Mediterranean Organic Agriculture

Organized by

Mediterranean Agronomic Institute of Bari

Mediterranean Organic Agriculture

MAI coordinator: Maurizio RAELI

Aims: The MOA Master programme aims at preparing graduates to produce innovation in Mediterranean organic agriculture, creating and maintaining sustainability in the farming system, assisting and contributing to national development of organic legislations and regulatory framework.

Objectives: The main objective of the MOA Master Programme is to train graduated agronomists and agricultural engineers for future professional careers in the domain of Organic Agriculture. Within this framework, the general learning outcomes are:

- to develop agronomic skills related to practices and techniques of Mediterranean Organic Agriculture production and management;
- to develop skills related to legislation, inspection, certification and labeling of organically-produced food and fibres;
- to build capacity in socio-economic analysis and market strategy for organic agriculture;
- to provide trainees with the necessary tools and expertise to assess the agricultural, environmental, and socio-economic opportunities and constraints of organic agriculture in different Mediterranean areas.

Part 1
Post graduate specialization programme

The programme is organized in 11 Units (60 ECTS)

Unit I
02 to 14 Nov '09

INTRODUCTORY DISCIPLINES (2 ECTS)

Contents:
Elements of statistics; Introduction to scenarios of shared knowledge, research techniques and technology; Criteria for bibliographic search.

Learning outcomes:
Trainees should become knowledgeable of biometrics, capable of developing and implementing research protocols and conducting literature reviews.

Unit II
16 Nov to 05 Dec '09

INTRODUCTION TO ORGANIC AGRICULTURE (6 ECTS)

Contents:
Basic principles associated to technical options for typical agriculture constraints; sustainability in O.A.; agro-ecosystem concept; ecological function, biodiversity and methods to improve biodiversity in agriculture and landscape management.

Learning outcomes:
Trainees should become knowledgeable of alternative farming practices and conversion requirements to organic agriculture and ways and means to enhance the quality of agroecosystems and biodiversity protection and enhancement at farm and landscape level. Trainees would become resource persons capable of technical and organizational advice for the promotion of organic agriculture in Mediterranean countries.

Unit III
7 Dec '09 to 16 Jan '10

SOIL FERTILITY MANAGEMENT (6 ECTS)

Contents:
Soil, abiotic and biotic components; organic matter evolution and balance; the main chemical parameters for soil fertility estimation; field sampling and practical laboratory; composting and biomass recycling; impact of fertilization and crop rotation on soil properties and crop growth;. Research methodology in organic agriculture.

Learning outcomes:
Trainees should become knowledgeable of the techniques to manage the soil by maintaining its fertility and advising strategies for the fertilisation using the farm by-products. Trainees will learn how to manage the soil organic matter through the basilar principles of organic agriculture and how to develop research activities.

Unit IV
18 Jan to 6 Feb '10

PEST, DISEASE AND WEED MANAGEMENT (6 ECTS)

Content:
The concept and philosophy of pest and disease prevention and control in organic agriculture; techniques for direct control of insects and diseases. Organic weeds management.

Learning outcomes:
Trainees should become knowledgeable of the strategies that could be applied to prevent and manage pests and weeds in organic agroecosystems.

Unit V
8 - 20 Feb '10

QUALITY, SAFETY AND POST-HARVEST HANDLING OF ORGANIC CROPS (4 ECTS)

Contents:
International quality award systems, cost-effective quality management, quality improvement, ISO 9000, environmental management system, food safety and Hazard Analysis Critical Control Points (HACCP). Technologies applied to organic products in the post-harvest phases: storage, processing, cold storage, transportation and packaging. Re-use of organic by- products.

Learning outcomes:
Trainees should become knowledgeable of the implementation of food quality control systems ISO 9001: 2000 and food safety issues HACCP.

