

Partner 5. Instituto de recurso naturales y agrobiologica de Sevilla (IRNASE)

Partner profile

The Instituto de Recursos Naturales y Agrobiología de Sevilla (IRNASE), belonging to the Consejo Superior de Investigaciones Científicas (CSIC), with 85 persons, among them 28 permanent researchers, dedicates its research on water resources in soil-plant-atmosphere systems under Mediterranean conditions, with a specific emphasis on land evaluation at the regional level. The group develops skills in studying soil factors affecting the pesticide fate (pesticide adsorption-desorption, degradation and transport of pesticides) and agricultural practices, such as irrigation, affecting pesticide transport in soil.

Role of the principal scientific personnel in the project

Dr. E. Fernandez will co-ordinate the activities of IRNASE in this project proposal. IRNASE will contribute in the project with a data set on pesticide fate, representative for Sevillian conditions. The group will contribute in the validation of the actual and improved deterministic models, and in the evaluation of the scenarios. This work will involve the realisation of a pesticide risk assessment at the regional scale.

Experience of the scientific personnel involved

Dr. Ing. J.E. Fernández, is senior research scientist and specialised in crop water relations and the use of mathematical models. He participated in the several EU projects such as: "Integrated analysis of water and solute flow to predict the environmental hazard of farm management strategies in the EC (WASTES)", STEP-CT90-0032-C; "Evaluation of the effect of climatic variations on the recharge of aquifers in southern European catchments (ECRASE)", EV5V-CT94-0484; "Using existing soil data to derive hydraulic parameters for simulation models in environmental studies and land-use planning", CHRX-CT94-0639; "HYDROMED – Programme de recherche sur lacs collinaire dans la zone semi-aride du pourtour méditerranéen" IC18-CT96-0091. He will execute the tasks of IRNASE with Dr. F. Moreno, Dr. J. Cornejo, Dr. Hermosin and Prof. Dr. Ing. D. de la Rosa. Dr. Moreno is specialist in Soil Physics, in particular water and solute transport in soils and soil-plant-atmosphere relationships. He has been contractor and/or participant of the following EU projects: "Use and management of land and water" contract nº 50110 (DG-VI), "Effects of irrigation on the soil quality of reclaimed areas in Las Marismas (Spain)", EV4V-0099-C(A). Dr. J. Cornejo and Dr. Hermosin are specialist in surface soil chemistry, applied pesticide chemistry. They were contractor of the EU Project: "Environmental fate of pesticides bound to soil components through abiotic and biotic mechanisms", EV5V-CT94-0470 and he was the Spanish representative in the COST 66 Action Pesticide in the Soil Environment and in the Scientific Committee of MESAEP (Mediterranean Scientific Association for Environmental Protection). Dr. D. de la Rosa, is specialist in land evaluation by using information and knowledge engineering. International Consultant for FAO. Contractor of the EU project "ACCESS: AgroClimate Change and European Soil Suitability", EV5V-CT92-0129; "IMPEL: Integrated Model to Predict European Landuse Environment and Climate", ENV4-CT95-0114; SIDASS: A Spatially Distributed Simulation Model Predicting the Dynamic of Agrophysical Soil State within Eastern and Western European Countries for the Selection of Management Practices to Prevent Soil Erosion", ERBIC-15 CT98-0106

Recent publications

- ANDREU, L., JARVIS, N.J., MORENO, F., VACHAUD, G. (1996). Simulating the impact of irrigation management on the water and salt balance in drained marsh soils (Marismas, Spain). *Soil Use and Management*, 12: 109-116.
- ANGULO-JARAMILLO, R., MORENO, F., CLOTHIER, B.E., THONY, J.L., VACHAUD, G., FERNANDEZ-BOY, E., CAYUELA, J.A. (1997). Seasonal variation of hydraulic properties of soils measured using a tension disc infiltrometer. *Soil Sci. Soc. Am. J.*, 61: 27-32.
- DE LA ROSA, D. (1994). MicroLEIS 3.2: A set of computer programs, statistical models and expert systems for land evaluation. In: *Soil responses to climate changes* (M.D. Rounsevell and P. Loveland, eds.), 205-211. NATO ASI Series, Springer-Verlag, Heidelberg.
- MORENO, F., CAYUELA, J.A., FERNANDEZ, J.E., FERNANDEZ-BOY, E., MURILLO, J.M., CABRERA, F., (1996). Water balance and nitrate leaching in an irrigated maize crop in SW Spain. *Agric. Water Manage.*, 32: 71-83.
- COX, L., WALKER, A., HERMOSIN, M.C. y CORNEJO, J. (1996). Measurement and simulation of the movement of thiazafuron, clopyralid and metamitron in soils. *Weed Res.* 36: 419-429.