

CV MARIA ROSA GUASCH JANÉ

EDUCATION

01/04/2001-21/09/2005 Ph.D. "Wine in Ancient Egypt: a Cultural and Analytical Study", Excellent Cum Laude by all members, director Dr. Rosa Maria Lamuela Raventós Nutrition and Food Science Department, Faculty of Pharmacy, Universitat de Barcelona (UB), Spain

01/07/1998-01/09/2000 Master Degree in Oriental Studies-Egyptology Faculty of Philosophy, Universitat Autònoma de Barcelona (UAB), Spain

05/09/1999-20/09/2000 Research Sufficiency doctoral program in Oriental Studies-Egyptology Faculty of Philosophy (UAB), Spain

01/09/1996-26/07/1998 Master Degree-Thesis "Resveratrol in Spanish Red Wines" Nutrition and Food Science Department, Faculty of Pharmacy (UB), Spain

01/09/1992-07/07/1996 B.S. Pharmacy Faculty of Pharmacy, Universitat de Barcelona (UB), Spain

CURRENT POSITION

01/06/2014-present Director of the Project 'Irep en Kemet', Wine of Ancient Egypt Unit for Studies and Research in Science and Cooking (UERCC), Food and Nutrition Torribera Campus, Universitat de Barcelona, Spain

PREVIOUS POSITIONS AND FELLOWSHIPS

01/01/2011-30/04/2014 PI of the Project "Study of viticulture and oenology in Egyptian tombs" Faculty of Social and Human Sciences, Universidade Nova de Lisboa (Portugal)
Project number and title: PTDC/HIS-ARQ/112562/2009, Study of viticulture and oenology in the Egyptian tombs. Funded by: Fundação para a Ciência e a Tecnologia (FCT), Ministry of Education and Science in Portugal (90.000€), gained through competitive funding Program "Research and Development Projects in all Scientific Domains 2009"

01/01/2007-31/12/2011 Postdoctoral Grant BPD/32402/2006, Instituto Oriental Faculdade de Ciências Sociais e Humanas, Universidade Nova de Lisboa. Funded by Fundação para a Ciência e a Tecnologia (FCT), Ministry of Education and Science, Portugal

01/04/2006-30/04/2006 Visiting Research Fellow (Postdoctoral Grant), Institut Français d'Archéologie Orientale (IFAO), Cairo, Egypt

01/04/2003-30/05/2005 Research Assistant "Study of wine in Ancient Egypt", doctoral research Fundació Bosch i Gimpera, Universitat de Barcelona, Spain.
Project number and title: FBG302298, Wine in Ancient Egypt: study of the colour of wine. Funded by: Fundación para la Cultura del Vino

01/04/2001-30/03/2003 Research Assistant "Study of wine in Ancient Egypt", doctoral research Fundació Bosch i Gimpera, Universitat de Barcelona, Spain.
Project number and title: FBG301266, Investigación sobre el origen de la viña y el vino, y el consumo y efecto nutricional del vino en el antiguo Egipto. Funded by: Codorníu Group S.A.

OTHER PROFESSIONAL ACTIVITIES

01/10/2015-present Pharmacist in Pharmacy Pasqual Balañà Crespo, Barcelona (Spain)
02/01/2013-31/07/2013 Pharmacist in Pharmacy Neus Gardella Roca, Barcelona

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(Spain)
01/04/1999-30/06/2000 Production and Quality Director, Martínez-Llenas pharmaceutical laboratory, La Roca del Vallès (Spain)
01/10/1997-30/04/1998 Pharmacist in Pharmacy Pilar González, Barcelona (Spain)

Stays at foreign centres during the PhD:

- Egyptian Museum, Cairo (Egypt). Collecting archaeological samples. Period: 3 months (2001-2002)
- Institut Français d'Archeologie Orientale, Cairo (Egypt). Bibliographical research on ancient Egyptian wine-jars. Period: 1 month (2002)
- British Museum, London (UK). Collecting archaeological samples. Period: 1 month (2002)
- Egypt Exploration Society in London and Sackler library, Oxford University (UK). Bibliographical research about wine in ancient Egypt. Period: 1 month (2002)

Stays at foreign centres during the post-doc:

01/01/2008-30/06/2008 Visiting Researcher, Post doctoral stay
Institut Français d'Archeologie Orientale (IFAO), Cairo (Egypt). Subject: Research on the symbolism of wine in royal tombs of ancient Egypt

01/07/2007-30/12/2007 Visiting Researcher, Post doctoral stay
Special and Rare Collections Library, American University in Cairo (Egypt). Subject: Research on the symbolism of wine and other objects in Tutankhamun's Burial chamber

Research stays in the United Kingdom during the 'Irep en Kemet' Project:

Dr. Guasch did several research stays with the project team in the UK at the Griffith Institute and the Sackler-Bodleian libraries of the Oxford University in Oxford, and at the Egypt Exploration Society and the Department of Ancient Egypt and Sudan of the British Museum in London.
Subject: Document the ancient Egyptian private tombs having viticulture and winemaking scenes, Total Period: 5 months (2012-2014)

PhD RESEARCH RESULTS

The research during Dr. Guasch's PhD did focus on the study of the colour of the ancient Egyptian wines.

The main contributions derived from her research during that period are three: (1) develop an analytical method for archaeological wine residues using LC/MS/MS technique, (2) the first identification of red and white wines from ancient Egypt, and (3) unveil the botanical origin of the *shedeh* drink.

Dr. Guasch's PhD dissertation was a combination of the skills acquired leading to a significant scientific contribution to Egyptology. The results revealed an Egyptian oenological specialization transmitted to other Mediterranean cultures up to the present time.

