M.P. See A. Vernhet. 50:51-56.

Dicks, L.M.T. See H.A. Nel. 53:191-196.

Di Marzio, L. See L. Moio. 52:271-274.

Dittmer, T.W. See T.J. Zabadal. 53:204-209.


———. White wine protein analysis by capillary zone electrophoresis. 50:120-127.


Doco, T., N. Quellec, M. Moutounet, and P. Pellerin. Polysaccharide patterns during the aging of Carignan noir red wines. 50:28-32.

See S. Vidal. 51:115-121.


Donèche, B. See C. Cabanne. 52:331-335.


Droß, A. See A. Heier. 53:78-86.


———. Oenological practices on the selection of wild yeast strains in spontaneous fermentation. 50:219-224.


Dobó, A. See G. Vas. 49:100-104.

Doco, T., N. Quellec, M. Moutounet, and P. Pellerin. Polysaccharide patterns during the aging of Carignan noir red wines. 50:28-32.

See S. Vidal. 51:115-121.


Donèche, B. See C. Cabanne. 52:331-335.


Droß, A. See A. Heier. 53:78-86.


———. Oenological practices on the selection of wild yeast strains in spontaneous fermentation. 50:219-224.


Dobó, A. See G. Vas. 49:100-104.

Doco, T., N. Quellec, M. Moutounet, and P. Pellerin. Polysaccharide patterns during the aging of Carignan noir red wines. 50:28-32.

See S. Vidal. 51:115-121.


Donèche, B. See C. Cabanne. 52:331-335.


Droß, A. See A. Heier. 53:78-86.


———. Oenological practices on the selection of wild yeast strains in spontaneous fermentation. 50:219-224.


Dobó, A. See G. Vas. 49:100-104.

Doco, T., N. Quellec, M. Moutounet, and P. Pellerin. Polysaccharide patterns during the aging of Carignan noir red wines. 50:28-32.

See S. Vidal. 51:115-121.


Donèche, B. See C. Cabanne. 52:331-335.


Droß, A. See A. Heier. 53:78-86.


———. Oenological practices on the selection of wild yeast strains in spontaneous fermentation. 50:219-224.


Dobó, A. See G. Vas. 49:100-104.

Doco, T., N. Quellec, M. Moutounet, and P. Pellerin. Polysaccharide patterns during the aging of Carignan noir red wines. 50:28-32.

See S. Vidal. 51:115-121.


Donèche, B. See C. Cabanne. 52:331-335.

———, C. Andrés-Lacueva, R.M. Lamuela-Raventós, C. Lao-Luque, S. Buxaderas, and M.C. de la Torre-Boronat. Differences in phenolic profile between oak wood and stainless steel fermentation in white wines. 52:159-164.


See C. Andrés-Lacueva. 53:147-150.


Kennedy, J.A., M.A. Matthews, and A.L. Waterhouse. Effect of maturity and vine water status on grape skin and wine flavonoids. 53:268-274.

See J.F. Harbertson. 53:54-59.


King, M. See M. Cliff. 53:46-53.


Kliwer, W.M. See N. Kubota. 51:409-414.


Köteleky, K. See G. Vas. 49:100-104.


See H. Hoo. 53:289-293.


See A.S. Renault. 51:81-87.


Krueger, R. See K.J. Dell. 49:11-16.


Kovina, S. See T. Kandl. 50:155-161.


Lalleyon, A. See R. Marchal. 53:308-314.


See C. Andrés-Lacueva. 53:147-150.

See M. Ibern-Gómez. 51:29-36; 52:159-164; 53:218-221.

Lanaridis, P. See S. Karagiannis. 50:334-342.


See R.P. Smithyman. 52:364-375.


Lavigne, V. See M. Murat. 52:136-139.


Leclant, F. See A. Forneck. 52:28-34.

Ledebohr, R.L. See T.J. Zabadal. 53:204-209.


Letebvre, S. See C. Maury. 52:140-145.


Lepoutre, J.P. See T. Cabaroglu. 53:64-68.


Levite, D. See M. Adrian. 51:37-41.


Lin, H. See L. Kocsis. 50:101-106.


See M. Gómez-del-Campo. 53:138-143.

Lonvaud-Funel, A. See E. Coton. 49:199-204.


———, E. López-Tamames, S. Buxaderas, G. Suberbiola, and M.C. de la Torre-Boronat. Influence of wine polysaccharides of different molecular mass on wine foaming. 52:148-150.

López-Roca, J.M. See E. Gómez-Plaza. 52:266-270.

López-Tamames, E. See S. Francioli. 50:404-408.


See P.R. Mesquita. 52:324-330.


De Luis, II. See H. Baigorri. 52:357-363.

Luz Silva, M., and F.X. Malcata. Relationships between storage conditions of grape pomace and volatile composition of spirits obtained therefrom. 49:56-64.

Lyon, M.L. See A. Zimman. 53:93-98.

M

Machado, J.M. See N. Mateus. 52:115-121.

Mähaffee, W.F.  See T.W. Hall.  52:204-209.
See W.A. Buescher.  52:345-351.
Malcata, F.X.  See M. Luz Silva.  49:56-64.
Mangas, J.J.  See A. Picinelli.  51:144-149.
Manno, C.  See C.L. Pallmann.  52:198-203.
Marceau, J.P.  See C. Dartiguenave.  51:347-351, 374-378.
See C. Desportes.  52:376-380.
See G. Liger-Belair.  50:317-323.
Mauricostodos, A.  See R.T. Threlfall.  50:57-64.
Maury, C., P. Sarni-Manchado, S. Lefebvre, V. Cheynier, and M. Moutounet.  Influence of fining with different molecular weight gelatins on proanthocyanidin composition and perception of wines.  52:140-145.
Mazhar, H., S.M. Basha, and J. Lu.  Variation in berry protein composition of Muscadine cultivars.  53:87-91.
———. Interactions of selected Vitis cultivars with endoparasitic nematodes.  52:310-316.
See S.A. Anwar.  53:19-23.
McLean, H.  See A. Grimaldi.  51:357-364.
McMahon, H.M., B.W. Zoecklein, and Y.W. Jasinski.  The effects of pre-fermentation maceration temperature and percent alcohol (v/v) at press on the concentration of Cabernet Sauvignon grape glycosides and glycoside fractions.  50:385-390.
Mee, D.L.  See S.E. Spayd.  53:171-182.
Meier, J.  See A. Zimmer.  53:93-98.
See J.E. Bowers.  50:243-246.
See P. Hinrichsen.  52:396-399.
Mesquita, P.R., M.A. Piçarras, S. Lefebvre, V. Cheynier, and M. Glaize.  Tartaric stabilization of red, rosé and white wines with L(+)-calcium tartrate crystal seeding.  49:177-182.
Mills, D.A.  See L. Cocolin.  52:49-53.
Milkus, B.N.  Incidence of four NEV0 virus in Missouri vineyards.  52:56-57.
———, and R.N. Goodman.  A survey of Missouri vineyards for the presence of five grape viruses.  50:133-134.
See C.L. Pallmann.  52:198-203.
Minard, A.  See N. Martin.  53:61-63.
Minguez, S., and P. Hernández.  Tartaric stabilization of red, rosé, and white wines with L(+)-calcium tartrate crystal seeding.  49:177-182.
Mikota Gabler, F., and J.L. Smiljanick.  Postharvest control of table grape gray mold on detached berries with carbamate and bicipro-
See P.R. Mesquita. 52:324-330.