Unit VI
22 Feb to 13 March '10

ORGANIC STANDARDS AND LEGISLATION (6 ECTS)

Contents:
Legislation in the world: International standards and guidelines: IFOAM basic standards, organic regulation in Northern countries (EU, USA, Japan); organic regulation in developing countries (Tunisia) Certification and accreditation schemes; Mandatory and voluntary regulatory systems; procedures of organic product importation in the EU. Auditing in organic inspection: audit planning and conduct

Learning outcomes:
Trainees should become knowledgeable of the International standards and regulations for organic agriculture, the processes of inspection and certification. They should become capable of assisting and/or participating in national efforts (both private and public) involved with planning and regulation the organic agriculture sector.

Unit VII
15 March to 3 Apr '10

GLOBAL MARKETS AND MARKETING FOR ORGANIC AGRO-FOOD PRODUCTS (6 ECTS)

Contents:
Principles of agro-enterprise; linking organic farmers to global market; marketing of agro-food products and organic products; emerging social economic issues in organic agriculture trade.

Learning outcomes:
Trainees should become familiar with the marketing concepts and instruments which could enhance a better positioning of organic products in the market.

Unit VIII
6 to 24 April '10

ASSESSING POLICY AND SOCIO-ECONOMIC IMPACTS OF ORGANIC FARMING (4 ECTS)

Contents:
Agricultural Policies: specific focus on Organic farming support policies in developed and developing countries. socio-economic aspects of organic farming: multiple linkages between organic farming and rural/local development

Learning outcomes:
Trainees are expected to:

- acquire knowledge about the core theoretical underpinning of agricultural policies and of their implications for on the organic sector;
- understand the role of governments, farming communities, organic movements and market operators in the building of sustainable organic sectors;
- integrate and link knowledge of agronomic, technical and economic concepts with a good understanding of social aspects and rural livelihoods implications associated to the development of organic farming systems

Unit IX
26 Apr to 15 May '10

FARM ECONOMICS AN D MANAGEMENT (6 ECTS)

Content:
Principles of farm economics and management: planning: economic and environmental accounting of gains and losses of different cultivation options, access to production factors, The role of ruminants in animal-soil-plant system; The Agroecological basic for the whole farm planning, design and management.

Learning outcomes:
Trainees should become knowledgeable of the agronomic and the business management of an organic farm to involve farm performance

17 – 22 May '10 Study tour

Unit X
24 May to 19 June '10

ORGANIC MEDITERRANEAN COMMODITIES PRODUCTION (8 ECTS)

Content:
Main Mediterranean crops: olive groves, vegetable crops, fruits trees, viticulture in terms of production, management, protection and processing.

Learning outcomes

Trainees should become knowledgeable of the practices and techniques used in organic agriculture in both production and management of the main Mediterranean commodities.

Unit XI **PROJECT (6 ECTS)**

December '09 to June '10

Supervised group project on different topics of organic management introducing the approach to research in organic farming. Field trials are designed to compare organic crop management systems including: organic fertilization, crop association and intercropping, mulching, weed management, water management..etc.

Learning outcomes

Trainees should become skilled of the direct hands-on field and laboratory experience with concepts of a lecture-based classroom courses.

This project enables participants to:

- Understand the effects of agro-ecological designs on experimental research;
- Apply the theoretical concepts learned during the formal instruction (organic principles, soil fertility management, plant protection, etc);
- Develop skills on data monitoring, collection and processing;
- Improve report writing and oral communication skills; develop group potentialities by stimulating individual skills.

21 to 26 June '10 **FINAL EXAMS**

EXAMINATIONS

Participants take a written examination at the end of each Unit. Examinations are in the form of written exams in classroom, including problems sets of questions, or exercises, or multiple choice questions.

To evaluate Unit XI (project), participants prepare a written report and expose a power point presentation about their working group project.

Participants may retake failed exams once, and up to 8 ECTS credits.

At the end of the course, participants take a comprehensive oral examination before an international jury.