1) Analytical method for archaeological wine residues by LC/MS/MS

The method for wine-markers in archaeology was developed using the liquid chromatography mass spectrometry in tandem (LC/MS/MS) technique through the identification of two compounds: tartaric acid, as a grape marker, and syringic acid derived from malvidin-3G (the latter being the main compound responsible for the red colour of grapes and wines), which we proposed as red grape marker. Samples studied were jars of the Pre-dynastic (about 3100 BC) and New Kingdom (1539-1075 BC) Periods at the British Museum in London (UK), and the Egyptian Museum in Cairo (Egypt).

2) Identification of red and white wines in ancient Egypt

The colour (kind) of Egyptian wines was identified through the analysis of intact sample residues from eight amphorae at Cairo Museum, Egypt, found in Tutankhamun's tomb at the Valley of Kings (KV62) at Thebes. Sample analysis revealed that three kinds of grape products were made in ancient Egypt: red wine, white wine and a more elaborate red wine, named *shedeh*. The Egyptian mythology related the wine only to the red colour and the

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blood of Osiris, the god of afterlife and resurrection, but also to the reddish colour of the River Nile during the annual flood when the harvest time for grapes occurred. However, no textual references to white wine -or to red wine- from the Dynastic Period (2950-30 BC) have been found in Egypt up to now.

The contribution of Dr. Guasch's research was to confirm the existence of red wine in ancient Egypt during the New Kingdom period (1539-1075 BC). The existence of white wine was even more doubtful until Tutankhamun's amphorae were analysed, as the first mention of white wine in Egypt is from Athenaeus of Naucratis, who lived during the 3rd century BC, in his book *The Deipnosophistae*.

The results of this research revealed that in ancient Egypt red and white wines were both given the name *irp* [which means 'wine' in the ancient Egyptian language]. Dr. Guasch's analytical results added new information to the inscription on the amphorae: the type of wine contained.

3) Reveal the botanical origin of the *shedeh* drink

The botanical origin of *shedeh*, an Egyptian drink of unknown translation, which was discussed for a century, with pomegranates and grapes having been proposed as raw material, was first unveiled.

Shedeh's raw material was uncertain until the only intact sample from a *shedeh* amphora, found in Tutankhamun's burial chamber, was analysed. According to Papyrus Salt 825 (BM 10051) of the Late Period (715-332 BC), the only text found until now that gives indications about the preparation of *shedeh*, it was filtered and heated but, due to damage in the papyrus, the raw material was a mystery.

Dr. Guasch's analytical results through the LC/MS/MS method for wine-markers in archaeology revealed that *shedeh* was made from red grapes.

During her PhD at the Nutrition and Food Science Department, Pharmacy Faculty of the University of Barcelona, Dr. Guasch did bibliographical investigation, sampling of the jars and chemical analysis of the residue samples, with doctoral stays in the UK (British Museum and Sackler library, Oxford University), Egypt (Egyptian Museum and Institut Français d'Archéologie Orientale) and Spain (Scientific and Technical Services, UB-Research Park).

Dr. Guasch did mid-term stays at the Institut Français d'Archeologie Orientale in Cairo, Egypt (2001), and at the Egypt Exploration Society in London and the Sackler library in Oxford University, UK (2002).

Dr. Guasch carried out selection of samples of ancient Egyptian wine jars at the Egyptian Museum in Cairo, Egypt (2001-2002), with special permission from the Egyptian Supreme Council of Antiquities, and at the Department of Ancient Egypt and Sudan of The British Museum in London, UK (2002).

She collected the samples under the museums' curators and Egyptian Antiquities policemen supervision.

Dr. Guasch worked under the supervision of Dr. Halla Hassan, curator of Tutankhamun's collection at the Cairo Egyptian Museum, and Dr. John Taylor, curator of the Ancient Egypt and Sudan Department, British Museum.

Moreover, Dr. Guasch carried out the chemical analysis of archaeological samples at the Scientific and Technical services, UB Research Park, supervised by Dr. Olga Jáuregui, and developed an analytical method for wine markers in archaeology using the liquid chromatography mass spectrometry in tandem (LC/MS/MS) technique through the identification of tartaric acid -grape marker- and syringic acid derived from malvidin-3G, which was proposed as a red grape marker

PhD research transfer of technology:

The results were published in 4 peer-reviewed articles in 3 top journals and 1 in international congress proceedings, and 2 book monographs, in which she is the first or the only author.

Guasch-Jané, M.R. et al "Liquid chromatography mass spectrometry in tandem mode applied for the identification of wine markers in residues from ancient Egyptian vessels", *Anal Chem* 76 (2004): 1672-77; Guasch-Jané, M.R. et al "First evidence of white wine in ancient Egypt from Tutankhamun's tomb" *JAS* 33 (2006): 1075-80; Guasch-Jané, M.R. et al "The origin of the ancient Egyptian drink *Shedeh* revealed using LC/MS/MS" *JAS* 33 (2006): 98-101; Guasch, M.R. et al 2007. "Scientific research on archaeological residues from ancient Egyptian wines", *Proceedings of the Ninth International Congress of Egyptologists*, Grenoble (France), September 6-12, 2004, *OLA* 150, 1 (2007): 853-57.

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Guasch Jané, M.R. "Wine in ancient Egypt: a cultural and analytical study" BAR S1851, 2008. Book edited by Archaeopress, Oxford; Guasch i Jané, M.R. 2005. *El Vi a l'Antic Egipte* (ISBN 84-690-0284-8). TDX-CAT Doctoral thesis dissertation in the Catalan Universities on-line [<http://www.tdx.cat/handle/10803/2431>]

Dr. Guasch's research results also merited a review article in Science journal (312, 16 June 2006: 1579).