Moreno, S. See J.R. Vidal. 50:69-75.

Morris, J.R. See W.A. Buescher. 52:345-351.
See G. Main. 53:37-40.
See R.T. Thrrellf. 50:57-64.

Moselale, J.R., J.L. Puech, and F. Feuillat. The influence on wine flavor of the oak species and natural variation of heartwood components. 50:503-512.
See J.L. Puech. 50:469-478.

See T. Doco. 50:28-32.
See E. Masson. 51:201-214.
See C. Maury. 52:140-145.
See P. Sarni-Manchado. 50:81-86.
See S. Vidal. 51:115-121.


Muñoz, C. See P. Hinrichsen. 52:396-399.


Murru, G. See A. Cichelli. 51:108-114.


Narváez, C. See P. Hinrichsen. 52:396-399.

Navarro, G. See S. Navarro. 50:35-40.


Nikolaou, N. See N. Karagiannidis. 51:269-275.

See F.M. Dewey. 50:276-282.
See M.B. Frest. 53:275-284.

Noitsakis, B. See A. Patakas. 50:76-80.

Nurgel, C., and A. Canbas. Production of tartaric acid from pomace of some Anatolian grape cultivars. 49:95-99.

O


———, and K. Yokotsuka. Levels of glutathione and activities of related enzymes during ripening of Koshu and Cabernet Sauvignon grapes and during winemaking. 50:264-270.

Olineka, T.L. See C.L. Pallmann. 52:198-203.

Oliveira, M. Calculation of budbreak and flowering base temperatures for Vitis vinifera cv. Touriga Francesa in the Douro Region of Portugal. 49:74-78.


Omer, A.D. See L. Kočis. 50:101-106.
Ortiz, J.M. See J.R. Vidal. 50:69-75.

P Q

Pachova, V. See I. Achaerandio. 52:122-126.

Padgett-Johnson, M., L.E. Williams, and M.A. Walker. The influence of Vitis riparia rootstock on water relations and gas exchange of Vitis vinifera cv. Carignane scion under non-irrigated conditions. 51:137-143.


———, A. Cartechini, and F. Ferranti. Morpho-anatomical and physiological characteristics of primary and lateral shoot leaves of Cabernet Franc and Trebbiano Toscano grapevines under two irradiance regimes. 51:122-130.


Patakas, A. Changes in the solutes contributing to osmotic potential during leaf ontogeny in grapevine leaves. 51:223-226.

Pellerin, P. See T. Doco. 50:28-32.
See S. Francioli. 50:456-460.
See S. Vidal. 51:115-121.

Peña, C. See A. Guitart. 50:253-258.


Pérez-Jiménez, J.E. See M.C. Martínez. 51:365-373.

Wittkowski, R. See A. Heier. 53:78-86.
   See L. Vasudevan. 49:429-439.
Wolfardt, G.M. See H.A. Nel. 53:191-196.
Wool, K.V. See J.A. Sugui. 50:199-203.
   Yang, W. See L.E. Williams. 51:49-54.
   Yang, Z. See J.A. Sugui. 50:199-203.
   Yokotsuka, K., A. Nagao, K. Nakazawa, and M. Sato. Changes in anthocyanins in berry skins of Merlot and Cabernet Sauvignon grapes grown in two soils modified with limestone or oyster shell versus a native soil over two years. 50:1-12.
   ———, and V.L. Singleton. Effects of seed tannins on enzymatic de-colorization of wine pigments in the presence of oxidizable phenols. 52:93-100.
   ———, and M. Fukui. Changes in nitrogen compounds in berries of six grape cultivars during ripening over two years. 53:69-77.
   See T. Okuda. 50:264-270; 50:137-143.
   See T. Takayanagi. 50:65-68; 52:41-44.
   See M. Yajima. 52:210-218.
Yuksel, D. See M. Cliff. 53:46-53.
Yvon, M. See A. Forneck. 52:28-34.
Zironi, R. See E. Peterlunger. 53:14-18.
Zoccolan, E. See E. Celotti. 50:343-350.
   See B.H. Gump. 53:325-329.
   See H.M. McMahon. 50:385-390.
Subject Index

Volumes 49, 50, 51, 52, 53

A
Abscisic acid. training system. 52:357-363.
  xylem sap. 51:329-339.
Acetylaldehyde. in sherry wines. 51:15-21.
Acetic acid. stuck fermentation. 50:204-210.
  wine spoilage. 53:318-321.
Acid(s). See also specific acids.
  organic. determination by capillary electrophoresis. 50:154-161.
Acidification of must by genetically engineered yeast to produce lactic acid bacteria. 50:45-50.
  copigmentation. 50:211-218.
  low-alcohol wines. 50:299-306.
  phenolic compounds. 50:33-39.
  polysaccharide patterns. 50:25-32.
  reduced-alcohol wines. 50:299-306.
  sparkling wine. 50:404-408; 51:29-36.
  volatile compounds in hydroalcoholic extracts from oak. 50:162-165.
  with yeast. 50:404-408.
Agro bacterium. genetic transformation. 53:183-190.
Air.
Bagaceira. 49:56-94.
Bacteriocin. effect on Oenococcus oeni. 53:191-196.
BAC. end sequencing. 52:287-291.
  library. 52:287-291.
Bacillus. 52:227-232.
  resveratrol. 51:37-41.
  ß-galactosidase. 51:362-369.
  ß-galactosidase. 51:362-369.
  headspace analysis. 51:379-382.
  hydrogen sulfide. 50:334-342.
  malolactic cultures. effects on Chancellor. 51:42-48.
  M é thode Champeno ise process effect on. 49:289-294.
  Oenococcus oeni. 51:362-369.
  potential of Muscat grapes for Pisco production. 51:404-408.
  precursors. 51:404-408.
  sparkling wine. 50:404-408.
  Angiotensin I converting enzyme (ACE). 50:65-68.
  Anthocyanin(s). analysis. by HPLC. 53:218-221.
  berry skins. 50:1-12.
  copigmentation relative to aging. 50:211-218.
  determination by electrospray ionization. 51:55-64.
  differences among planting sites. 50:277-284.
  irrigation cut-off time effects on. 49:152-162.
  review of copigmentation. 52:67-87.
  skin fermentation time effects on. 49:152-162.
  soil nutrient effects on in berry skins. 50:1-12.
  standard red wine. 50:91-100.
Antibodies. wine protein analyses. 51:22-28.
Antioxidant(s). from grape seed extract. 51:383-389.
Arabinogalactan(s). 50:25-32, 51-56; 51:115-121.
Arbuscular mycorrhizae. 51:269-275.
Arginine. 51:227-232.
Armillaria mellea. root. 53:197-203.
Aroma, wine. See also Sensory characteristics of wine.
  amino acid content of must and wine relationship to. 50:253-258.
  analysis by HS-SPME of sparkling wine. 50:404-408.
  compounds. influence of fermentation temperature. 52:235-240.
  in Pisco. 51:404-408.
  in sherry wines. 49:240-250.
  enhancement. 50:231-235.
  headspace analysis. 51:379-382.
  hydrogen sulfide. 50:334-342.
  malolactic cultures. effects on Chancellor. 51:42-48.
  Mé thode Champeno ise process effect on. 49:289-294.
  Oenococcus oeni. 51:362-369.
  potential of Muscat grapes for Pisco production. 51:404-408.
  precursors. 51:404-408.
  sparkling wine. 50:404-408.
  Aspergillus niger. 51:276-282.
  resveratrol. 51:37-41.
  Autochthonous grapevine cultivars. 51:370-378.
  Autolysis. 51:65-72.
  Authors guide. 52:60-65; 53:334-341.
  Barrels. See also Aging.
  lignin fractions. 49:49-55.
  phenolic extraction kinetics. 50:33-39.
  toasting. intensities. 50:479-494.
Bentenite. adsorption of protein. 52:122-126.

