

Teresa Afonso do Paço

1. ACADEMIC DEGREES

Ph. D. in Agronomy – Instituto Superior de Agronomia – Technical University of Lisbon – 2004

Four disciplines of the Master in Irrigation Engineering and Agricultural Resources (part of doctoral preparation, Rural Eng. Dep., ISA - UTL) 1997

Agronomy degree, ISA – UTL, 1991

Course on Tropical Agronomy, ISA-UTL, 1992

2. PRESENT SITUATION

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| Since July 2009 | ISA, UTL | Lisbon, PT |
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Researcher at Instituto Superior de Agronomia in the frame of the *Ciência 2008* initiative
(Portuguese Foundation for Science and Technology, FCT. ref. C2008 - ISA/CEER-A, Centro de Estudos de Engenharia Rural, Unit 1- Water, Natural Resources and Climate)

3. SELECTED PUBLICATIONS

Thesis

Paço, M. T. G. A. (2003). Modelação da evapotranspiração em cobertos descontínuos - Programação da rega em pomar de pessegueiro. Ph. D. thesis, Technical University of Lisbon, Instituto Superior de Agronomia, Lisbon, 227 p.

Book chapters

Ferreira, M.I., Paço, T.A., Silvestre, J., Silva, R.M. (2008). Evapotranspiration estimates and water stress indicators for irrigation scheduling in woody plants. In: *Agricultural Water Management Research Trends*. Ed. Magnus L. Sorensen. Nova Science Publishers, Inc., New York, USA. (https://www.novapublishers.com/catalog/product_info.php?products_id=6658)

Abreu, J.M., Paço, M.T.A., Acamovic T., Murray, I. (1992). NIR calibration for nutritional value of a diverse set of Portuguese forage crops. In: *Making Light Work - Advances in Near Infrared Spectroscopy*. Ed. by I. Murray and I. A. Cowe. VCH Publishers, New York, USA, p. 309-313.

Papers in international scientific periodicals with referees (ISI)

Paço, T.A., David, T.S., Henriques, M.O., Pereira, J.S., Valente, F., Banza, J., Pereira, F.L., Pinto, C., David, J.S. (2009). Evapotranspiration from a Mediterranean evergreen oak savannah: the role of trees and pasture. *Journal of Hydrology*, 369: 98-106 (doi:10.1016/j.jhydrol.2009.02.011).

González-Altozano, P., Pavel, E.W., Oncins, J.A., Doltra, J., Cohen, M., Paço, T.A., Massai, R., Castel, J.R. (2008). Comparative assessment of five methods of measuring sap flow in peach trees. *Agricultural Water Management*, 95: 503-515 (doi:10.1016/j.agwat.2007.11.008).

Pereira, J. S., Mateus, J. A., Aires, L. M., Pita, G., Pio, C., David, J. S., Andrade, V., Banza, J., David, T. S., Paço, T.A., Rodrigues, A. (2007). Net ecosystem carbon exchange in three contrasting Mediterranean ecosystems – the effect of drought. *Biogeosciences*, 4: 791-802.

Paço, T.A., Ferreira, M.I., Conceição, N. (2006). Peach orchard evapotranspiration in a sandy soil: comparison between eddy covariance measurements and estimates by the FAO 56 approach. *Agricultural Water Management* 85 (3): 305-313 (doi:10.1016/j.agwat.2006.05.014).