She presented the results as oral communications in the IX International Congress of Egyptologists in Grenoble (France) in 2004 and in a press conference for British and Spanish media at The British Museum in London (UK) in 2005.

Furthermore, Dr. Guasch was invited to present the results at the Department of Conservation, Documentation and Science of The British Museum in London (UK) in 2006, with the attending of curators of the Department of Ancient Egypt and Sudan and the British Museum director, as well as in another 6 lectures to the scientific and non-scientific community in Spain and Portugal.

POST-DOCTORAL RESEARCH RESULTS

Dr. Guasch's first post-doctoral stay (2007-2010) at Instituto Oriental of the Faculdade de Ciências Sociais e Humanas, Universidade Nova de Lisboa (FCSH/UNL) in Portugal, aimed at studying the symbolism of red and white wines related to King's rebirth and iconography on the ancient Egyptian royal tombs, considering her previous analyses of residue samples from the three amphorae found in Tutankhamun's Burial chamber, and the position of these amphorae around the sarcophagus containing the mummified body of the King (a white wine to the east, a red wine to the west and the *shedeh* to the south).

Dr. Guasch stayed one-year (2007-2008) in Egypt for bibliographical research at the libraries of Institut Français d'Archeologie Orientale (IFAO) and Rare Books and Special Collections Library of the American University in Cairo (AUC), where she investigated religious aspects of wine offerings and religion changes after the Amarna Period (around 1350 BC).

The results suggest that these wines in Tutankhamun's Burial chamber were for his three-step transfiguration as Osiris-Ra: the red wine on the evening, the white wine in the morning and the highly appreciated *shedeh* for his nocturnal trip in the southern sky. Meanwhile, the rest of wines found in the Annexe chamber were offerings of the usual kind for sustenance in the afterlife.

The results allowed her to go even further into the investigation of Tutankhamun's magical bricks, which were protectors for the tomb's ritual closing, and their different orientation in the Burial chamber.

Four magical bricks had been exceptionally found untouched on their niches on the four walls in Tutankhamun's Burial chamber but they did not follow to the instructions of the Book of the Dead to three of the four cardinal points (east, west and south), and this was unexplained. Dr. Guasch's study relates this with the geographic orientation of the three amphorae (E, W and S) and the results indicate they were reoriented to strengthen the Osirian protection for the King's rebirth at the end of the Amarna Period.

Furthermore, she investigated the typology of New Kingdom wine-jars and compared them to European legislation for wines, revealing that well-established rules regarding presentation and labelling of wines existed already in ancient Egypt that might be compared to modern guidelines.

Dr. Guasch's second post-doctoral stay (2010-2011) at FCSH/UNL had two main objectives: (1) identify the raw material of the sample from Tutankhamun's alabaster amphora Carter nº 339 (JE 62314 at Cairo Museum); and (2) study the three animal beds found at the Antechamber of Tutankhamun's tomb.

In sample Carter no 339, a mixture of asphalt and oil has been identified through XRF and Raman analysis under the direction of Dr. Maria João Melo, specialist on medieval paintings, at the Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa (Portugal); further research to identify the oil compounds through gas chromatography mass spectrometry in tandem (GC/MS/MS) technique is being developed in collaboration with Dr. Jaap Boon at Amolf Institute in Amsterdam (The Netherlands). Dr. Guasch has also studied the symbolism of Tutankhamun's three animal-shaped beds in relation to the King's three-step resurrection.

During her post-doc stay in Portugal, Dr. Guasch gave classes on Cultural and Scientific history of Ancient Egypt to Masters' Degree students in Egyptology (first semester 2010-2011, 4h per week) at FCSH/UNL and collaborated in the project (2010-2011) for training

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Portuguese specialists in Egyptology and new techniques applied to archaeology, funded by Fundação Gulbenkian in Lisbon. Dr. Guasch was also a member of the jury in 2 Masters' degree (2008) and 1 PhD dissertation (2009) on Egyptology at FSCH/UNL.

Post-doctoral research transfer of technology:

The results were published in 5 *peer-review* articles in top Egyptology and World Archaeology journals and international conference proceedings.

Guasch-Jané, M.R. "The meaning of wine in Egyptian tombs: the three amphorae from Tutankhamun's burial chamber", *Antiquity* 85, 329 (2011): 851-58; Guasch-Jané, M.R. The Osirian orientation of Tutankhamun's magical bricks, *JARCE* 48 (2012): 111-18; Guasch-Jané, M.R. "The ritual use of the three animal-shaped beds in Tutankhamun's antechamber", *JARCE*, accepted; Guasch, M.R. On Egyptian wine marketing, *BAR* S2131 (2010): 57-63; Guasch-Jané, M.R. 2014. On the orientation of the magical bricks in Tutankhamun's burial chamber, *Proceedings of the Fourth International Congress for Young Egyptologists: Cult and Belief in Ancient Egypt*, Sofia (Bulgaria), September 22-25 (2012): 88-96.

Dr. Guasch has presented the results of the research in 5 international congresses:

- First International Tutankhamun GEM conference: Moving & Displaying, Cairo (Egypt), May 10-14th 2015;
- Fourth International Congress for Young Egyptologists: Cult and Belief in Ancient Egypt, Sofia (Bulgaria), September 22-25th 2012;
- Third British Egyptology Congress in London, (UK), September 11-12th 2010;
- IV Iberian Congress for Egyptologists in Lisbon (Portugal), September 13-17th 2010;
- Third International Congress for Young Egyptologists: Commerce and Economy in ancient Egypt, Budapest (Hungary), September 25-27th 2009.