Language of instruction: English

ACADEMIC STAFF

In the Postgraduate specialization programme instruction is given by MAIB internal staff, and by 25 prestigious visiting professors from all over the world, coming from universities, higher institutions, international organizations and research centres.

In the Master of Science programme, student's research theses are supervised by MAIB researchers, or external professors in collaboration with MAIB staff.

Part 2
The Master of Science thesis

Project (60 ECTS)

Supervised research work
Upon completion of the Master programme, graduates should become autonomous and life-long learners and should have acquired the following specific competences:

Knowledge outcomes
- Knowledge of the Mediterranean context of organic agriculture and dealing with economic, environmental and social challenges to agri-food production and marketing;
- Ability in analysis of research problems and objectives definition by planning and designing correctly the appropriate experiment protocol;
- Ability in data analysis and interpretation, speculation of action and cause-and effect relationship and elaboration of conclusions to clarify problem-solving.

Skill outcomes
- Scientific skills including methodologies in describing, analysing, assessing of overall system sustainability and improving complex issues in organic agriculture;
- Ability to link theory to real-life situations and to cope with complex situation and change at different scales by combining scientific learning with professional and practical field application and solving priority challenges by transforming knowledge into action.

Attitude outcomes
- A good understanding of ethics and values in the analysis, design and implementation of organic research strategies and ability to clarify personal attitudes (being open-minded, critical, spirited, determined, approachable, exploring and communicative);
- Ability in written and oral communications and facilitation skills in English through supervised work carried out autonomously, by preparation of informative and synthetic document to be delivered and defended before an audience;
- Ability to explore and cultivate knowledge across disciplines, and to appreciate cultural and linguistic diversity to the advantage of exchange and collaboration with other researchers and professionals.

Research activities: topics generally available for Master of Science theses

- Agro ecosystem management and organic cropping systems;
- Energy balance of agricultural production;
- Biodiversity protection, enhancement and preservation;
- Soil fertility management and evaluation of application of compost and compost tea in organic agriculture;
- Isolating and identifying the new biological control agents to be used in olive and grapevine production;
- Organic farm performance analysis;
- Consumer research and supply chain analysis;
- Organic policy analysis.

INDICATIVE MASTER THESES REALIZED WITHIN THE AREA

1. **Title:** The characteristics of organic farmers and farms in Albania: indications for organic support policy development
   Author: Luarasi Marsela, Agronomist, Albania (2008-2009)
   Place of Realization: MAI-Bari and Albanian Minsitry of agriculture
   Thesis director: P. Midmore, P. Pugliese, I. Tarelli and S. Dano

2. **Title:** Cinnamon plant extracts: a comprehensive physico-chemical and biological study for its potential use as a biopesticide
   Author: Arara Hakima, Agronomist, Algeria (2008-2009)
   Place of Realization: Laboratories of MAI-Bari
   Thesis director: P. Caboni, V. Simeone and I. Cavoski

3. **Title:** Biodiversity assessment in Protected Area: a comparison between conventional and organic farms and landscape analysis for PA management of biodiversity
   Author: Al Hajj Salem , Agronomist, Lybia (2008-2009)
   Place of Realization: MAI-Bari
   Thesis director: G. T. Liuzzi , G. Ladisa and J. Calabrese

4. **Title:** Evaluation of pre-crops and fertilizations on organic production under Mediterranean conditions
   Author: Unal Mehmet, Agronomist, Turkey (2008-2009)
   Place of Realization: Experimental fields and laboratories Ege University-Turkey
   Thesis director: U. Aksoy, L. Al Bitar and Z. Al Chami

5. **Title:** Assessment of different compost extracts on organic nursery trials
   Author: Tarraf Waed, Agronomist, Syria (2008-2009)
   Place of Realization: Experimental field & Laboratories of MAI-Bari
   Thesis director: C. Cocozza, V. Verrastro and A. Aly

Detailed additional information is available at http://www.iamb.it