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AMIGA partners published a new paper on 'Ecology and Evolution'

AMIGA partners Paul W. Goedhart, Hilko van der Voet (Biometris, Plant Research International DLO, Wageningen University and Research Centre, The Netherlands), Ferdinando Baldacchino and Salvatore Arpaia (ENEA, Italy) have jointly developed the paper *"A statistical simulation model for field testing of non-target organisms in environmental risk assessment of genetically modified plants"*, which has been released on *Ecology and Evolution* on March, 14 2014.

After more than one year and a half of intense research activity within the project, AMIGA researchers gathered data on the potential impacts and adverse effects that genetic modification can have on the environment. The paper describes a general framework for simulating data that is typically found in environmental risk assessment of genetically modified plants, to show how this can be used in the design of field experiments.

Research activities on those issues, are increasingly drawing the attention of national bodies and European agencies to the benefits and risks of genetically modified plants (GMPs). This is the main reason why EFSA (European Food Safety Authority) require comparative safety assessments, which can make a comparison between the genetically modified plant and its conventional counterpart.

The EU-funded project "Assessing and Monitoring the Impacts of Genetically modified plants on Agro-ecosystems" (AMIGA) includes as one of its main objectives the elaboration of statistically well-based protocols for the design and analysis of field trials. To prepare this action, an inventory of existing field studies in the literature was created, as well as a statistical simulation model developed to mimic ecological data, such as those found in practice. This simulation model can be used to generate count data having different statistical distributions (possibly with excess-zeroes). With this tool, researchers can simulate single or multiple trials across different environments, and enable genotype by

environment interaction, by means of adding random trial effects for different varieties. Finally, the simulation model allows researchers to include repeated measures in time, following a constant, linear or quadratic pattern, possibly with some form of autocorrelation.

To access the full paper, please click here.

AMIGA «Assessing and Monitoring the Impacts of Genetically modified plants on Agro-ecosystems» is a European project funded by the European Commission under the Framework Programme 7 (FP7), aiming at producing scientific data related to the possible environmental and economic impacts of cultivation of genetically modified plants (GMPs), relevant to European environments.

AMIGA project communication partner

Hinano Spreafico and Michela Pichereddu: amiga@minerva-communication.eu
Website: www.amigaproject.eu
Minerva Consulting & Communication - Avenue de Tervuren 32/34, 1040 Brussels - Belgium
Tel: +32 2 544 1888 Website: www.minerva-communication.eu