Papers in Conference Proceedings (ISI)

- Conceição, N., Paço, T.A., Silva, A.L., Ferreira, M.I. (2008). Crop coefficients for a pear orchard (*Pyrus communis* L.) obtained using eddy covariance. *Acta Horticulturae* (ISHS) 792:187-192 (http://www.actahort.org/books/792/792_20.htm).
- Silva, R.M., Paço, T.A., Ferreira, M.I., Oliveira, M. (2008). Transpiration of a kiwifruit orchard estimated using the Granier sap flow method calibrated under field conditions. *Acta Hort.* (ISHS) 792:593-600 (http://www.actahort.org/books/792/792_70.htm).
- Paço, T.A., Conceição, N., Ferreira, M.I. (2004). Measurements and estimates of peach orchard evapotranspiration in Mediterranean conditions. *Acta Hort.* (ISHS), 664:505-512.
- Ferreira, M.I., Paço, T.A., Silvestre, J. (2004). Combining techniques to study evapotranspiration in woody crops: application to small areas – two case studies. *Acta Hort.* (ISHS), 664:225-232.
- Isbérie, C., Cabibel, B., Valancogne, C., Paço, T.A. (2004). Using information from sap flow measurements to improve soil adaptability to drip irrigation in orchards. *Acta Hort.* (ISHS), 664: 333-340.
- Garcia, A., André, R. G. B., Ferreira, M. I., do Paço, T. (2000). Diurnal and seasonal variations of CWSI and non-water-stressed baseline with nectarine trees. *Acta Hort.* (ISHS), 537: 415-421.
- Massai, R., Remorini, D., Ferreira, M. I., Paço, T. A., (2000). Sap flow in peach trees during water stress and recovery in two environmental conditions. *Acta Hort.* (ISHS), 537: 351-358.
- Snyder, R. L., Paw U, K. T., Duce, P., Spano, D., Ferreira, M. I., do Paço, T. A., Connel, J.H. (2000). Measuring tree and vine ET with eddy covariance. *Acta Hort.* (ISHS), 537: 53-60.

Publications in Conference Proceedings with referees

- Conceição, N., Paço, T.A., Silva, A.L., Ferreira, M.I. (2005). Determinação de coeficientes culturais em pomar de pêra-rocha na região do Oeste. 1º Congresso de Rega e Drenagem, COTR, Beja, 5-7 December.
- Paço, T.A., Ferreira, M.I. (2004). Medição da evapotranspiração em cobertos descontínuos – necessidades de rega em pomar de pessegueiro. 7º Congresso da Água, Laboratório Nacional de Engenharia Civil (LNEC), APRH, Lisbon, 8-12 March.
- Ferreira, M. I., Silva, R.M., Paço, T. A. (2004). Medição da evapotranspiração em cobertos descontínuos: montado de sobro na região de Lisboa. 7º Congresso da Água, Laboratório Nacional de Engenharia Civil (LNEC), Lisbon, 8-12 March.
- Silva, R. M., Ferreira, M.I., Paço, T.A., Veloso, A., Oliveira, M. (2004). Determinação das necessidades de rega em kiwi na região do Entre Douro e Minho. 7º Congresso da Água, Laboratório Nacional de Engenharia Civil (LNEC), Lisbon, 8-12 March.
- Massai, R., Remorini, D., Ferreira, M. I., Paço, T. A. (1999). Stress idrico e recupero nel pesco in diverse condizioni colturali. *Atti del Convegno Nazionale: "L'agrometeorologia per il monitoraggio dei consumi idrici"*. Sassari, 3-4 November, 229-237.

Papers in national scientific periodicals with referees

- Ferreira, M. I., David, T., Silvestre, J., do Paço, T., Silva, R. (2005). Coeficientes culturais e coeficientes de stress hídrico em cobertos lenhosos: resultados de 10 anos de experimentação em Portugal. Special number of *Revista da Sociedade de Ciências Agrárias de Portugal*, 3/4: 17-33.
- Conceição, N., Paço, T.A., Ferreira, M.I. (2005). Medição e estimativa da evaporação do solo em condições de rega localizada. Special number of *Revista da Sociedade de Ciências Agrárias de Portugal*, 3/4: 77-92.

Other publications

- Pereira, J. S., David, J. S., Paço, T.A., David, T. S., Mateus, J. A., Pita, P.G., Banza, J. (2008). Effects of drought on ecosystem carbon and water fluxes in an evergreen Mediterranean oak woodland. *Geophysical Research*

Abstracts, vol. 10, EGU2008-A-11438, EGU General Assembly 2008 (abstract).

