

## Equipo docente Cursos Micalanda 2009

### VICENTE FERREIRA

Químico de profesión y de vocación. Cursó tanto la carrera (1982-87) como el doctorado (1988-92) en la Universidad de Zaragoza, en la que ha desempeñado cargos diversos, siendo en la actualidad Catedrático de Química Analítica y Director de dicho Departamento.

#### PROYECTOS:

- Estudio de las uvas y de los subproductos de la vinificación como fuente de aromas naturales.
- Determinación del perfil aromático de los vinos de garnacha rosados y tintos de la D.O. Calatayud. Estudio de sus particularidades e hipótesis de mejora.
- Parámetros químicos de calidad del aroma y sabor de vinos blancos monovarietales españoles: jerarquización, identificación, cuantificación y caracterización del papel sensorial de los componentes específicos del aroma
- Caracterización químico-sensorial de los principales vinos tintos españoles mediante la determinación de la relación existente entre su contenido en odorantes y su descripción sensorial determinada por paneles de Expertos

#### PUBLICACIONES:

Addition of amino acids to grape juices of the Merlot variety. Effect on the use of amino acids and the generation of aromas during the alcoholic fermentation. Hernandez-Orte P., M. Ibarz, J. Cacho, V. Ferreira.

FOOD CHEM

Efect of the addition of ammonium and amino acids to musts of airen variety on aromatic composition and sensorial properties of the obtained wine. Hernandez-Orte P., M. Ibarz, J. Cacho, V. Ferreira.

FOOD CHEM

Gas Chromatography-Olfactometry and Chemical Quantitative Study of the Aroma of six premium quality Spanish aged red wines. L. Cullere, A. Escudero, J. Cacho, V. Ferreira.

J AGR FOOD CHEM

Analysis of the aroma intensities of volatile compounds released from mild acid hydrolysates of odourless precursors extracted from Tempranillo and Grenache grapes using gas chromatography-olfactometry. R. Lopez, E. Ezpeleta, I. Sánchez, J. Cacho, V. Ferreira.

FOOD CHEM

Determination of important odor-active aldehydes of wine through gas chromatography-mass spectrometry of their O-(2,3,4,5,6-pentafluorobenzyl)oximes formed directly in the solid phase extraction cartridge used for selective isolation. V. Ferreira, L. Cullere, R. Lopez, J. Cacho.

J CHROMATOGR A

Determination of free amino acids in grape juices and wine using a modification of the 6-aminoquinolyl-N-hydrosuccinimidyl carbamate (AQC) method for amino acid analysis. Hernandez-Orte P., M. Ibarz, J. Cacho, V. Ferreira.

CHROMATOGRAPHIA

Prediction of aged red wine aroma properties from aroma chemical composition. Partial least square regression models. M. Aznar, R. Lopez, J. Cacho, V. Ferreira.

J AGR FOOD CHEM

Sensory and Chemical-Changes of Young White Wines Stored Under Oxygen - An Assessment of the Role Played by Aldehydes and Some Other Important Odorants. A. Escudero, E. Asensio, J. Cacho, V. Ferreira.

FOOD CHEM

Quantitative-Determination of Methional in Wines by Gas-Chromatography Flame Photometric Detector Analysis of Amberlite XAD-4 Extracts. V. Ferreira, J. Cacho.

QUIM ANAL

Chemical Characterization of the Aroma of Grenache Rose Wines - Aroma Extract Dilution Analysis, Quantitative-Determination, and Sensory Reconstitution Studies. V. Ferreira, A. Escudero, J. Cacho, R. Lopez.

