

PROFILE

NAME SURNAME: Mario MOTTO, Dr.

Nationality: Italian

Date of birth (Optional): April 20, 1946

Participation in COST Action FP0905: WG1

ESR at the time of starting the Action: Yes / Not

Contact data:

Institution/Organisation: CRA-Maize Research Unit

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Personal webpage (if available)

Institute web page: www.entecra.it

Research area and species (key words):

Genetics, Plant physiology, Biochemical genetics, Biotechnology, Maize

CURRICULUM VITAE (Max 2 pages)

Present position

Year, role (Director, senior researcher, researcher, technician, Post Doc, PhD student)

Education/Professional Career

Year Position/Fellowship etc.

Education

1971 University of Milan, Italy, University Degree: Agronomy

1974 University of Milan, Italy, Speciality Diploma: Plant Genetics

1978 North Carolina State University, Raleigh (NC), USA, Postdoctoral fellow: Genetics and Quantitative Genetics

1983 North Carolina State University, Raleigh (NC), USA, Postdoctoral fellow: Genetics and Quantitative Genetics

Fellowships

1972-1976 Experimental Institute of Cereal Crops, Maize Section, Bergamo

1978 Italian National Research Council

1983 Italian National Research Council

Appointments

2004-present Director, CRA-Unit of Maize Research, Bergamo

2000-2004 Director Institute of Cereal Crops, Rome; Coordinator, Research activities: Genetics, Plant Sciences, Genomics, Plant Breeding

1986-now Director, Maize Section, Institute of Cereal Crops, Bergamo. Research interests: Genetics and molecular biology, maize breeding.

1976-1985 Researcher, Maize Section, Institute of Cereal Crops, Bergamo. Research interests: Maize genetics and physiology

1974-1975 Graduate research assistant, Maize Section, Institute of Cereal Crops, Bergamo. Research interests: Population genetics, breeding and selection methods in maize

1972-1974 Graduate research assistant, Institute of Vegetable Crops, Montanaso Lombardo (Lo.); Research interest: Population genetics, breeding and selection methods in self-fertilizing plants, mutagenesis.

Others

Year Responsible for..., or member of etc..

Administrative experience

- Administrative responsibilities for funding, budgets, and personnel at Section and Central levels.
- Responsibility for meeting individual contract obligations.
- 1986- - Responsibility to take tactic decisions concerning day-to-day conduct of research and management of resources.
- Coordination of the finance and business office of this research unit, providing advices on budgetary, administrative and exploitation matters, and personnel management.

Teaching experience

- 2008 Professor of Plant Breeding, University of Mila
- 1995 Professor of Biotechnology and Genetics of Plant Improvement, University of Verona
- 1986 and 1987 Professor of Plant Physiology, Università Cattolica S. Cuore, Piacenza
- 1982 Professor of Plant Genetics, Università Cattolica S. Cuore, Piacenza

Editorial responsibilities

- 1986-present Technical Editor of Maydica
- 1991-1997: Advisory Board: Plant Journal
- 1997-present Editorial Board: Genetika
- Reviewer for: scientific journal and research programmes (UE Biotechnology Programs, Human Frontier, USDA, NIH, Italian Natl. Res. Council, Italian Ministry of Agriculture: competitive grant proposals).

Member

- Italian Society of Genetics
- Italian Society of Agricultural Genetics
- International Society for Plant Molecular Biology
- American Association for the Advancement of Science
- American Society of Plant Physiologists
- Chairman, Eucarpia: Section Maize and Sorghum: 1993-1996; 2009-2011

Research Projects (relevant to Action)

- | | |
|------------------|---|
| Year (Start-End) | <p><i>Title:</i></p> <p><i>EU/national/Regional</i></p> <p>Role: Scientific Responsible or participant</p> <p>The main objective of the project is:</p> |
| 2000-2003 | <ul style="list-style-type: none"> - Analysing the function of existing and novel genetic promoters for tissue-specific expression of transgenes in <i>Zea mays</i> Programme Biotechnology IV - EEC). |