David, T. S., Paço, T.A., Henriques, M. O., Pereira, J. S., Valente, F., Kurz-Besson, C., Pinto, C. e David, J.S. (2007). Evapotranspiração num montado de *Quercus ilex*: as árvores e a pastagem. Reunião do Grupo de Trabalho de Ecologia, Ecofisiologia e Solos Florestais da SECF (Sociedad Española de Ciencias Forestales) "Suelos forestales: nuevas perspectivas en las relaciones suelo-árbol", Salamanca, Spain, 22-23 October 2007 (poster abstract).

Conceição, N., Paço, T.A., Ferreira, M.I. (2007). Coeficientes de cultivo para la variedad de pera Rocha. *Fruticultura Profesional, Especial Peral III*, 168, 41- 46.

Pereira, J.S., Mateus, J.A., Aires, L., Paço, T. A., Pita, G., Pio, C., Banza, J., Andrade, V., Rodrigues, A., David, T. S., Cerasoli, S. and David, J. S. (2006). Effects of altered seasonality and low rainfall in net ecosystem exchange of carbon in three contrasting Mediterranean ecosystems. *Open Science Conference on the GHG Cycle in the Northern Hemisphere. Sissi-Lassithi, Crete, 14-18 November 2006 (abstract).*

Paço, T.A. (2006). Necessidades hídricas em pomar de pessegueiro. In: *Guias de Rega. COTR – Centro Operativo e de Tecnologia de Regadio, Beja.*

Paço, T.A. (2005). Alimentação de equinos em pastoreio. In: *Livro de comunicações do Workshop em Nutrição e Alimentação de Equinos, 9 December, Exponor, Oporto, 24-32.*

Silva, R., Paço, T. A., David, T. S., Rodrigues, M. L., Silva, A., Ferreira, M. I. (2005). Water relations in *Quercus suber* – some results. *IX Congresso Luso-Espanhol de Fisiologia Vegetal, 18-21 September, Évora (poster abstract).*

Paço, T.A., Ferreira, M.I. (2004). Medição da evapotranspiração em cobertos descontínuos – necessidades de rega em pomar de pessegueiro. *Rega e Drenagem, December 2004, 41-48.*

Silva, R.M., Ferreira, M.I., Paço, T.A., Veloso, A., Oliveira, M. (2004). Determinação das necessidades de rega em kiwi na região do Entre Douro e Minho. *Rega e Drenagem, December 2004, 34-40.*

Isbérie, C., Cabibel, B., Valancogne, C., Paço, T.A. (2004). Using information from sap flow measurements to improve soil adaptability to drip irrigation in orchards. *New Ag International, June 2004, 48-49.*

Ferreira, M.I., David, T.S., Silvestre, J., Paço, T.A., Nadezhdina, N., Thomsen, A., Silva, R.M., Silva, A.L. (2004). Sap flow measurements and their scaling up - Granier method. In: *Workshop Water Use of Woody Crops: techniques, issues, modelling and applications on water management. 20-21 May 2004, Ílhavo, Portugal, 6-7 (extended abstract).*

Ferreira, M.I., Paço, T.A., Nadezhdina, N. (2004). Water stress indicators. Use of sap flow measurements for stress diagnosis. In: *Workshop Water Use of Woody Crops: techniques, issues, modelling and applications on water management. 20-21 May 2004, Ílhavo, Portugal, 13-14 (extended abstract).*

Ferreira, M.I., Paço, T.A. (2004). Reference ET and crop coefficients: how good is this approach for woody stands? Use of stress coefficients. In: *Workshop Water Use of Woody Crops: techniques, issues, modelling and applications on water management. 20-21 May 2004, Portugal, 22-23 (extended abstract).*

Paço, T.A., Ferreira, M.I., Conceição, N. (2004). Combination of transpiration & ET techniques – Application on irrigated peach orchards. In: *Workshop Water Use of Woody Crops: techniques, issues, modelling and applications on water management. 20-21 May 2004, Ílhavo, Portugal, 32-33 (extended abstract).*