J AGR FOOD CHEM

Aroma Extract Dilution Analysis - Precision and Optimal Experimental-Design. V. Ferreira.  
J AGR FOOD CHEM

Relationship Between Varietal Amino-Acid Profile of Grapes and Wine Aromatic Composition - Experiments with Model Solutions and Chemometric Study. Hernandez-Orte P., J. Cacho, V. Ferreira.  
J AGR FOOD CHEM

Determination of Minor and Trace Volatile Compounds in Wine by Solid-Phase Extraction and Gas-Chromatography with Mass-Spectrometric Detection. J. Cacho, V. Ferreira, R. Lopez.  
J CHROMATOGR A

Identification and Quantification of Impact Odorants of Aged Red Wines from Rioja - GC-Olfactometry, Quantitative GC-MS, and Odor Evaluation of HPLC Fractions. R. Lopez, J. Cacho, V. Ferreira.  
J AGR FOOD CHEM

Quantitative Gas Chromatography-Olfactometry Carried Out at Different Dilutions of an Extract - Key Differences in the Odor Profiles of 4 High-Quality Spanish Aged Red Wines. V. Ferreira, R. Lopez, J. Cacho.  
J AGR FOOD CHEM

Fast Analysis of Important Wine Volatile Compounds Development and Validation of a New Method Based on Gas Chromatographic-Flame Ionization Detection Analysis of Dichloromethane Microextracts. R. Lopez, J. Cacho, V. Ferreira.  
FALTA REFERENCIA JCR Vol 923, Iss 1-2, pp 205-214, 2001

Use of Solid-Liquid Distribution Coefficients to Determine Retention Properties of Porapak-Q Resins - Determination of Optimal Conditions to Isolate Alkyl-Methoxypyrazines and Beta-Damascenone from Wine. R. Lopez, J. Cacho, V. Ferreira.  
J CHROMATOGR A

Isolation and Identification of Odorants Generated in Wine During Its Oxidation - A Gas Chromatography-Olfactometric Study. A. Escudero, J. Cacho, V. Ferreira.  
EUR FOOD RES TECHNOL

Quantitative-Determination of the Odorants of Young Red Wines from Different Grape Varieties. V. Ferreira, R. Lopez, J. Cacho.  
J SCI FOOD AGR

A Comparative-Study of the Ability of Different Solvents and Adsorbents to Extract Aroma Compounds from Alcoholic Beverages. V. Ferreira, A. Escudero, J. Cacho.  
J CHROMATOGR SCI

Impact odorants of different young white wines from the Canary Islands. R. Lopez, N. Ortin, J. P. Pérez Trujillo, J. Cacho, V. Ferreira.  
J AGR FOOD CHEM

Clues About the Role of Methional as Character Impact Odorant of Some Oxidized Wines. A. Escudero, Hernandez-Orte P., J. Cacho, V. Ferreira.  
J AGR FOOD CHEM

Semipreparative Reversed-Phase Liquid-Chromatographic Fractionation of Aroma Extracts from Wine and Other Alcoholic Beverages. V. Ferreira, Hernandez-Orte P., A. Escudero, R. Lopez, J. Cacho.  
J CHROMATOGR A

Some Observations About the Correlation Between the Amino-Acid Content of Musts and Wines of the Chardonnay Variety and Their Fermentation Aromas. V. Ferreira, J. Cacho.  
AM J ENOL VITICULT

Effects of maceration time and pectolitic enzymes added during maceration on the phenolic composition of must. P. Fernandez, V. Ferreira, A. Escudero, J. Cacho.  
FOOD SCI TECHNOL INT

Identification of Impact Odorants of Young Red Wines Made with Merlot, Cabernet-Sauvignon and Grenache Grape Varieties - A Comparative-Study. R. Lopez, V. Ferreira, Hernandez-Orte P., J. Cacho.  
J SCI FOOD AGR

Role of Hydroxycinnamic Acids and Flavanols in the Oxidation and Browning of White Wines. V. Ferreira, A. Escudero, J. Cacho.  
J AGR FOOD CHEM

Relationship Between Flavor Dilution Values and Odor Unit Values in Hydroalcoholic Solutions - Role of Volatility and a Practical Rule for Its Estimation. V. Ferreira, R. Lopez, J. Cacho.  
J AGR FOOD CHEM

Analytical Characterization of the Flavor of Oxygen-Spoiled Wines Through the Gas-Chromatography Ion-Trap Mass-Spectrometry of Ultratrace Odorants - Optimization of Conditions. V. Ferreira, A. Escudero, J. Cacho, R. Lopez.  
JJ CHROMATOGR SCI