effect on yeast. 53:28-36.

method of addition, effect of. 52:275-279.

Berry, grape. See also Grape(s); Table grapes.

composition. climate effects on. 51:249-261.

irrigation effects on. 50:418-434.

leaf canopy structure effects on. 51:390-396.

minimal pruning effect on. 52:45-48.

development. girdling effects on. 51:49-54.

effect of limiting leaf area on. 49:251-258.

gibberellin content. 51:315-318.

growth. 52:317-323.

methoxyypyrazine concentration. 50:194-198.

ripening. 52:331-335.

nitrogen. 53:69-77.

tannin. 53:54-59.


skins. anthocyanins. 50:1-12.

temperature. 51:182-188.


Buffering capacity of tartaric and malic acids. 51:347-351, 352-356.

Budbreak. calculation of. 49:74-78.

control. 51:409-414.

Budrot. See Botrytis cinerea.

Bunch stem necrosis. 51:319-328.

Burgundy wines, barrel-aging. 50:513-218.

Cabernet Franc. DNA typing. 52:396-399.

Cabernet Sauvignon grapevines. See also Grapevine(s).

glutathione. 50:264-270.

irrigation effects on color, anthocyanins, phenols. 49:152-162.

leaf area effect on berries. 49:251-258.

2-methoxy-3-isobutylpyrazine. 53:1-5.

nitrogen fertilization. 50:351-358.

Cabernet Sauvignon wine. catechin and epicatechin concentrations. 49:23-34.

glycosides. 50:385-390.

irrigation effects on color, anthocyanins, phenols. 49:152-162.

2-methoxy-3-isobutylpyrazine. 53:1-5.

skin contact time. effects on color, anthocyanins, phenols. 49:152-162.


Calcium. berry. 52:331-335.

budbreak control. 51:409-414.

tartrate. seeding. 49:177-182.

Canary Island wines. descriptive analysis. 49:440-444.

Canopy management. See also Grapevine, Trellising.

artificial shading effects on bud necrosis. 49:429-439.

chamber-free method for heating and cooling clusters. 51:182-188.

Chancellor. 52:45-48.

cluster zone leaf removal. 51:390-396.

density. nitrogen fertilization effects on. 50:351-358.


lateral shoot length. 51:390-396.

Merlot berries. 53:171-182.

morphology. 49:183-190.


shading effects. on bud necrosis. 49:429-439.

shoot tipping. 51:390-396.

Capillary electrophoresis. organic acid determination. 50:154-161.

wine protein analysis. 50:120-127.

Carbon partitioning. 49:183-190.

Carmenère. DNA typing. 52:396-399.


quantification by ELISA. 51:276-282.

Cell wall. porosity and macromolecule excretion of S. cerevisiae. 50:219-224.

Cellulase from Muscadine grapes. 50:19-24.


dimethylsulfide formation. 52:54-55.

protective effect of composite cork on pollution with trichloroanisole. 52:280-281.

taste intensity. 53:6-13.


Chardonnay grapevines. effect of fruit zone leaf removal on total
glycosides. 50:385-390.


β-1,3-glucanase gene expression in infected leaves. 51:81-87.

influence on polysaccharide composition of must and base wine. 50:456-460.

calcium. berry. 52:331-335.

Calcium. berry. 52:331-335.

Calcium. berry. 52:331-335.

Calcium. berry. 52:331-335.

Calcium. berry. 52:331-335.

Calcium. berry. 52:331-335.
Cluster, heating and cooling. 51:182-188.
  thinning, anthocyanin composition. 53:224-226.
  effects on fruit set and botrytis. 49:163-170.
  leaf canopy structure effects on. 51:390-396.

Collaborative testing. 50:461-465.

Cold hardness. chlorophyll fluorescence technique. 53:210-217.
  Concord. 53:227-230.

Cold soaks. effects of glucosides. 50:385-390.

Cold stabilization. 50:391-397, 398-403.

Colloids. inhibitory effect on tartaric precipitation. 50:343-350.

Color. See also Anthocyanin, Browning, Wine.


Cooperage. 50:447-455, 469-478, 479-494, 503-512, 513-518, 519-526;
  51:357-361.

Cork(s). phenolic compounds. 49:6-10; 50:285-290.

Copper chelate regenerable carrier for removal of phenols from must.

Copper content in wine. 50:259-263.

Continuous fermentation. yeas population. 53:24-27.

Cooperage. 50:447-455, 469-478, 479-494, 503-512, 513-218, 519-526;
  51:201-214.
  ellagittannins in kiln-dried oak. 51:201-214.
  lignin fractions. 49:49-55.
  variations in volatile oak extractives. 49:79-85.

Copigmentation. in model wine solutions. 50:211-218.
  red wine color, review of. 52:67-87.

Copper content in wine. 51:131-136.
  copper chelate regenerable carrier for removal of phenols from must.
  51:357-361.

Cork(s). phenolic compounds. 49:6-10; 50:285-290.
  processing of cork slabs. 49:6-10.
  trichloroanisole. 52:280-281.