PRINCIPAL INVESTIGATOR OF THE 'IREP EN KEMET' RESEARCH PROJECT

Since 2011 Dr. Guasch is leading the 'Irep en Kemet', Wine of Ancient Egypt, project to study the ancient Egyptian wine culture through all the archaeological evidences: iconography, texts, objects and organic remains.

The first phase 'Study of viticulture and oenology in Egyptian tombs' is a scientific project (January 2011-April 2014) at the Faculdade de Ciências Sociais e Humanas, Universidade Nova de Lisboa (Portugal) that aimed to document all the viticulture and oenology scenes of the ancient Egyptian private tombs, analyze and interpret the collected data (iconography and texts) to better understand the different aspects of wine production in ancient Egypt and reveal the importance of the ancient Egyptian wine culture legacy in the Mediterranean region.

The project directed by Dr. Guasch (PI) was gained through the competitive funding program "Research and Development Projects in All scientific domains 2009" and funded by the Foundation for Science and Technology (PTDC/HIS-ARQ/112562/2009, 90.000€) of the Ministry of Education and Science in Portugal.

The project is a comprehensive resource for research on viticulture and winemaking in ancient Egypt.

The project has developed a bibliographic database for wine, viticulture and winemaking in ancient Egypt, and a scene-detailed database for viticulture and wine production depicted on the walls of the ancient Egyptian private tombs from the Old Kingdom Period (2575-2150 BC) until the Graeco-Roman Period (332 BC-395 AD).

THE BIBLIOGRAPHIC DATABASE: A database with 200 records has been created including articles, books, book chapters, theses (MA/MS and PhD), essays, congresses proceedings, online articles and websites.

THE SCENE-DETAILED DATABASE:

The database of the ancient Egyptian viticulture and winemaking scenes includes 92 records of tombs, dated from the Old Kingdom Period (4th Dynasty) until the Late Period (30th-31st Dynasty).

The scenes are presented as depicted in different ancient Egyptian necropolises in Lower Egypt (Sais/Sa El-Hagar, Giza, Abu Sir, Saqqara and Qaret Helwa), Middle Egypt (Maidum, Dishasha, Beni Hassan, Tuna El-Gabal, El-Bersha, El-'Amarna, Meir and Deir El-Gabrawi), and Upper Egypt (El-Hawawish, El-Assasif, Dira' Abu El-Naga, El-Khokha, Sheikh 'Abd El-

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Qurna, Deir El-Medinah, Qurnet Mura'i, El-Kab and Qubbet El-Hawa).

The database records includes the following items for each scene:

1. RECORD NUMBER
2. SCENE DETAILS
 - 2.1. Annotation: scene description
 - 2.2. Scene type
 - 2.3. Scene condition
 - 2.4. Text (ancient Egyptian text accompanying the scene) and translation
 - 2.5. Dating: Period, Dynasty and King
 - 2.6. Location: a) provenance, b) present location
 - a) Provenance: Governorate, Archaeological site, Geographic coordinates, Tomb name, Tomb number and Location inside tomb
 - b) Present location: Same as provenance and Museum, I) Location inside museum, II) Museum inventory number) and Others
3. TOMB INFORMATION
 - 3.1. Type
 - 3.2. Tomb owner: a) Names, b) Titles

This photographic, documentary and analytical study helps assess the current status of the viticulture and winemaking scenes in the ancient Egyptian private tombs. Hence it is important for the future documentation and conservation of the archaeological heritage of Egypt.

Project Team

SOFIA FONSECA: Portuguese archaeologist and Egyptologist. Sofia obtained her BA in archaeology (1997) at Coimbra University (Portugal), and an MA in Oriental Studies-Egyptology (2000) at the Autonomous University of Barcelona (Spain). She worked (2001-2010) as main field archaeologist and Assistant to the project director (2008-2010) in the 'Apries Palace project in Memphis' from Universidade Nova de Lisboa (Portugal) and was a staff member (2004-2007) of Món-3 Foundation (Spain) in the 'Tichitt-Walata cities' Project in Mauritania. Following this experience, in 2008 she co-founded 'Teiduma, Cultural Cooperation', a technical consulting that promote culture in all its dimensions. She is doing her PhD on the viticulture and winemaking scenes depicted in the Theban private tombs, under the supervision of Dr. Guasch Jané, within the project 'Study of viticulture and oenology in the Egyptian tombs' PTDC/HIS-ARQ/112562/2009 (2011-2014) at the Faculdade de Ciências Sociais e Humanas, Universidade Nova de Lisboa, Portugal.

MAHMOUD IBRAHIM: Egyptian Egyptologist and linguist. Mahmoud obtained his BA in Egyptology (1998) at Cairo University (Egypt), and a MA in Egyptology and linguistics (2006) at Basel University (Switzerland). He served as Curator (2002-2004) at the Egyptian Museum in Cairo, and worked as Egyptologist (2006-2013) at the Egyptian Center for Documentation of Cultural and Natural Heritage (CULTNAT) of Egypt. He has been awarded a couple of scholarships in Egyptology and Linguistics under the "Fondation de l'Ecole Normmale Superieure" (2008) in Paris, the 'Swiss Federal Commission for Scholarships for Foreign Students' (2004-2006) in Basel, and the 'Robert Anderson Research Charitable Trust' (2003 and 2004) in the United Kingdom. He was involved in a number of research projects in the Egyptology field such as 'ISSEMM, Institutional Support to Supreme Council of Antiquities for Environmental Monitoring and Management of Cultural Heritage sites: applications to Fayoum Oases and North Saqqara Necropolis project' (2009-2010) and 'Study of viticulture and oenology in the Egyptian tombs' PTDC/HIS-ARQ/112562/2009 (2011-2014) at the Faculdade de Ciências Sociais e Humanas, Universidade Nova de Lisboa, Portugal.