Quantitative-Determination of Trace and Ultratrace Flavor Active Compounds in Red Wines Through Gas-Chromatographic Ion-Trap Mass-Spectrometric Analysis of Microextracts. V. Ferreira, R. Lopez, A. Escudero, J. Cacho.  
J CHROMATOGR A

The Aroma of Grenache Red Wine - Hierarchy and Nature of Its Main Odorants. V. Ferreira, A. Escudero, J. Cacho, R. Lopez.  
J SCI FOOD AGR

Concentration of Small Volumes of Nonpolar Solutions Containing Trace Volatile Compounds. V. Ferreira, C. Peña, R. Lopez, J. Cacho.  
J CHROMATOGR A

Prediction of oxidative browning in white wines as a function of their chemical composition. P. Fernandez, V. Ferreira, C. Peña, A. Escudero, F. Serrano, J. Cacho.  
J AGR FOOD CHEM

Investigation on the role played by fermentation esters in the aroma of young spanish wines by multivariate analysis. V. Ferreira, P. Fernandez, C. Peña, A. Escudero, J. Cacho.  
J AGR SCI

Fast microextraction by demixture for the determination of organochlorine compounds in water. J. Cacho, J. Salafranca, V. Ferreira, C. Nerin.  
INT J ENVIRON AN CH

Matrix Effects and Solute Discrimination when Injecting Dirty Samples in Capillary Columns. A Comparative Study between Classical Split and Splitless Injections. V. Ferreira, A. Escudero, J. Salafranca, J. Cacho.  
J CHROMATOGRA

Glycosidic aroma precursors in grapes. Comparative study of extraction techniques and development of a quantitative assay based in the GC-MS determination of volatiles released by fast acid hydrolysis.. M. Ibarz, Hernandez-Orte P., J. Cacho, V. Ferreira.  
IN VINO ANALYTICA SCIENTIA

Precusores Glicosídicos del Aroma en uvas. Estudio Comparativo de Distintas Técnicas de extracción. Determinación Cuantitativa de los Volátiles Liberados por Hidrólisis Ácida. Hernandez-Orte P., M. Ibarz, J. Cacho, V. Ferreira.  
GIENOL 2005

Optimization of a method for the isolation, hydrolysis and subsequent GC-MS determination of aroma compounds from non-volatile precursors of grapes and other products. M. Ibarz, Hernandez-Orte P., J. Cacho, V. Ferreira.  
Euroanalysis XIII

Role of amino-acid related odorants in wine aroma. Using sensory differences between synthetic models to predict the role of odorants in complex mixtures. Hernandez-Orte P., M. Ibarz, J. Cacho, V. Ferreira.  
EUROPEAN CONFERENCE ON SENSORY SCIENCE OF FOOD AND BEVERAGES

The aroma composition of white wines made with grapes from different spanish vitis vinifera cultivars. V. Ferreira, A. Escudero, Eva Campo, J. Cacho.  
7th Wartburg Aroma Symposium

Monitoring the evolution of the uptake of amino acid during alcoholic fermentation by pre-column derivatization with 6-aminoquinolyl-n-hidroxisuccinimidyl carbamate (aqc). M. Ibarz, Hernandez-Orte P., J. Cacho, V. Ferreira.

XII. Reunion Científica de la Sociedad Española de Química Analítica

Study of the aromatic profile of different white wines by gas chromatography-olfactometry. Eva Campo, A. Escudero, J. Petka, J. Cacho, V. Ferreira.

VIII Internacional Symposium on Analytical methodology in the environmental field. XIII meeting of the meeting of the Spanish society of analytical chemistry

Ensayos de adición, supresión y reconstitución para dilucidar el aroma de vinos procedentes de la variedad Chardonnay. A. Escudero, N. Ortin, J. Cacho, V. Ferreira.

VII Jornadas Científicas de los Grupos de Investigación Enológica

Evaluación sensorial orthonasal y retrornasal de la interacción del furaneol con un ortodifenol. I. Jarauta Gurría, A. Escudero, V. Ferreira, J. Cacho.

VII Jornadas Científicas de los Grupos de Investigación Enológica

Quantitative possibilities of Gas Chromatography-Olfactometry with simple measurements of intensity. V. Ferreira.

10th Weurman Flavour Research Symposium,2002

Contribution to the analytical chemistry of sotolon and Furaneol. V. Ferreira.

