

For over 80 years the scientists around the world have been conducting laboratory experiments to help understand the fate and the behaviour of pesticides in the ecosystem. "Once upon the time" the research based on simple observations, simple measurements and analysis. "Once upon the time" the copper and its salts while today we have hundred pesticide and metabolites with huge profile in safety and plant health protection. Much has been learned over this time. Mathematical models, analytical chemistry, applied biology have advanced maintaining the pesticide science the most advanced science-based regulation allowing the implementation of pest strategies as well the achievement of food safety, human security and health protection goals. However there still remain many things that we don't know, or are not able to predict but we are confident, and this collection of paper is the evidence, that such unbelievable science – and its community - will remain also in the future pioneer on-demand of the science, of the policy and of the stakeholder populations.

ETTORE CAPRI, MARCO TREVISAN



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XV SYMPOSIUM IN PESTICIDE CHEMISTRY

XV SYMPOSIUM IN PESTICIDE CHEMISTRY ENVIRONMENTAL RISK ASSESSMENT AND MANAGEMENT

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FORCING MACRO PESTICIDES FATE MODEL WITH STICS CROP MODEL TO SIMULATE PESTICIDES FLOWS IN INNOVATIVE CROPPING SYSTEMS

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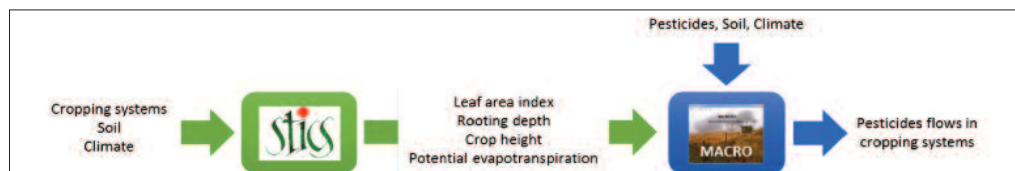
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OBJECTIVES

- Innovative cropping systems

HIGHLIGHTS

- Innovative cropping systems can help reducing chemical protection but it is impossible to carry out in situ experiments to study the sustainability of each of them
- Pesticides fate models can estimate pesticides flows and concentrations in the environment however, in these models, the representation of agricultural practices remains incomplete
- To assess the pesticide environmental impacts of innovative cropping systems, an in silico tool, STICS_MACRO, has been developed by forcing the MACRO pesticides fate model with the STICS crop model
- The outputs of MACRO and of STICS_MACRO were compared to measurements of water flows and pesticides concentrations in groundwater
- The STICS_MACRO model simulates better than MACRO the dynamics of crop development and the evapotranspiration, and the pesticides concentrations



This work consists of externally forcing the MACRO pesticides fate model using some variables coming from the STICS crop model. The project is supported by INRA and by the research program "For the Ecophyto plan (PSPEI)" funded by the French Ministry in charge of Agriculture.