Research Project Methodology

The research developed during 2011 and 2012 by the project team in the most important Egyptological archives gives a complete knowledge of the bibliographic (books, papers, thesis) and visual (drawings, squeezes, photographs) documentation that exists concerning the ancient Egyptian wine culture subject.

The project's photographic mission in Egypt during 2013 allowed the team to have access to almost all the tombs with scenes of viticulture and winemaking to study the images and

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associated text, and to identify unpublished data. It also permitted to detect the current condition of the already published scenes.

The research project methodology includes three main stages: (1) research and data collection analysis of the Egyptological archives and historical documentation to list the Egyptian tombs with viticulture and winemaking scenes and the identification of unpublished ones; (2) compilation of documents including all the literature and studies on wine and viticulture and wine production in ancient Egypt to create a database; and (3) compilation of all the information related with the Egyptian tombs with scenes of viticulture and oenology, location and tomb owner names and titles to create a scene-detail database.

This information was obtained by consulting the files of the Griffith Institute and Sackler Library at Oxford University, the Egypt Exploration Society (EES) and the Department of Ancient Egypt and Sudan at the British Museum in London (UK). Also of great importance was the research made on-line in the libraries of the Institut Français d'Archéologie Orientale (IFAO) and the German Archaeological Institute (DAIK) in Cairo (Egypt), the Theban Mapping Project website, the Online Egyptological Bibliography (OEB), the Brooklyn Museum library (USA), the Aegyptus catalogue of München University (Germany), among others.

Furthermore, the Porter and Moss books collection [1852-1941] containing all existing data on the Egyptian tombs and Egyptological journals were consulted; as well as the special collections, such as Journal of Egyptian Archaeology (JEA), Excavation Memoirs and Archaeological Survey Memoirs of the EES, Mémoires de l'Institut Français d'Archéologie Orientale (MIFAO) and Bulletin de l'Institut Français d'Archéologie Orientale (BIFAO).

Following the archives work, a bibliographic database with 200 entries has been created including articles, books, book chapters, academic theses (MAs and PhD), essays, congresses proceedings, online articles and websites. A scene-detailed database with 92 records has also been created for the viticulture and winemaking scenes in the private tombs of ancient Egypt.

Photographic Mission in Egypt

In 2013 the project team, led by Dr. Guasch, carried out a photographic mission, with the permission of the Permanent Committee and Foreign Mission Affairs of the Egyptian Supreme Council of Antiquities (SCA), to the Egyptian necropolises that include the identified tombs to check the information obtained from historical documents and to take updated photographs of the scenes. The photographic mission work was divided into three phases, based on the geographic location: Upper Egypt, Middle Egypt and Lower Egypt.

The FIRST PHASE took place in June 2013 in the archaeological sites of Upper Egypt, where the project documented a total of 52 tombs: 49 in Luxor, 2 in Aswan and 1 in Sohag. Our previous research resulted in the identification of 11 unpublished scenes in the Theban tombs (Luxor), and another 3 more tombs have not been located because the information regarding their location has been lost.

The SECOND PHASE of the mission took place in late November 2013 in Middle Egypt, where a total of 12 tombs have been documented: 2 in Assiut, 8 in Miniya and 2 in Beni Suef.

The THIRD PHASE took place in December 2013 in Lower Egypt, where a total of 23 tombs have been photographed: 10 in Giza necropolis, 11 in Saqqara necropolis, 1 in Abu Sir and 1 in Bahariya oasis.

The project's successful photographic mission allowed taking detailed, high-resolution photos of the viticulture and winemaking scenes, which will be presented in the scene-detail database. It also gave a great opportunity to explore the tombs, in which these scenes were depicted and learn about their contexts and current conditions.

The updated photos taken will certainly help the scholarly community to study, analyse and better understand the viticulture and winemaking processes in Ancient Egypt. It will also be of great importance for scholars and institutions interested in the documentation of the ancient Egyptian heritage.

Project Outcomes

The project has achieved its main objective: the documentation of the corpus of viticulture and winemaking scenes presented in the ancient Egyptian private tombs. This corpus, in a

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form of a comprehensive scene-detailed database, will serve as a tool not only for further research on the subject of wine in Ancient Egypt but also for heritage preservation studies and programs.

Being the images photographed in the same time frame allow being more aware of any damage or deterioration they might suffer in the future. In addition, during the project research, 11 unpublished scenes were identified and photographed, which are published for the first time.

The project outcomes are presented as *peer-review* articles, books, and papers in congresses, conferences, lectures and workshops in Portugal, France, Spain, Brazil and Cyprus. Furthermore, the project was also presented in the international media (radio and television).

The 'Irep en Kemet' Project Website

The project's website [www.wineofancientegypt.com] promotes visibility to the study of wine in ancient Egypt as well as the dissemination of the archaeological knowledge regarding wine in Antiquity to the scientific and non-scientific community. The website's contents include general information about the project, team members, publications, bibliographies, news, links, collaborations and contacts. The results of the project's research are updated through the project website. The research results published in peer-reviewed journals, conferences proceedings, magazines, and presented in communications and lectures will be also included, with the publisher's previous authorisation.

The creation of the website in 2013 has been financially supported by Vinseum, Museu de les Cultures del Vi de Catalunya [www.vinseum.cat] (3.000€) and developed by Sistemes de Gestió del Patrimoni (SGP) [www.sgponline.net].

Nowadays, the second phase of the project's website is being developed: a digital repository (using Omeka App) to give access to the bibliographic and scene-detailed databases relevant to viticulture and winemaking in ancient Egypt, as well as the scenes in tombs. Furthermore, an interactive map with all the tombs studied, which will be georeferenced, and an actualization of the applications and software will be made.