10th Weurman Flavour Research Symposium,2002

Development of a quantitative method for determination of 2-methyl-3-furanthiol in wine by SPME-GC-FID. Sanchez Galvez, A. Escudero, J. Cacho, V. Ferreira.

10 as Jornadas de Análisis Instrumental

Qualitative, quantitative and sensory studies carried out on the aroma of Spanish Grenache rosé wines. J. Cacho, N. Ortin, R. Lopez, A. Escudero, V. Ferreira.

10th Weurman Flavour Research Symposium,2002

Odour intensity magnitude evaluation and its consequence for stimulus-response function. V. Ferreira.

4th Pangborn Sensory Science Symposium

Tipificación de los vinos tintos D.O. Navarra. V. Ferreira.

VI Jornadas Gienol

Study of key aroma compounds of Macabeo and Grenache wines. (FD, OAV and sensory experiments).. A. Escudero, Beatriz Gogorza, J. Cacho, V. Ferreira.

4th Pangborn Sensory Science Symposium,2001

Nature and importance of the aromatic compounds released by acid hydrolysis of glycosidic precursors from neutral grapes: An olfactometric and quantitative research. Assessment of their role in the Título :. V. Ferreira.

6th Wartburg Aroma Symposium

Flavors and aromas formed during oxidative storage: clues about their formation and some technological consequences.. V. Ferreira.

7º International Symposium of Oenology: Oxygen and sensory characters of wines,2000

El aroma varietal del Tempranillo: rutas de formación y perspectivas de optimización tecnológica. V. Ferreira, A. Escudero, R. Lopez, Hernandez-Orte P., J. Cacho.

II Foro mundial del vino III Milenio. 18-19 de mayo de 2000,2000

Aplicación de distintos desfangados en mostos blancos elaborados con y sin maceración y su efecto en el contenido polifenólico. J. Cacho, A. Escudero, V. Ferreira, P. Fernandez.

Rioja III milenio,II Foro mundial del vino

Parametrización aromática sensorial y química. Una importante contribución a la enología de calidad. J. Cacho, V. Ferreira, A. Escudero, R. Lopez, P. Fernandez.

II Foro Mundial del Vino

Aroma composition of the classic old red wine from Rioja (Spain). A research through AEDA, odour evaluation of RP-HPLC flavour fractions and quantitative GC-MS. Comparison of techniques. J. Cacho, V. Ferreira, A. Escudero, R. Lopez.

6th Wartburg Aroma Symposium

Cuantificación de los aromas más importantes del vino. Caracterización de distintos vinos de la D.O. Somontano. V. Ferreira.  
Jornadas Científicas 99.,1999

Relación Composición Química-Aroma. V. Ferreira.  
Jornadas Científicas 99.,1999

Estudio comparativo de la eficiencia de distintos sistemas extractantes L-L y L-S en la obtención de extractos de aromas de matrices hidroalcohólicas. V. Ferreira.  
JAI 1999,1999

Uso de los perfiles terpénicos para la determinación de la procedencia de pinos de la variedad Halepensis Mill. V. Ferreira.  
JAI 1999,1999

Uso de un sistema RP-HPLC para el fraccionamiento semi-preparativo de extractos de aroma de vino y otras bebidas alcohólicas. Hernandez-Orte P., V. Ferreira, A. Escudero, R. Lopez, J. Cacho.  
9as Jornadas de Análisis Instrumental

Nuevo método HPLC fase reversa GC-MS-O para la determinación de odorantes característicos del vino. Añocación a la variedad Chardonnay. Hernandez-Orte P., A. Escudero, A. Latasa, V. Ferreira, J. Cacho.  
XI Reunión Científica de la Sociedad Española de Química Analítica

Tipificación de vinos tintos de varias denominaciones de origen aragonesas mediante el estudio de su composición fenólica. P. Fernandez, V. Ferreira, A. Escudero, Hernandez-Orte P., R. Lopez, J. Cacho.  
Grupos de Investigación Enológica. Jornadas Científicas 99

