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Paper title: An holistic approach to face the plant gene transfer technique: from laboratory to society.

Abstract

After years of research in plant molecular breeding, we felt the need to analyze the gene transfer technique as a part of a whole complex context, where laboratory research, social sciences, bioethics, and communication come together in a multidisciplinary approach. Considering the gene transfer technique, the scientific community is required to analyze the possible effects of their research on society at large, and to take into account increasing social demand for knowledge and participation. As other few researchers we started a dialogue with the public. As a result, we considered the meaning of a research line which aims to employ “sustainable” strategies for plant gene transfer (marker free, gene transfer to organelles etc..). This laboratorial aspect is the central part of our study, where the attempt to exploit more sustainable practices for gene transfer into plants would represent a conciliation effort between technology progress and attention to the society concern. In this view, the technology itself has to be considered as a communication practice.

In this analysis, the cooperation of the other disciplines resulted essential. Social science enables us to investigate the scientists’ consciousness in the matter, while bioethics focuses on the responsibility of the subjects. Finally, the analysis of the perception of risk and innovation in the field of GMO applications leads us to combine our scientific formation with an improved skill in the communication processes.

In the view of analyzing the hazard perception concerning the exogenous gene transfer to plants, and its management by the scientific community, European laboratories were selected for investigating the scientists’ perception towards exogenous gene transfer in general, and the reason to apply “sustainable” technology in particular. The research techniques used are ethnographic observation and interviews to the persons in charge of the laboratories and of the research guidelines.

Besides, from a bioethical point of view, we are devoting particular attention to the identification and classification of the different meanings of the idea of technology and of social and environmental sustainability in relation to the genetic interventions on the

environment and on its influence on social behavior. Our approach privileges the long-term implications of gene transfer, among them the following generations.

Finally, a relevant part of our project is dedicated to the development of tools for public engagement, to test means to involve citizens in the debate on biotechnologies. Our activity focuses on the perception and communication of risk and innovation in the field of GMO applications.

We believe that the research here presented would describe the effort of women scientists to consider a specific technical matter with an holistic approach.

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Biography of Lucia Martinelli

Laurea in Biological Science (Bologna University, 1982), PhD in Genetics (Wageningen University, NL, 1997), and Master in Scientific Journalism and Communication (Ferrara University, 2004), president of the Commission for the Equal Opportunities of the Trento Autonomous Province, component of the “Donne Scienza”, head of the Cellular and Molecular Unit of IASMA Research Center. Since 1980, she has been conducting research activity in the field of plant molecular breeding. Her expertise are Genetically Modified Crops from gene transfer to GM detection in food and feed, considering both laboratorial as well as "cultural" aspects, among them security, risk assessment and communication. She coordinates specific activities for improving the Science & Society communication on GMOs. Activity results have been published in scientific papers, and disseminated during public lectures and congresses, targeted for expert as well as not expert publics, and women. She is member of the review board of international scientific journals.

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Area of discussion:

Facing impact: society and biotechnologies