The development of the project website in 2015 by SGP has been financially supported by Perelada Fine Estates (2.900€) [www.perelada.com/en].

FUNDING ID

Competitive funding

Institution: Fundação para a Ciência e a Tecnologia, Ministry of Education and Science, Portugal

Program: Research and Development Projects in all Scientific Domains-2009

Title: Study of viticulture and oenology in Egyptian tombs Project number: PTDC/HIS-ARQ/112562/2009 PI: Maria Rosa Guasch Jané Amount: 90.000 €

Years: 2011-2014

Host Institution: Faculdade de Ciências Sociais e Humanas, Universidade Nova de Lisboa.

Additional Research Unit: Centro de Estudos Arqueológicos das Universidades de Coimbra e Porto (CEAUCP), Faculdade de Letras, Instituto de Arqueologia, Coimbra (Portugal)

Institution: Fundação Calouste Gulbenkian, Portugal

Program: Innovative Projects in the Educational Domain 2010

Title: Projecto de formação de especialistas portugueses em egiptologia e em novas técnicas aplicadas à arqueologia Amount: 40.240€ Years: 2010-2011

PI: Maria Helena Trindade Lopes

Host Institution: Faculdade de Ciências Sociais e Humanas, Universidade Nova de Lisboa.

Private funding

Institution: Perelada Fine Estates, Spain

Aim: Second phase development of the *Irep en Kemet* project website [www.wineofancientegypt.com]

PI: Maria Rosa Guasch Jané Amount: 2.900 € Year: 2015

Institution: Vinseum, Museu de les Cultures del Vi de Catalunya, Spain

Aim: Create the *Irep en Kemet* project website [www.wineofancientegypt.com]

Project: Study of viticulture and oenology in the Egyptian tombs

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PI: Maria Rosa Guasch Jané Amount: 3.000 € Year: 2013

Institution: Fundació para la Cultura del Vino, Spain
Title: Wine in Ancient Egypt: study of the colour of wine
Project number: Fundació Bosch i Gimpera (UB) FBG302298
Amount: 95.500€ Years: 2003-2005
PI: Rosa M. Lamuela Raventós
Host Institution: Nutrition and Food Science Department, Facultat de Farmàcia (UB)

Institution: Codorníu Group, Spain
Title: Investigación sobre el origen de la viña y el vino, consumo y efecto nutricional del vino en el antiguo Egipto Project number: Fundació Bosch i Gimpera (UB) FBG301266
Amount: 45.000€ Years: 2001-2003 PI: Rosa M. Lamuela Raventós
Host Institution: Nutrition and Food Science Department, Facultat de Farmàcia (UB)

KNOWLEDGE TRANSFER AND DISSEMINATION

The Irep en Kemet Project Web Page

The project's website [www.wineofancientegypt.com] has been created with the financial support of Vinseum (2013) to disseminate the research results, databases, and news about the research work. The project website, developed by Sistemes de Gestió del Patrimoni (SGP) [www.sgponline.net], promotes visibility to the study of wine in ancient Egypt as well as the dissemination of archaeological knowledge regarding wine in Antiquity.

The website's contents include general information about the project, team members, publications, bibliographies, news, links, collaborations and contacts. The research results, published in peer-reviewed journals, conferences proceedings, magazines, and presented in communications and lectures to the scientific and non-scientific community will be also included.

The project's research results are being updated through the new website [www.wineofancientegypt.com], financially supported by Perelada Fine Estates (2015) and developed by SGP.

In this second phase of the website access to databases, photographs and an interactive georeferenced tombs map including all the Egyptian archaeological sites relevant to viticulture and winemaking will be available.

International Press Conference:

Dr. Guasch presented the PhD results "Scientific research on archaeological residues from ancient Egyptian wines" to international press at The British Museum, London (UK), 26 October 2005, in an event funded by Instituto de Comercio Exterior (ICEX) of the Spanish Ministerio de Economía y Competitividad and Fundació para la Cultura del vino. Introduced by Mr. Julián Chivite, President of Fundació para la Cultura del Vino, and Professor Patrick McGovern, expert on archaeological samples at Pennsylvania University (USA).

She was later invited to present the results at the Department of Conservation and Scientific Research, with attendance of the curators of the Department of Ancient Egypt and Sudan and the British Museum's director.

Communications to international congresses presented in 2015:

- Guasch-Jané, M.R., Fonseca, S., Ibrahim, M. "The complete corpus of viticulture and winemaking scenes from the ancient Egyptian private tombs", XI International Congress of the Egyptologists, Florence (Italy), August 23rd-30th 2015.
- Guasch-Jané, M.R. "Tutankhamun's wines: an analytical and symbolic study", First International Tutankhamun GEM conference: Moving and Displaying, Cairo (Egypt), May 10th-14th 2015.
- Fonseca, S., Guasch-Jané, M.R., Ibrahim, M. "African heritage protection through new methods and technologies: the 'Irep en Kemet' project database", 16th Cambridge Heritage Seminar "African Heritage Challenges: Development and Sustainability", Cambridge (UK), May 15th-16th 2015.