Oxidación del aroma del vino: Cambios en los perfiles aromáticos e identificación de los compuestos con significación sensorial.. A. Escudero, V. Ferreira, Hernandez-Orte P., J. Cacho.  
Grupos de Investigación Enológica. Jornadas Científicas 99

Pruebas adicionales de la implicación del metional en el olor a judías verdes cocidas generados en algunos vinos blancos oxidados.. Hernandez-Orte P., A. Escudero, V. Ferreira, J. Cacho.  
Grupos de Investigación Enológica. Jornadas Científicas 99

Wine Flavour Oxidation: Changes in the aroma profiles during oxidation and their potential sensory significance. A. Escudero, V. Ferreira, Hernandez-Orte P., J. Cacho.  
Actualités Enologiques 1999,VI Symposium International D'Oenologic

Estrategias para la identificación y cuantificación del aroma. V. Ferreira, A. Escudero, R. Lopez, J. Cacho.  
X Reunión de la Sociedad española de Química Analítica

Analytical characterization of the flavour of oxygen spoiled wines through the CG-Ion trap MS of ultratrace odorants. V. Ferreira, E. Asensio, A. Escudero, R. Lopez, J. Cacho.  
8th Symposium on Handling of Environmental and Biological Samples in Chromatography and 26th Scientific Meeting of the Group of Chromatography and Related Techniques of the Spanish Royal Society of Chemistry

Análisis cuantitativo de los volátiles responsables del aroma del vino. Dificultades asociadas a las estrategias clásicas y propuesta de estrategia optimas. V. Ferreira, A. Escudero, R. Lopez, J. Cacho.  
Jornadas Científicas de grupos de investigación enológica

Protocolo general de análisis para el aislamiento, identificación y jerarquización de los aromas mas importantes de los vinos. V. Ferreira, A. Escudero, C. Peña Del Olmo, R. Lopez, J. Cacho.  
Jornadas Científicas de grupos de investigación enológica

Seguimiento de los compuestos fenólicos durante la oxidación de los vinos. P. Fernandez, V. Ferreira, A. Escudero, J. Cacho.  
Jornadas Científicas de grupos de investigación enológica

Generación y destrucción de aromas en la oxidación del vino blanco. V. Ferreira, A. Escudero, J. Cacho.  
Jornadas Científicas de grupos de investigación enológica

La evolución degenerativa por oxidación del aroma del vino. A. Escudero, V. Ferreira, P. Fernandez, J. Cacho.  
Jornadas Científicas de grupos de investigación enológica

Application of the Microextraction by Demixing to the Analysis of Stimulants in Urine. J. Cacho, V. Ferreira, J. Salafranca, C. Nerin.

Euroanalysis VIII

Estudio cuantitativo y sensorial de la composición de precursores aromáticos de ciertas variedades del Vitis del Somontano. J. Cacho, V. Ferreira, R. Lopez, C. Peña Del Olmo, A. Escudero, M. J. Gutierrez.

IX Congreso nacional de Química

Estudio de la influencia del nivel hídrico en la composición de precursores aromáticos de uvas de Cavernet Sauvignon, procedentes del Somontano de Barbastró. V. Ferreira, C. Peña Del Olmo, A. Escudero, A. López Usán, M. Sipióra, J. Cacho.

IX Congreso nacional de Química

Le role des esters de fermentation dans l'arome des jeunes vins espagnols. V. Ferreira, P. Fernandez, C. Peña Del Olmo, A. Escudero, J. Cacho.

Symposium international: Connaissance aromatique des cépages et qualité des vins

Flavonoid analysis in musts and wines. J. Cacho, P. Fernandez, V. Ferreira, C. Peña Del Olmo, A. Escudero.

Euroanalysis VIII

New Microextraction Procedure for the Analysis of Organochlorine Pollutants. J. Cacho, V. Ferreira, C. Sagues, C. Nerin. International Symposium on Environmental Analytical Chemistry

Interaction between Solvent and Stationary Phase in the Splitless Injection. Influence over Mass Transfer. V. Ferreira, C. Sagues, J. Cacho.

12th International Symposium on Microchemical Techniques

Estudio de la Influencia de la Polaridad del Disolvente en la Transferencia de los Solutos en la Inyección Splitless. V. Ferreira, J. Salafranca, A. Lopez, P. Fernandez, J. Cacho.