Cover crops. 52:292-303.

Crop control. thinning. 53:204-209.

Crop level. canopy management effects on. 49:163-170.

Cyanamides. effects on budbreak. 51:409-414.

Cytosterol. grape. 50:199-203.

Cyclic voltammetry. phenolics. 53:294-302.

Cysteamine derivatization. 50:324-333.

Cysteinylation precursors. liberation by yeast. 52:136-139.

Dakulosphaira vitifoliae. See Phylloxera.

Debaryomyces hansenii. isolation and properties. 50:231-235.

Deacidification of high malate must with Schizosaccharomyces pombe.
  49:408-412.

Decision tree analysis. determination of processing parameters. 52:175-
  184.

Defoaming agent. 51:415-417.

Delphinidin. grape. 50:199-203.


Descriptive sensory analysis. See also Sensory characteristics of wines.

Canary Island wines. 49:440-444.
  low-alcohol wines. 50:307-316.
  Méthode Champenoise process effect on aroma. 49:289-294.
  reduced-alcohol wines. 50:307-316.

Dessèchement de la rafle. 51:319-328.

Dietary fiber. grape pomace potential as a food ingredient. 48:328-332;
  49:135-141.

Differential pH meter. determination of sugar. 52:271-274.

Dimethylosulfide. formation in Champagne wines. 52:54-55.


Disease, grapevine. See also specific disease.
  Botrytis cinerea. 49:11-16.
  leafroll. effects on physiology and must. 50:40-44.
  powdery mildew. Stylet-Oil. 49:11-16.

Distilled beverages. volatile responses to processing. 49:56-94.
  marc distillates. 49:56-94.
  Pisco. 51:404-408.

DNA fingerprinting. marker analysis. 50:236-242.

Dry matter partitioning. of Concord grapevines. 49:183-190.

Drying varieties. ripening characteristics. 49:375-382.

Effervescence. in champagne. 50:317-323;
  53:151-153.

Elastic adjustment of leaf tissue. 50:76-80.

Electrode. carbon paste. 52:381-385.

Electrothermal atomization-atomic absorption spectrometry for deter-
  mination of manganese content. 51:103-107.


Effervescent. in champagne. 50:317-323;
  53:151-153.

Effervescent. in champagne. 50:317-323;
  53:151-153.

Effervescent. in champagne. 50:317-323;
  53:151-153.

Effervescence. in champagne. 50:317-323;
  53:151-153.

Effervescent. in champagne. 50:317-323;
  53:151-153.

Effervescent. in champagne. 50:317-323;
  53:151-153.

Effervescent. in champagne. 50:317-323;
  53:151-153.
Fermentation, cont.
sluggish acetate effects on. 50:107-119, 204-210.
lactic acid bacteria/yeast effects on. 51:168-177.

yeast nitrogen demands. 51:168-177, 215-222.
starter cultures. 51:42-48.
stationary phase. 51:215-222.
52:345-351.
Stylet-Oil effects on. 49:11-16.
thermotolerant S. cerevisiae. 49:319-324.
volatile sulfur compounds. 50:334-342; 51:91-97.

Fertilization. nitrogen. effect on bunch stem necrosis. 51:319-328.
effect on Cabernet Sauvignon. 50:351-358.
desséchement de la rafle. 51:319-328.
on trickle-irrigated vines. 49:191-198.
Filtration. measurement of wine filterability. 50:191-197.
poly saccharide effects on organic microfiltration membrane, 50:51-56.
Fingerprinting wine proteins. 49:231-239.

Gas chromatography. See Chromatography.

Garlic paste for budbreak control. preparations for control of budbreak. 51:409-414.

Grapevine(s). See also specific cultivar.
Aspergillus niger. quantification by ELISA. 51:276-282.
assimilate supply. 49:251-258.
autochthonous grapevine cultivars. 51:370-378.
balance. a review. 52:165-174.
Autochthonous grapevine cultivars. 51:370-378.
bud necrosis. 49:429-439.
bunch stem necrosis. 51:319-328.
cadmium uptake. 51:269-275.

produced by Debaryomyces hansenii. 50:235-239.

Gluathione. and related enzymes in ripening of Koshu and Cabernet Sauvignon. 50:264-270.
formation during fermentation of white musts. 51:91-97.
Glycosides. analysis of. 53:315-317.
fruit zone leaf thinning effect on. 49:35-43, 259-265.
maceration temperature and alcohol effects on. 50:385-390.

GMD.See also: Microorganisms, Yeasts, Bacteria.

maturity. effect on methoxypyrazine concentration. 50:194-198.
polyphenol. 53:268-274.
methoxypyrazine concentration. 50:194-198.
pomace. tartaric acid production. 49:95-99.
raisin. 49:375-382.
ripening. amino acids in Temperanillo during. 50:144-154.
seedlessness inheritance. 50:302-305.
seeds. oligomeric proanthocyanidins in extracts. 51:383-389.
skins. anthocyanin content. 51:55-64.
BAC library. 52:287-291.
bunch rot. quantification by ELISA. 51:276-282.
composition. climate effects on. 51:249-261.
irrigation effects on. 50:418-434.
leaf area effect on berry development and composition. 49:251-258.
skins. anthocyanin content. 50:1-12.
flavonoid compositional differences among planting sites. 50:277-284.

Grapevine(s). See also specific cultivar.
autochthonous grapevine cultivars. 51:370-378.
base temperature for budbreak. 49:74-78.
budbreak. calculation. 52:251-258.
control. 51:409-414.
bud necrosis. 49:429-439.
bunch stem necrosis. 51:319-328.
cadmium uptake. 51:269-275.

β-1,3-Glucanase gene expression in grapevine leaves. 51:81-87.

Girdling. effects on fruit set and vegetative growth. 49:359-366.
Grapevine, cont.

canopy management. artificial shading effects on bud necrosis. 49:429-439.
effects on crop level. 49:163-170.
morphology. 49:183-190.
nitrogen fertilization effect on density. 50:351-358.
carbohydrate. accumulation. 51:49-54.
carbon partitioning. 49:183-190.
carotenoïds. 51:122-130.
chemotaxonomy of leaves. 49:86-90.
relationship to irradiance regime. 51:122-130.
cluster, heating and cooling. 51:182-188.
thinning. influence on fruit development. 49:163-170.
vine performance. 51:390-396.
complex hybrid combinations. 49:302-305.
denitrogenization. 49:191-198.
dessèchement de la rafle. 51:319-328.
disease. See Disease, specific disease.
growth of drying varieties. 49:375-382.
fruit zone leaf removal. effects on fruit set. 49:359-366.
effect on total glycoconjugates and conjugate fraction concentration. 49:259-265.
garlic preparations for control of budbreak. 51:409-414.
shade. See Canopy management.
shanking. 51:319-328.
shoot(s). powdery mildew infection. 51:1-6.
soluble solids. mechanical pruning effects. 50:87-90.
soluble solids. mechanical pruning effects. 50:87-90.
source-sink relationships. 49:183-190, 251-258; 51:49-54.
Stiellähme. 51:319-328.
stomatal. density. 51:122-130. sugar(s). accumulation during ripening. 51:340-346.
mechanical pruning effects on production. 50:87-90.
variety. identification by DNA fingerprinting. 50:236-242, 243-246.
virus. incidence in Missouri vineyards. 52:56-57.
water relations. effects on composition of maturing berries. 50:418-434.