	<p>Scientific Responsible The main objective of the project is: identification of novel promoters to be exploited in transgenesis</p>
1997-2000	<p>Implementation of the European network for evaluation, conservation, utilization of European maize landraces genetic resources (Programma The conservation, characterization, collection and utilization of genetic resources in agriculture, EEC). Scientific Responsible The main objective of the project is: Evaluation and use of genetic resources</p>
2004-2007	<p>Sviluppo di indicatori di qualità e miglioramento dei processi produttivi del seme mediante tecnologie genetiche innovative. National Scientific Responsible The main objective of the project is: Development of indicators for the improvement of kernel related trait in maize National.</p>
2001-2004	<p>A functional blueprint for the <i>Zea Mays</i> endosperm cell factory (Zeastar). FP5 Scientific Responsible The main objective of the project is: genome wide-analysis for gene expression during endosperm development and metabolic processes.</p>
2002-2004	<p>Espressione genica ed accumulo di proteine d'interesse agronomico nella cellula vegetale: meccanismi trascrizionali e post-trascrizionali National Scientific Responsible The main objective of the project is: identification of genetic mechanisms affecting gene expression</p>
2003-2007	<p>Sviluppo e impiego di mutator grid per l'analisi funzionale di geni afferenti la tolleranza a carenze idriche. Analisi genomica del frumento duro per l'identificazione di geni utili al miglioramento della tolleranza a carenza idrica e alla salinità. (FRUMISIS-MIPAF) Nazionale Coordinator The main objective of the project is: Genomic analysis in durum wheat for the discovery of genes useful to improve drought stress and salinity.</p>
2004-2007	<p>Ricerca per la riduzione delle contaminazioni da aflatossine nel latte e derivati. (AFLARID-MIPAF) National Scientific Responsible The main objective of the project is: Genetic investigation to contrast micotoxigen fungi in maize kernels.</p>
<p>Selected Publications and Communications (relevant to Action)</p> <p>MANETTI C., C. BIANCHETTI, L. CASCIANI, C. CASTRO, M.E. DI COCCO, A. MICCHELI, M. MOTTO, F. CONTI, 2006. A metabonomic study of transgenic maize (<i>Zea mays</i>) seeds revealed variations in osmolites and branched amino acids. <i>J. Exp. Bot.</i> 57: 2613-2625.</p> <p>ROSSI V., S. LOCATELLI, S. VAROTTO, G. DONN, R. PIRONA, D.A. HENDERSON, H. HARTINGS, M. MOTTO, 2007. Maize histone deacetylase HDA101 is involved in plant development, gene transcription, and sequence-specific modulation of histone modifications of gene and repeats. <i>Plant Cell</i> 19:1145-1162.</p> <p>CAVALIERE C., P. FOGLIA, C. GUARINO, M. MOTTO, R. NAZZARI, R. SAMPERI, A. LAGANÀ, N. BERARDO, 2007. Mycotoxins produced by <i>Fusarium</i> genus in maize: determination by screening and confirmatory methods based on liquid chromatography tandem mass spectroscopy. <i>Food Chem.</i> 105: 700-710.</p>	

- GIULIANO ALBO A., S. MILA, G. DIGILO, M. MOTTO, S. AIME, D. CORPILLO, 2007. Proteomic analysis of a genetically modified maize flour carrying *Cry1Ab* gene and comparison to the corresponding wild-type. *Maydica* **52**: 443-456.
- HARTINGS H., N. BERARDO, G. MAZZINELLI, P. VALOTI, A. VERDERIO, M. MOTTO, 2008. Assessment of genetic diversity and relationships among maize (*Zea mays* L.) Italian landraces by morphological traits and AFLP profiling. *Theor. Appl. Genet* **117**: 831–842.
- CASTRO C., M. MOTTO, V. ROSSI, C. MANETTI, 2008, Variation of metabolic profiles in developing maize kernels up-and-down-regulated for the *hda101* gene. *J. Exp. Bot.* **59**: 3913-3924.
- LOCATELLI S., P. PIATTI, M. MOTTO, V. ROSSI, 2009. Chromatin and DNA modifications in the *Opaque2*-mediated regulation of gene transcription during maize endosperm development. *Plant Cell* **21**: 1410-1427.
- MOTTO M., C. BALCONI, H. HARTINGS, M. LAURIA, V. ROSSI, 2009. Improvement of quality related-traits in maize grain: gene identification and exploitation. *Maydica* **54**: 321-342.
- LANZANOVA C., H. HARTINGS, M. MOTTO, C. BALCONI, M. G. GIUFFRIDA, C. BARO, A. CONTI, G. DONN, M. CARERI, L. ELVIRI, 2009. The *Zea mays* (L.) b-32 ribosome-inactivating protein efficiently inhibits growth of *Fusarium verticillioides*. *Eur. J. Plant Pathol.* **117**: 129-140.
- BALCONI C., C. LANZANOVA, M. MOTTO, 2010. Ribosome-inactivating proteins in cereals. pp. 149-166. *In*: J.M. Lord, M.R. Hartley (Eds.), *Toxic Plant Proteins*. Springer Heidelberg, London, New York.
- HARTINGS H, ROSSI V., R. PIRONA, M. LAURIA, M. MOTTO, 2009. Maize opaque endosperm mutations creates extensive changes in patterns of gene expression as revealed by transcriptome-wide analysis. *BMC Genomics* (submitted).

RESEARCH INSTITUTE (Max 1 page)

Description

This Institution has proven experience in maize genetics and breeding, in studies of the genetic and biochemical characterisation of maize mutants involved in seed storage protein accumulation, in the genetic and characterisation of molecular markers in germplasm classification and genetic diversity, and QTL identification and in developing elite inbreds and hybrids. Moreover, it has experience in GMO trials and identification of transgene.

Infrastructure

This Unit has a full range of field, greenhouse, and laboratory facilities, including in-house automatic DNA sequencing, and a platform for genome analyses for comprehensive studies related to the genetics, molecular biology, and breeding of maize.