XXI Reunión Científica del GCTA

Matrix Effects and Solute Discrimination when Injecting Dirty Samples in Capillary Columns. V. Ferreira, A. Escudero, J. Salafranca, J. Cacho.

12th International Symposium on Microchemical Techniques

Discriminación en las Inyecciones Split y Splitless como Consecuencia de la Presencia de No Volátiles. Estudio comparativo. V. Ferreira, A. Escudero, J. Salafranca, J. Cacho.

XXI Reunión Científica del GCTA

Strategies for the Analysis of Trace Flavour Impact Compounds in Foodstuff Samples. V. Ferreira, A. Escudero, C. Peña Del Olmo, A. López Usán, P. Fernandez, J. Cacho.

12th International Symposium on Microchemical Techniques

Aromatic Composition and Sensory Contribution of Several Groups of Compounds in Wines from Aragon. V. Ferreira, J. Cacho, A. Escudero, C. Peña Del Olmo, A. López Usán, P. Fernandez.

XX Congreso Mundial de la Vidia y el Vino. 72º Asamblea General O.I.V

Evolution of the Aromatic Composition of the Must-Wine during the Fermentation Process. J. Cacho, V. Ferreira, A. Escudero, C. Peña Del Olmo, A. López Usán, P. Fernandez, J. Gracia.

XX Congreso Mundial de la Vidia y el Vino. 72º Asamblea General O.I.V

Determinación de los compuestos volátiles odoríferos de la cachaza por técnica olfatómica AEDA. N. Janzantti, R. Lopez, V. Ferreira, J. Cacho, R. B. Franco.

La semana vitivinícola

Quantitative determination of methional in wines by gas-chromatography-flame photometric detector analysis of Amberlite XAD-a extracts. A. Escudero, P. Lisarri, J. Cacho, V. Ferreira.

Química Analítica

Olfactometry and aroma extract dilution analysis of wines. V. Ferreira, R. Lopez, M. Aznar.

Molecular Methods of Plant Analysis Ed. by J.F. Jackson, K.F. Linskens and R.B. Inmen

Food Chemistry. E. Asensio, J. Cacho, V. Ferreira.

Sensory and Chemical Changed of Young Wines Stored under Oxigen andS Assessment of the Role Played by Aldehydes and Some other important Odo

Flavours and aromas formed during oxidative storage of wines:clues about their formation and some technological consequences. A. Escudero, J. Cacho, V. Ferreira.  
Italian Food&Beverage Technology-XXII

Molècules d'importància sensorial. J. Cacho, V. Ferreira, R. Lopez.  
ACE Revista d'enologia

Changes in the volatile profile of wines stored under oxygen and their relation with the browing process. V. Ferreira, A. Escudero, P. Fernandez, P. Fernandez.  
Z. Lebensm. Unters Forsch

Losses of volatile compounds during fermentation. V. Ferreira, C. Peña, A. Escudero, J. Cacho.  
Z. Lebensm Unters Forsch

Estudio de la influencia del nivel hídrico en la composición de precursores aromáticos de uvas de Cavernet Sauvignon, procedentes del Somontano de Barbaastro. V. Ferreira, C. Peña Del Olmo, A. Escudero, A. López Usán, M. Sipiora.  
La Semana Vitivinívola

Estudio cuantitativo y sensorial de la composición de precursores aromáticos de ciertas variedades del Vitis del Somontano. J. Cacho, V. Ferreira, A. López Usán, C. Peña, A. Escudero, M. J. Gutierrez.  
La Semana Vitivinícola

Method for the HPLC prefractionation of wine flavor extracts. Sensorial aspects. Profiling wine aroma. V. Ferreira, C. Peña, A. Escudero, P. Fernandez, J. Cacho.  
Progress in Food Fermentation

Method for the HPLC prefractionation of wine flavor extracts Analytical aspects. V. Ferreira, C. Peña, A. Escudero, P. Fernandez, J. Cacho.  
Progress in Food Fermentation

Determination of lead in wines by hydride generation atomic absorption spectrometry. J. Cacho, V. Ferreira, C. Nerin.  
The Analyst