nutrient. accumulation. 51:269-275.
osmotic potential. 50:76-80; 51:223-226; 340-346.
palo nago. 51:319-328.
Penicillium. quantification by ELISA. 51:276-282.
phenology. 49:74-78; 51:249-261.
pollination. 49:1-5.
powdery mildew. 51:1-6.
pruning. effects on crop yield and berry composition. 49:163-170.
effects on fruit set and botrytis. 49:163-170.
total glycoconjugates. 51:269-275.
plant hormones. 49:199-204.

Haze. wine. 50:120-127.
Headspace solid-phase microextraction analysis of headspace compounds. 49:100-104; 51:379-382.
Health. antioxidant activity of grape seed extract. 51:379-382.
manganese content of grapes and wines from France. 51:103-107.
tannins. 50:469-478.

Heavy metal toxicity in vines. 51:269-275.
Hexose transport capacity. 50:107-119.
High malate must deacidification with Schizosaccharomyces pombe. 49:408-412.

High-performance liquid chromatography. See Chromatography.
Histamine-producing lactic acid bacteria in wine. 49:199-204.
Histone(s). electrophoretic heterogeneity. 50:13-18.
Historical databases. decision tree analysis. 52:175-184.
Horticultural oil. wine grapes, effects on. 53:116-124.
HPLC. See Chromatography.
Hydroalcoholic extracts from oak. 50:162-165.
Hydrogen cyanamides. preparations for budbreak control. 51:409-414.
Hydrophilic organic microfiltration membrane. 50:51-56.
Ice wine. sensory analysis. 53:46-53.
Identification. of grapevine rootstocks. with simple sequence repeat (SSR) DNA markers. 49:403-407.
of pesticide residues in wine. 50:435-442.
Immoblized yeast. volatile compound formation. 52:264-270.
Indion of polyphenol oxidase. 50:137-143.
Immobilized alcohol dehydrogenase. 50:259-263.
Immobilized yeast. volatile compound formation. 52:210-218.
Immunoblotting. wine protein characterization. 51:22-28.
Irradiance regimes. 51:122-130.
Irrigation. effects on composition of maturing berries. 50:418-434.
effects of preveraison cup-off on wine. 49:152-162.
nitrogen fertilization with drip. 49:191-198.
Isotopic ratios to characterize geographic origin of Bordeaux wines. 50:409-417.
Isotopic ratios to characterize geographic origin of Bordeaux wines. 50:409-417.
Isozymes. characterization of Albillo accessions. 52:127-135.
Juice. grape. arginine. 51:227-232.
  Botrytis cinerea effect on pectolytic composition. 50:456-460.
  composition. 50:291-298.
  concentrate. 52:345-351.
  Debaryomyces Hansenii application in processing. 50:231-235.
  ethyl carbamate. 51:227-232.
  organic acid determination. 50:154-161.
  polyphenol oxidase. 50:137-143.
K
Killer yeasts. 51:65-72.
Kiln-drying of oak. 51:201-214.
Koshu grapevines. glutathione. 50:264-270.
Laboratory methods and proficiency. 50:461-465.
Lactic acid bacteria. histamine production. 49:199-204.
Lactobacillus casei. 50:45-50.
Lead uptake in vines. 51:269-275.
Leaf. grapevine. area. canopy configuration effects on. 48:482-491.
effect on berry development and composition. 49:251-258.
mechanical pruning effects. 50:87-90.
cell wall elasticity. 48:352-356.
effect on glycosides. 49:35-43.
effects on vegetative growth. 49:359-366.
Leafroll virus. effects on physiology and must. 50:40-44.
latent infection and fruit quality. 50:254-259.
Light. exposure. effect in berry methoxyppyrazine. 50:194-198.
Linear discriminant analysis of wine. 51:108-114.
Listan blanco wine. descriptive analysis. 49:440-444.
Lysozyme analysis. 53:154-157.
M
phenolic compounds and color stability, effect on. 52:266-270.
photons, effect on. 53:39-98.
temperature, effects on glycosides. 50:385-390.
MALDI. See Matrix-assisted laser desorption ionization mass spectrometry.
Malic acid. buffering of model wine solutions. 51:347-351, 352-356.
inhibitory effect of copper and dichlofluanid. 52:223-229.
Malvasia. microsatellite analysis. 53:125-130.
Malvidin. grape. 50:199-203.
Manganese content of grapes and wines. 51:103-107, 131-136.
Mannoproteins. filterability of wine. 50:137-143.
Mara. patterns during red wine aging. 50:25-32.
production in juice and must. 49:325-332.
Marc distillates. 49:56-94.
Matrix-assisted laser desorption ionization mass spectrometry analysis of grape anthocyanins. 50:199-203.
Matrix modifier. selenium detection in wines. 49:115-118.
Mechanical pruning. 50:87-90.
Meloidogyne spp. 52:310-316.
rootstock resistance. 53:19-23.
Merbein Seedless. ripening and furrow irrigation. 49:375-382.
Merlot. catechin and epicatechin concentrations. 50:25-32.
production in juice and must. 49:325-332.
Marc distillates. 49:56-94.
Matrix-assisted laser desorption ionization mass spectrometry analysis of grape anthocyanins. 50:199-203.
Matrix modifier. selenium detection in wines. 49:115-118.
Mechanical pruning. 50:87-90.
Mesocriconema xenoplax. 52:304-309.
Methode Champenoise process effect on wine aroma. 49:289-294.
Methoxypyrazine concentration in grape berries. 50:194-198.
2-Methoxy-3-isobutylpyrazine. 53:1-5.
Metschnikowia. native flora fermentations. 52:198-203.
Microfiltration. polysaccharide impact on organic membrane. 50:51-56.
Microsatellite. markers. 50:236-242, 243-246.
V. vinifera. 53:125-130.
Mineral. irrigation effects on in maturing berries. 50:418-434.
Minimal pruning. effect on wine performance. 52:45-48.
Mitochondrial DNA analysis. wild yeast strains. 50:219-224.
Modelling. alcoholic fermentation. 50:166-178.
Monoterpenes. Riesling. canopy management effects on. 49:35-43.
Morphology, grapevine. characterization of wild vines. 50:443-446.
Multiple mass spectrometry. anthocyanin analysis. 51:55-64.
Muscat Bailey A. yeast polygalacturonases. 52:41-44.
Muscat grapes. aromatic composition. 51:404-408.
Muscadin grapes. cellulose characterization. 50:19-24.
protein. 53:87-91.
Must. grape. acidification. 50:45-50.
  amino acid concentrations. in Chardonnay. 50:253-258.
  in Tempranillo. 50:144-154.
arabinose. 51:227-232.
  Botrytis cinerea effect on pectolytic composition. 50:456-460.
  clarification. effects on amino acids. 49:389-396.
deadacification with Schizosaccharomyces pombe. 49:408-412.