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Lectures and classes by invitation (most relevant):

- La cultura i el simbolisme del vi a l'antic Egipte: Els vins de la cambra sepulcral de Tutankhamon. Continuing Education Course in Paleopatologia 2014-2015, Acadèmia de Ciències Mèdiques de Catalunya i Balears, Barcelona (Spain), March 18th 2015.
- El vi de Tutankhamon: el projecte Irep en Kemet (El vi de l'antic Egipte). Cultural Experiences 2014-2015, Castell de Peralada Museum, Peralada (Spain), November 14th 2014.
- The *Irep en Kemet* project. El Cellar de Can Roca Restaurant, Girona (Spain), November 27th 2013.
- La viticultura y la enología en el antiguo Egipto: Estudio de las escenas presentes en las paredes de las tumbas. XI Congreso de Museos del vino de España: El enoturismo como oportunidad, Vinseum, Vilafranca del Penedès (Spain), November 27th-29th 2013.
- History of wine in ancient Egypt. Club Torres lectures in 7 sessions organized by Torres Winery at School of Tourism CETT of the Universitat de Barcelona (Spain), June and July 2011.
- Tres vinos en la transfiguración de Tutankhamón para su renacimiento. Portuguese Egyptological Society, Lisbon (Portugal), December 2nd 2008.
- Buscando los inicios de la cultura Mediterránea: Egipto. I National Congress *El Minifundio como defensa del ecosistema Mediterráneo* 2008, Universitat d'Alacant, Muro (Spain), April 26th 2008.
- El vino en el Antiguo Egipto. Master en Cultura e Història de la Alimentación (2006-2007), Facultat de Geografia i Història, Universitat de Barcelona (Spain), April 16th 2007.
- El vino en el antiguo Egipto, Jornadas Vino y Cultura Mediterránea 2006, Universidad de Alicante (Spain), December 12th 2006.
- Scientific research on samples from Ancient Egyptian wines, Department of Conservation, Documentation and Science, The British Museum, London (UK), September 13th 2006.
- Investigación en muestras arqueológicas: El vino en el antiguo Egipto. XXII Semana Universitaria del vino 2006, Escuela Universitaria de Ingenieros Técnicos Agrícolas, Universidad Complutense de Madrid (Spain), March 27th 2006.
- Recerca científica en residus arqueològics: El vi a l'antic Egipte. Introducing Opera Aïda, Fnac L'Illa, Barcelona (Spain), February 10th, 2006.

Pedagogic initiatives to students:

- Dr. Guasch has presented the research project "Study of the viticulture and oenology in Ancient Egypt" to 800 undergraduate students in a stand entitled "Study of wine in Ancient Egypt" within the Studies and Research in Science and Cooking Unit of the Food and Nutrition Torribera Campus, Universitat de Barcelona at the **KNOWLEDGE FAIR 2014** at Berga (Spain) Swedish Pavilion. Organized by the Barcelona Knowledge Campus (BKC) led by Universitat de Barcelona (UB) and Universitat Politècnica de Barcelona (UPC), the Knowledge Fair 2014 aimed to present the leading research projects related to science and technology developed at those leading universities to undergraduate students. The main objective is to increase youth interest in research and awake scientific vocations demonstrating that science is accessible to everyone.
- Lecture "History of wine in Ancient Egypt", addressed to scholars presenting the research results and personal experience in Egypt. Pau Casals School, Montmeló, 18th May 2015.

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The results of Dr. Guasch research have been reported in more than 200 citations in the media, among which stand out the following:

A) Reports and interviews in professional journals:

- World Archaeology (UK), "Tutankhamen's last drink", October 26th 2005, Issue 14, <http://www.world-archaeology.com/news/tutankhamens-last-drink/>
- Wine Spectator (USA), "King Tut was a red wine drinker, scientists say", March 18th 2004. http://www.winespectator.com/webfeature/show/id/King-Tut-Was-a-Red-Wine-Drinker-Scientists-Say_21937
- Scientific American (USA), "King Tut drank red wine, research reveals", March 22nd 2004. <http://www.scientificamerican.com/article.cfm?id=king-tut-drank-red-wine-r>
- Science News (USA), "King Tut's wine travels", October 8th 2011. http://www.sciencenews.org/view/generic/id/334288/title/News_in_Brief_Humans
- Science Daily, American Chemical Society (USA), "King Tut liked red wine", March 26th 2005. <http://www.sciencedaily.com/releases/2005/03/050326001121.htm>
- Memphis Archaeological and Geological Society (USA), "Clues to King Tut's white wine", January 7th 2006. http://www.memphisgeology.org/ar_tuts_white_wine.htm
- Revista Vinos de España, "El vino en el antiguo Egipto: el secreto está en las ánforas", no. 56, 2006: 49-51.
- Jornal do Vinho (Brasil) "O segredo da adega na tumba de Tutancâmon", February 13th 2012. <http://jornaldovinho.com.br/novo/o-segredo-da-adega-na-tumba-tutancamon/>
- Revista Bon Vivant (Brasil) 13, 144 (2011): 33-34.

B) Reports and interviews in international media:

