Workshop on the Environmental Risk Assessment of Genetically Modified Crops

16-17 August 2010 Brasilia, Brasil

The Center for Environmental Risk Assessment (CERA), ILSI Brasil and Embrapa convened their third annual workshop on environmental risk assessment (ERA) of genetically modified (GM) crops in Brasilia from August 16-17. Based on suggestions from participants at the 2009 ERA event, the Organizing Committee structured the 2010 workshop around emerging topics of interest to agricultural biotechnology regulators, risk assessors and other scientists. Grouped under the theme “New Challenges for ERA of GM Plants: Are New Approaches Necessary?” the topics were:

- ERA of transgenic feedstocks for biofuels
- ERA of plants with novel traits expressed through RNA interference (RNAi) mechanisms
- ERA of transgenic, abiotic stress tolerant plants

Each topic was introduced during a presentation to plenary and then workshop participants were divided into three groups to explore one of the following relevant case studies:

- Transgenic eucalyptus, prepared and presented by Dr. Giancarlo Pasqualli, Centro de Biotecnologia, Universidade Federal do Rio Grande do Sul
- Virus-resistant potato, prepared by Dr. André Dusi, Secretariat for International Affairs, Embrapa and Dr. Paulo de Melo, Embrapa Strategic Studies and Capacity Strengthening and presented by Dr. Dusi
- Drought tolerant maize, prepared and presented by Dr. Tom Nickson/Monsanto

The task of each working group was to apply problem formulation to the case study GM plant and then to report back to plenary on the results of their discussions. It was concluded that the framework for ERA currently used is also appropriate for newer types of GM plants, such as those described in the case studies. This structured approach to ERA includes problem formulation, the identification of hazards and exposure pathways, and the hypothesis formulation for scientific assessment and testing, always taking into account the need for case-by-case assessment.

It was noted that irrespective of the plant-trait combination or the method used to introduce a novel trait into a GM plant, problem formulation remains an essential and fundamental first step in ensuring each case-specific ERA is appropriately structured for a specific risk assessment and then identifies what potential hazards need to be addressed by the risk assessment in the context of the activity under consideration. Application of this structured approach to the
workshop case studies led to very interesting discussions about possible rationalization of data requirements for ERA. The experience with ERA over the past 16 years shows that this could be viable without compromising environmental protection and hence should be considered by regulatory authorities. In a broader sense the use of structured risk analysis provides more transparency about the processes and criteria used for decision making for the release of genetically modified plants.