Must, grape, cont.
  ethyl carbamate. 51:227-232.
  high malate. 49:408-412.
  mannoprotein production. 49:325-332.
  oxidation. 49:91-94.
  pectic polysaccharides. 51:115-121.
  phenol removal from white musts. 51:357-361.
  polysaccharides. 51:115-121.
  turbidity effect on yeast cell wall porosity. 49:325-332.
  xylologlucons. 51:115-121.

Oenococcus oeni. 51:362-369.

Oak. See also Barrel, Aging.

Nutrition. See Grapevine, mineral nutrition.

Nutrient analysis. 51:319-328.

Nuclear microsatellites. genetic comparison of Greek cultivars. 52:101-108.

Norton. stilbene synthase. 53:289-293.


NOPA. 52:400-401.

Nutrition. See Grapevine, mineral nutrition.

Oak
  barrel-to-barrel variation among individual trees. 50:447-455.
  chemical composition. 49:79-85; 50:469-478, 479-494, 503-512,
  513-518, 519-526.
  comparison to stainless steel. 52:159-164.
  ellagitannin content. 50:447-455; 51:191-198.
  uptake. 51:269-275.

Organoleptic properties of oak in wine. 50:418-434.

Organoleptic properties of oak in wine. 50:469-478, 479-494, 503-512,
  513-518, 519-526.

Oxidation. sherry wine. 52:151-155.

Oxygen. bottle-cap permeability and dimethylsulfide formation. 52:54-55.

Palo negro. 51:319-328.

Partial least squares. decision tree analysis. 52:175-184.

P. cumaric acid concentrations in wines. 49:142-151.

Pectic polysaccharides. 50:25-32, 51-56; 51:115-121.

Pectolytic enzymes. effects on wine color. 50:271-276.

Pedunculate oak. ellagitannin content. 50:447-455.

Peonia. grape. 50:199-203.

Peptide(s). angiotensin I converting enzyme (ACE). 50:65-68.


Pectic polysaccharides. 50:25-32, 51-56; 51:115-121.

Nematodes. ectoparasitic. 52:304-309.

Nematodes. endoparasitic. 52:310-316.


Nitrogen. analytical methods. 53:325-329.


Nitrogen. concentration in vines. 51:122-130.

Nitrogen. demands of yeasts during fermentation. 51:168-177, 215-222.

Nutrient analysis. 51:319-328.

Nematodes. ectoparasitic. 52:304-309.

Nematodes. endoparasitic. 52:310-316.


Nitrogen. concentration in vines. 51:122-130.

Nitrogen. demands of yeasts during fermentation. 51:168-177, 215-222.

Nutrient analysis. 51:319-328.

Nutrient uptake. 51:269-275.

Nutrition. See Grapevine, mineral nutrition.


Pinto noir wines. catechin and epicatechin concentrations. 49:23-34.

Pinot noir grapevines. genetic relationships. 51:7-14.

Pinking. treatments for. 52:156-158.

Phylloxera. interaction with grape in isolation chamber. 52:28-34.

Phenol(s). cold stabilization of white wines. 50:391-397, 398-403.

Phenol-free glycosyl-glucose. 50:385-390.

Phenolic(s). See also Polyphenols.

Organoleptic properties of oak in wine. 50:469-478, 479-494, 503-512,
  513-518, 519-526.

Organoleptic properties of oak in wine. 50:469-478, 479-494, 503-512,
  513-518, 519-526.

Phenolic(s). cold stabilization of white wines. 50:391-397, 398-403.

Phenolic(s). cold stabilization of white wines. 50:391-397, 398-403.

Phenolic(s). cold stabilization of white wines. 50:391-397, 398-403.

Phenolic(s). cold stabilization of white wines. 50:391-397, 398-403.

Phenolic(s). cold stabilization of white wines. 50:391-397, 398-403.

Phenolic(s). cold stabilization of white wines. 50:391-397, 398-403.

Phenolic(s). cold stabilization of white wines. 50:391-397, 398-403.

Phenolic(s). cold stabilization of white wines. 50:391-397, 398-403.

Phenolic(s). cold stabilization of white wines. 50:391-397, 398-403.

Phenolic(s). cold stabilization of white wines. 50:391-397, 398-403.

Phenolic(s). cold stabilization of white wines. 50:391-397, 398-403.

Phenolic(s). cold stabilization of white wines. 50:391-397, 398-403.

Phenolic(s). cold stabilization of white wines. 50:391-397, 398-403.

Phenolic(s). cold stabilization of white wines. 50:391-397, 398-403.

Phenolic(s). cold stabilization of white wines. 50:391-397, 398-403.

Phenolic(s). cold stabilization of white wines. 50:391-397, 398-403.

Phenolic(s). cold stabilization of white wines. 50:391-397, 398-403.

Phenolic(s). cold stabilization of white wines. 50:391-397, 398-403.

Phenolic(s). cold stabilization of white wines. 50:391-397, 398-403.

Phenolic(s). cold stabilization of white wines. 50:391-397, 398-403.

Phenolic(s). cold stabilization of white wines. 50:391-397, 398-403.

Phenolic(s). cold stabilization of white wines. 50:391-397, 398-403.

Phenolic(s). cold stabilization of white wines. 50:391-397, 398-403.

Phenolic(s). cold stabilization of white wines. 50:391-397, 398-403.

Phenolic(s). cold stabilization of white wines. 50:391-397, 398-403.

Phenolic(s). cold stabilization of white wines. 50:391-397, 398-403.

Phenolic(s). cold stabilization of white wines. 50:391-397, 398-403.

Phenolic(s). cold stabilization of white wines. 50:391-397, 398-403.

Phenolic(s). cold stabilization of white wines. 50:391-397, 398-403.

Phenolic(s). cold stabilization of white wines. 50:391-397, 398-403.

Phenolic(s). cold stabilization of white wines. 50:391-397, 398-403.

Phenolic(s). cold stabilization of white wines. 50:391-397, 398-403.

Phenolic(s). cold stabilization of white wines. 50:391-397, 398-403.