- BBC news (UK) "King Tut's tippie was red wine", October 26th 2005. http://news.bbc.co.uk/2/hi/middle_east/4379286.stm
- The Times (UK) "Was a glass of Egyptian red King Tut's real poison?", October 27th 2005; "Glass of white wine for King Tut", February 16th 2006. <http://www.thetimes.co.uk>
- The Independent (UK) "Tutankhamun's tiple is uncovered by scientist -vintage red wine", October 27th 2005. <http://www.independent.co.uk/>
- The Guardian (UK) "Tutankhamun's top tippie", October 26th 2005. <http://www.guardian.co.uk/lifeandstyle/2005/oct/28/foodanddrink1?INTCMP=SRCH>
"The toast of Tutankhamen", November 13th 2005. <http://www.guardian.co.uk/lifeandstyle/2005/nov/13/foodanddrink4>
- USA Today (USA), "King Tut drank red wine, researcher says", October 26th 2005. http://www.usatoday.com/tech/science/discoveries/2005-10-26-tut-wine_x.htm
"White wine turns up in King Tutankhamen's tomb", March 29th 2006. http://www.usatoday.com/tech/science/columnist/vergano/2006-05-29-tut-white-wine_x.htm
- The New York Times (USA), "King Tut red", March 30th 2004. <http://www.nytimes.com/2004/03/30/science/observatory.html>
- Houston Chronicle (USA), "Tut mystery solved: his wine was red", October 27th 2005. <http://www.chron.com/default/article/King-Tut-mystery-solved-His-wine-was-red1951008.php>
- Times of India (India), "Gimme red!", November 8th 2005, <http://timesofindia.indiatimes.com/city/bangalore-times/Gimme-red/articleshow/1287688.cms>
- ABC (Australia), "Tutankhamen's tomb was awash with red wine", March 23rd 2004. <http://www.abc.net.au/science/articles/2004/03/23/1071649.htm>
- El Universal (Venezuela), "Tutankamón tenía vino tinto en su tumba", November 15th 2005. http://www.eluniversal.com/2005/11/15/ten_art_15406D.shtml
- Spiegel on-line (Germany), "Tut-ench-Amun liebte rod wein", March 17th 2004. <http://www.spiegel.de/wissenschaft/mensch/alkohol-im-grab-tut-ench-amun-liebte-rotwein-a-291005.html>
- Folha de Sao Paulo (Brasil), "Vinhos enterrados com Tutancâmon serviam para levá-lo aos deuses", October 31st 2011. <http://folha.com/no999343>
- Radio interview: Radio Francia Internacional in Paris, November 19th 2005.
- Radio interview: Projectos Globais de Media (PGM) Lda, radio program about sciences, projects and scientific research initiatives in Portugal for the University of Trás os Montes e Alto Douro, December 17th 2013. Programs of 50 minutes to be issued from January 2014 in 30 local radios in Portugal and other countries with Portuguese as Official Language.

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C) Radio, television and Spanish press:

The research results have been disclosed in relevant newspapers but also in radio and television, such as:

- Empordà TV: Report on the research project "Projecte el vi a l'antic Egipte". December 2015
http://www.empordadigital.cat/index.php?option=com_k2&view=item&id=929:projecte-del-vi-al-antic-egipte-gracies-a-celler-perelada&Itemid=670
- RTVVilafranca, "Vinseum s'implica en diversos projectes que investiguen sobre l'antiguitat del vi i la viticultura" <http://www.rtvvilafranca.cat/actualitat/article/vinseum-simplica-en-diversos-projectes-que-investiguen-sobre-lantiguitat-del-vi-i-la-viticultura>, November 28th 2013.
- La Vanguardia, "Vino tinto para Tutankamon", 20th March 2004: 34; "El ajuar funerario de Tutankamon tenía ánforas con vinos tintos y blancos", 30th May 2006: 32.
- El País, "A Tutankamón le gustaba el tinto", October 27th 2005.
http://elpais.com/diario/2005/10/27/agenda/1130364001_850215.html
- El Nou 9, "Els egipcis etiquetaven les àmfores de vi", no.1447, Year XVI, May 31st 2004: 36.
- El Periódico de Catalunya, "Al faraón Tutankamón le iba el vino tinto", October 29th 2005: 42. <http://www.elperiodico.com>
- Interviews in radio programs such as Radio Barcelona (program "L'hora L", 18th November 2005), Catalunya Ràdio (program "Sense fronteres", 2nd November 2005), Cadena COPE, Onda Rambla (program "Vivir mejor", 25th March 2006).
- Video RTVE, TVE Tecnoticias 2006 (Smartplanet), <http://www.youtube.com/watch?v=2ByG8jtFg8w>

MAJOR INTERNATIONAL COLLABORATIONS OF THE 'IREP EN KEMET' PROJECT

- Professor Pierre Tallet, Director of Mondes Pharaoniques laboratory (within the UMR 8167 'Orient et Méditerranée') at Université Paris-Sorbonne (UPS4), is the main specialist on Ancient Egyptian wine inscriptions. Prof. Tallet is Director of three archaeological missions (UPS4-IFAO) in Egypt: Ayn Soukhna, South Sinai and Wadi el-Jarf and is studying and publishing the corpus of wine inscriptions from Deir el-Medina archaeological site in the Theban necropolis.
Aim: Document the corpus of ancient Egyptian wine jars and their inscriptions.
- Partnership (since 2013) with the Archaeological Institute of America (AIA) to search for new opportunities and funding for the project: [<http://archaeological.org/fieldwork/cp/10941>]
- Scientific advisor of UB-Bullipèdia Unit (since 2013) [www.bullipedia.com] a global website on food and culture created by the famous chef of "El Bulli" restaurant, Ferran Adrià, and directed by Dr. Pere Castells at the Food and Nutrition Torribera Campus of the Universitat de Barcelona, with whom we have created the "Observatory of Ancient Egyptian Food" for studying ancient food and beverages found in Egyptian archaeological sites.
Aim: Documentation of the origins of food and wine in Antiquity.
- Signature of a collaboration agreement (from 2013) with Vinseum, Museu de les Cultures del Vi de Catalunya, [<http://www.vinseum.cat>] to create and develop the project web page: www.wineofancientegypt.com and publication of the book (2015) "The production of wine in ancient Egypt" aimed at the general public. We are also organizing an international exhibition on ancient Egyptian wines presenting our photographic archive and pieces from museums.

MEMBERSHIP OF SCIENTIFIC SOCIETIES

Dr. Guasch is a member of the following international scientific societies:

- | | |
|------------------|--|
| 11/2001- Present | Egypt Exploration Society, United Kingdom - Associated Membership |
| 01/2008- Present | International Association of Egyptologists - Full Membership (Professional Member) |