Silva, R., Ferreira, M.I., Paço, T.A., Veloso, A., Oliveira, A. (2004). Combination of transpiration & ET techniques – Application on kiwi (Determinação das necessidades de rega em kiwi, na região de Entre-Douro e Minho). In: *Workshop Water Use of Woody Crops: techniques, issues, modelling and applications on water management. 20-21 May 2004, Ílhavo, Portugal, 36 (abstract).*

Ferreira, M.I., Paço, T.A., Cohen, M., Oncins, J.A. (1998). Should the radial distribution of sap flow density be considered on the calculation of total sap flow, when using Granier sensors? In: (Morrison, J.L, Domingo, F., Allen, S.J., Eds.) Proceedings 4th International Workshop on Field Techniques for Environmental Physiology. (March 1998, Almeria, Spain): (poster abstract).

4. PARTICIPATION IN SCIENTIFIC RESEARCH PROJECTS

2007 – present PTDC/AGR-AAM/69848/2006
Best management practices for deficit irrigation strategies in vineyards - water stress indicators and grape quality

2006 – 2009 POCI/AGR/59152/2004
Mediterranean woody species of 'montados': surviving the drought

2005 – 2008 GOCE – CT – 2003 - 505572
CARBOEUROPE – Assessment of the European terrestrial carbon balance

2007 -2008 SO2/2.1/F28 SUDOE, INTERREG III B, SUDOE
PRECIRIEG - Réseau d'actions concertées en horticulture pour une conduite de l'irrigation précise et économique en eau en SUDOE

2001 - 2004 EVK1-CT-2000-00079 WATERUSE, UE
WATERUSE – Evaluation of alternative techniques for determination of water budget components in water – limited, heterogeneous land-use systems

2002 – 2004 AGRO 8–8.1 – Exp. Dev. & Dem.
Demonstration of sensors utilization and experimental processes to the determination of irrigation amounts and timing in actinidea

1997 – 2000 FAIR 1-CT-95-0030, UE
Innovative biological indicators to improve the efficiency of water and nitrogen use and the fruit quality in tree crops

5. RELEVANT PROFESSIONAL EXPERIENCE

Nov 2004 - June 2009 ISA, UTL Lisbon, PT
Post-doctoral fellow at Forest Research Center (CEF) with a fellowship supported by FCT.

- First 3-year period working plan: *Evapotranspiration in discontinuous canopied crops: i) applications in irrigated orchards and in Quercus suber 'montado', ii) dissemination and results transfer*
- Second 3-year period working plan: *Evapotranspiration and water use in agricultural and forest Mediterranean ecosystems*

Jan 1997 - Nov 2004 ISA, UTL Lisbon, PT
Research fellow at Agricultural Engineering Dep. (DER)
Ph D student with a fellowship supported by FCT (Oct 1998 - Jan 2003)

1999 - 2006
Teaching

Collaboration in teaching in the following institutions:

- Instituto Superior de Agronomia
- Universidade Nova de Lisboa – Faculdade de Ciências e Tecnologia
- Escola Superior Agrária de Elvas
- Escola Superior Agrária de Beja

6. PEER-REVIEWING

2008

Irrigation Science

2007

Journal of Irrigation and Drainage Engineering

2004

Journal of Experimental Botany

7. COLLABORATION IN THE SUPERVISION OF ACADEMIC WORKS

2007

M. Sc. thesis. Instituto Superior de Agronomia, Universidade Técnica de Lisboa – co-supervisor

8. AWARD

APRH Award for 2004/2005

Section 'Basic and Nature Sciences' (for the Ph. D. thesis)

(Award from Associação Portuguesa dos Recursos Hídricos – APRH, given every two years to research studies contributing in a significant way to the progress of technical and scientific knowledge and to the resolution of national problems, within the water resources domain.)

July 2009