Phenolic(s). cold stabilization of white wines. 50:391-397, 398-403.

Phenolic(s). cold stabilization of white wines. 50:391-397, 398-403.

Phenolic(s). cold stabilization of white wines. 50:391-397, 398-403.
Polyamines. training system. 52:357-363.
Polydatin. presence in commercial wines. 50:185-193.
Polygalacturonase. berry. 52:331-335.
Polymerase chain reaction (PCR). detection of virus. 52:21-27.
Polyphenol(s). See also Phenols.
Polyphenoloxidase. enzymatic decolorization. effects of seed tannins. 52:231-235.
Polyose caramelization. 50:495-502.
Polyvinylpyrrolidone (PVPP). treatments for pinking. 52:156-158.
Polyvinylpolypyrrolidone (PVPP). treatments for pinking. 52:156-158.
Polysaccharides. content in must. 51:115-121.
Polysaccharides. chemical extraction of. 50:179-184.
Polyose caramelization. 50:495-502.
Polyose. polyethylene glycol. 50:391-397, 398-403.
Polyose. polyethylene glycol. 50:391-397, 398-403.
Polyphenols. See also Phenols.
Polyphenols. See also Phenols.
Polyphenols. See also Phenols.
Polyphenols. See also Phenols.
Polyphenols. See also Phenols.
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Polyphenols. See also Phenols.
Sensory characteristics of wine, cont.
  reduced-alcohol wines. 50:307-316.
  starter culture effects on. 51:42-48.
Sensory evaluation. preference mapping. 53:275-284.
  yeast strains. 52:336-344.
Sessile oak. ellagitannin content. 50:447-455; 51:201-214.
Shading. See Canopy management.
Sherry. aroma compounds. 49:240-250.
  oxidation. 52:151-155.
  S. cerevisiae metabolism during fermentation and aging. 49:240-250
  velum formation by floe yeasts. 51:15-21.
Shiraz grapevines. irrigation scheduling. 49:413-420, 421-428.
  water deficit. 53:261-267.
Shiraz wine. catechin and epicatechin concentrations. 49:23-34.
Sensory evaluation. preference mapping. 53:275-284.
  production of calcium tartrate. 53:41-45.
  stabilization of wine. 50:343-350.
Sticky fermentation. 50:168-177, 215-222.
Stomatal density. 52:317-323.
Streptomyces. 50:404-408.
Streak formation. 50:307-316.
Stress. See also specific stress.
  nitrogen fertilization on trickle-irrigated Thompson Seedless grapevines. 50:312-316.
Streptomycetes. 50:404-408.
Strawberry. See also berry.
  bacterial leaf blight. 50:135-141.
  Xanthomonas axonopodis. 50:404-408.
Streptomyces flavescens. 50:404-408.
Sugar(s). accumulation in ripening grape berries. 51:340-346.
  effects on the growth rates and cell biomass of wine yeasts. 49:283-288.
  irrigation effects on in maturing berries. 50:418-434.
Sulfur dioxide. in reduced-alcohol wine. 50:299-306.
  table grapes. 53:110-115.
Sultana grapevines. ripening characteristics under furrow irrigation. 49:375-382.
Sunlight exposure. effects on berry growth and composition. 51:1-7.
  Table grapes. pH control of gray mold. 52:12-20.
  sulfur dioxide. 53:110-115.
Stake. See Canopy management.
Stable carbon isotope. 53:110-115.
Sensory evaluation. preference mapping. 53:275-284.
  yeast strains. 52:336-344.
Stems. See also stem.
  Grafting. 50:307-316.
  Citrus camphorata. 50:404-408.
  Graft union. 50:307-316.
Stem. See also stem.
  Grafting. 50:307-316.
  Citrus camphorata. 50:404-408.
  Graft union. 50:307-316.
Sucrose accumulation in grapes. 51:340-346.
Sorbin. See also polyphenol.
  analyses for aroma compounds. 52:159-164.
Sorbitol. See also polyol.
  analysis for aroma compounds. 52:159-164.
Sorbose. See also polyol.
  analysis for aroma compounds. 52:159-164.
Sorrel. See also Rorippa.
  growth. 50:418-434.
Sensory evaluation. preference mapping. 53:275-284.
  yeast strains. 52:336-344.
Soil. lime content. 50:1-12.
Sulfur compounds. vinification parameters effects on. 50:334-342.
Source:sink relationships. girdling effects on. 51:49-54.
Spongiforma. See also specific pathogen.
  growth. 50:418-434.
Starch. See also carbohydrate.
Steelmaking. 50:456-460.
Stem. See also stem.
  Grafting. 50:307-316.
  Citrus camphorata. 50:404-408.
  Graft union. 50:307-316.
Sensory evaluation. preference mapping. 53:275-284.
  yeast strains. 52:336-344.
Stem. See also stem.
  Grafting. 50:307-316.
  Citrus camphorata. 50:404-408.
  Graft union. 50:307-316.
Sorbin. See also polyphenol.
  analyses for aroma compounds. 52:159-164.
Sorbitol. See also polyol.
  analysis for aroma compounds. 52:159-164.
Sorbose. See also polyol.
  analysis for aroma compounds. 52:159-164.
Soil. lime content. 50:1-12.
Sulfur compounds. vinification parameters effects on. 50:334-342.
Source:sink relationships. girdling effects on. 51:49-54.
Sparkling wines. aging with yeast. 50:404-408.
  autolysis. 51:65-72.
  Botrytis cinerea effect on pectolytic composition of base wines. 50:456-460.
  browning. 51:29-36.
  bubble formation. 52:88-92.
  headspace aroma analysis to determine age. 50:404-408.
  phenolic compounds. 53:147-150.
  vinification and variety effects on foam capacity. 49:397-402.
Spectrophotometry. assay of yeast-assimilable nitrogenous compounds in juice. 49:125-134.
  ethanol determination in wines. 50:259-263.
  yeast-assimilable nitrogenous compounds in juice. 49:125-134.
  reduced-alcohol wine. 50:299-306.
  tartrate crystal seeding. 49:177-182.
Stable carbon isotope. 53:110-115.
Sorbitol. See also polyol.
  analysis for aroma compounds. 52:159-164.
Sorbose. See also polyol.
  analysis for aroma compounds. 52:159-164.
Soil. lime content. 50:1-12.
Sulfur compounds. vinification parameters effects on. 50:334-342.
Source:sink relationships. girdling effects on. 51:49-54.
Sparkling wines. aging with yeast. 50:404-408.
  autolysis. 51:65-72.
  Botrytis cinerea effect on pectolytic composition of base wines. 50:456-460.
  browning. 51:29-36.
  bubble formation. 52:88-92.
  headspace aroma analysis to determine age. 50:404-408.
  phenolic compounds. 53:147-150.
  vinification and variety effects on foam capacity. 49:397-402.
Spectrophotometry. assay of yeast-assimilable nitrogenous compounds in juice. 49:125-134.
  ethanol determination in wines. 50:259-263.
  yeast-assimilable nitrogenous compounds in juice. 49:125-134.
  reduced-alcohol wine. 50:299-306.
  tartrate crystal seeding. 49:177-182.
Stainless steel. comparison to oak. 52:159-164.
Steaming potential. 50:343-350.
Stielnhäme. 51:319-328.
Stilbene. concentrations of trans- and cis-isomers. 51:37-41.
  synthase. multigene family. 53:289-293.
Stokes law. 50:317-323.
Stomatal density. 52:317-323.
Stuck fermentation. 51:168-177, 215-222.
Sucrose accumulation in grapes. 51:340-346.
Sugar(s). accumulation in ripening grape berries. 51:340-346.
  effects on the growth rates and cell biomass of wine yeasts. 49:283-288.
  irrigation effects on in maturing berries. 50:418-434.
Sulfur compounds. vinification parameters effects on. 50:334-342.
V. vinifera, cont.

climate effects on. 51:249-261.
cover crops. 52:292-303.
cultivar identification. 52:396-399.
developmental changes. 52:317-323.
drying varieties. ripening characteristics under furrow irrigation. 49:375-382.
fruit zone leaf removal. effect on total glycoconjugates and conjugate fraction concentration. 49:259-265.
geometric comparison of Greek cultivars. 52:101-108.
genetic relationships of grape cultivars. 50:69-75, 236-242, 243-246.
genetic transformation. 53:183-190.
β-1,3-glucanase gene expression in botrytis-infected leaves. 51:81-87.
histone heterogeneity study by electrophoresis. 50:236-242, 243-246.
leaf. -area effect on development. 49:251-258.
removal. effect on total glycoconjugates and conjugate fraction concentration. 49:259-265.
chemical classification. 51:108-114.
gluten. 53:308-314.
climatic effects on quality. 51:249-261.
cooperative testing. 50:461-465.
colloid content and fouling. 52:191-197.
color. See also Color.
irrigation cutoff timing effects on. 49:152-162.
measurement. 50:359-363.
pectolytic enzymes effects on. 50:271-276.
Port wine. 50:271-276.
skin fermentation time effects on. 49:152-162.
composition. 52:34-39.
condensed tannins. 50:81-86.
copigmentation. occurrence and relation to aging. 50:211-218.
copper content. 51:131-136.
corks. phenols. 50:285-290.
Debaryomyces hansenii. application in winemaking. 50:231-235.
defoaming agent. 51:415-417.
density. ethanol concentration effects on temporal perception. 49:306-318.
distillates. Pisco. 50:404-408.
effects of temperature, pH, and sugar concentration on the growth rates and cell biomass of wine yeasts. 49:283-288.
evolution. 50:259-263.
concentration effects on temporal perception of viscosity and density. 49:306-318.
ethyl carbamate. 51:227-232.
federation. See Fermentation, Alcoholic fermentation, Malolactic fermentation.
fingerprinting wine proteins. 49:231-239.
fining treatment effects on. 50:57-64, 81-86.
flavonoids. in red wines. 49:23-34; 50:91-100.
in white wines. 50:185-193.
flavor. See also Flavor. Sensory characteristics of wine.
oak effects on. 50:447-455, 469-478, 479-494, 503-512, 513-518, 519-526.
gelatin fining. 50:81-86.
glutathione. 50:264-270.
glycoconjugates. 51:362-369.
glycosyl-glucose. 50:259-263.
histamine-producing lactic acid bacteria. 49:199-204.
histamine production. 49:199-204.
iron content. 51:131-136.
knektics of phenolic extraction during oak aging. 50:33-39.
laboratory proficiency testing. 50:461-465.
histamine production. 49:199-204.
malolactic fermentation. See Fermentation, Malolactic fermentation.
manganese content. 51:131-136.
melting point. 51:131-136.
nickel content. 51:409-417.
oak-related compounds. 50:447-455.
oak-related compounds. determination. 50:154-161.
phenolic acid concentrations. 49:142-151.
peptic polysaccharides. 50:25-32.
pectolytic enzymes. 50:271-276.
Wine(s), cont.

- Organoleptic characterization. 52:376-380.
- Pesticide residue analysis. 50:435-442.
- pH effect on stuck fermentations. 49:295-301.
- Phenol-free glycosyl-glucose. 50:385-390.

Phenolic(s). See also Phenolics.

- Concentration in standard red wine. 50:91-100.
- Kinetics of extraction from oak. 50:33-39.
- Removal from white must. 51:357-361.

Phenological stages. 49:74-78, 91-94.
- Polyphenol concentration in white wines. 50:185-193.
- Potassium hydrogen tartrate. 50:343-350.
- Potassium concentration and pH imbalance as a cause of stuck fermentations. 49:295-301.
- Putrefactive amines. 50:128-132.


- Phenol-free glycosyl-glucose. 50:385-390.
- pH effect on stuck fermentations. 49:295-301.
- Phenolic(s). Fingerprinting wine proteins. 49:231-239.

Phenolic(s). See also Phenolics.

- Quercetin concentrations. 49:142-151.
- Proanthocyanidin(s). Precipitation by gelatin fining. 50:81-86.
- Polysaccharide patterns during aging. 50:25-32.
- Polyphenol concentration in white wines. 50:185-193.

Quercetin concentrations. 49:142-151.

- Protein. Activity during fermentation. 51:155-167.
- Analysis by capillary electrophoresis. 50:120-127.

Polyphenol concentration in white wines. 50:185-193.

- Potassium hydrogen tartrate. 50:343-350.
- Potassium concentration and pH imbalance as a cause of stuck fermentations. 49:295-301.
- Putrefactive amines. 50:128-132.


- Phenol-free glycosyl-glucose. 50:385-390.
- pH effect on stuck fermentations. 49:295-301.
- Phenolic(s). Fingerprinting wine proteins. 49:231-239.

Phenolic(s). See also Phenolics.

- Quercetin concentrations. 49:142-151.
- Proanthocyanidin(s). Precipitation by gelatin fining. 50:81-86.
- Polysaccharide patterns during aging. 50:25-32.
- Polyphenol concentration in white wines. 50:185-193.

Quercetin concentrations. 49:142-151.

- Protein. Activity during fermentation. 51:155-167.
- Analysis by capillary electrophoresis. 50:120-127.

Polyphenol concentration in white wines. 50:185-193.

- Potassium hydrogen tartrate. 50:343-350.
- Potassium concentration and pH imbalance as a cause of stuck fermentations. 49:295-301.
- Putrefactive amines. 50:128-132.