Mediterranean Organic Agriculture

CIHEAM-Bari coordinator: Lina Albitar
Mediterranean Organic Agriculture

- **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.
The programme is organized in **11 Units (60 ECTS)**

Duration: **8 months from October 2016 to May 2017**

**3 Oct – 29 Oct 2016**

**UNIT 1 – INTRODUCTORY DISCIPLINES (6 ECTS)**

**Content:**
- Information and communication technology (ICT)
- Criteria for bibliographic search and technology of search
- Project and statistics
- Advanced English language
- Principles of organic agriculture and Agroecology
- Biodiversity and crops

**Learning outcomes:**
- Students will be able to develop familiarity and search through Internet; use of excel; develop the ability to search for, collect, process, read and interpret research results. Students are expected to understand the role of statistics in research, perform descriptive and inferential statistical analysis, use statistical analysis software and perform an experiment. Trainees should become knowledgeable of sustainable alternative farming practices and conversion requirements to organic agriculture and ways and means to enhance the quality of agroecosystems and biodiversity protection. They would be able to plan for an assessment of biodiversity from the field level to landscape level trough farm level.

**Evaluation procedure: written examination**

Written exams and practical work (exercises, assignments)
31 Oct - 12 Nov 2016

UNIT 2 - ORGANIC LIVESTOCK HUSBANDRY FARMING (4 ECTS)

Content:

✓ Organic poultry
✓ Organic ruminants

Learning outcomes:

✓ Trainees will learn also the tools to apply, in their countries of origin, techniques for the production of eggs and chicken meat organically through the selection and use of local hardy breeds. They will acquire the competence about principal feedstuffs for ruminants and the different feeding.

Evaluation procedure:

Written exams

14 Nov – 3 Dec ‘16

UNIT 3 - SOIL FERTILITY MANAGEMENT IN ORGANIC FARMING (5 ECTS)

Content:

✓ The soil: biotic and abiotic components.
✓ Cover crops, fertilizers and biomasses recycling for managing the soil fertility in organic farming.
✓ Impact of fertilization, soil tillage and crop rotation on soil properties and crop growth.

Learning outcomes:

✓ Students will learn to evaluate the environmental and agronomical importance of specific interactions among soil constituents, nutrients and pollutants, underlining; to maintain and possibly increase the soil fertility in organic agriculture using several sustainable strategies. Trainees will learn also how soil biological parameters react on organic fertilization and how soil microorganisms and humus formulation can be enhanced by farmyard manure (FYM) and other organic fertilizers.

Evaluation procedure:

Written exams and practical work (exercises, assignments)
UNIT 4 - INSECT, DISEASE AND WEED MANAGEMENT (7 ECTS)

Content:
- Plant protection against diseases in organic production
- Organic insect management
- Organic weeds management
- Organic beekeeping

Learning outcomes:
- Trainees should learn how to organize plant protection in organic production and to select the best tools to combat pathogens. They will gain skills on main biological control practices as a method of pest control. Trainees will be knowledgeable of weed biology and ecology, and how to manage weeds in organic farming and the positive function of weeds. They will be also knowledgeable of beekeeping managements (environment, production conditions, feeding, protection...etc).

Evaluation procedure:
Written exams and practical work (exercises, assignments, group presentations)

UNIT 5 - GLOBAL MARKETS AND MARKETING FOR ORGANIC AGRO-FOOD PRODUCTS (4 ECTS)

Content:
- Marketing of agro-food products
- Global markets and the socio-economic impacts of organics

Learning outcomes:
- The students will acquire knowledge of tasks and approaches in marketing to be enabled to independently develop a marketing concept for an organic company. Students will get practical insights into the overall trade policy issues that affect the outcomes for farming communities and affect the adoption of organics. They learn the multiple linkages between organic farming and rural development, especially from the perspective of resilience and risk management.

Evaluation procedure:
Written exams and practical work (exercises, assignments)
UNIT 6 - ORGANIC FARMING ECONOMICS, POLICY DEVELOPMENT AND SOCIAL ASPECTS (5 ECTS)

Content:

- Principles of farm economics
- Support policies for organic agro-food systems
- Socio-economic Impact of Organic Farming in Developing Countries

Learning outcomes:

- Trainees should understand business performance through evaluation of productivity, efficiency and profitability, to identify strengths and weaknesses of business choices. They would acquire some basic knowledge / terminology about several tools and procedures of agricultural policies, with special reference to organic food productions. Students would become familiar with basic concepts of farm development and would be able to relate the development of organic farming in their countries to global trends.

Evaluation procedure:

Written exams and practical work (exercises, assignments)

UNIT 7 - ORGANIC STANDARDS AND LEGISLATION (8 ECTS)

Content:

- Organic Production and Sustainable Development: Frameworks and Strategies
- Organic Oversight Systems: Introduction to Certification, Accreditation and Recognition
- Organic regulation in the EU and Mediterranean countries
- Organic textiles
- The landscape of organic and natural certification applied to cosmetics
- Organic aquaculture

Learning outcomes:

- Students should understand how the Principles of Organic Agriculture are translated into regulatory frameworks. Students will become knowledgeable of the 3-tiered system of oversight in current use within the organic trade. Students gain a direct understanding of the knowledge and skills needed to work in an organic certification agency. Students will be familiar with the
European regulation on organic standards and how to implement it for certifying organic products or production processes and they will learn also the importing rules. They will know the landscape of European private Standards applied to natural and organic cosmetics. They will learn also how to breed aquaculture organically and under which conditions and standards to be certified.

**Evaluation procedure:**

Written exams and practical work (exercises, assignments); student project design and presentation in written and oral formats.

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**13 Mar - 08 Apr ‘17**

**UNIT 8 - ORGANIC MEDITERRANEAN COMMODITIES PRODUCTION (8 ECTS)**

**Content:**

- Nursery and vegetable production
- Organic fruit growing
- Organic olive growing
- Organic vineyard orchard management

**Learning outcomes:**

- Students will be knowledgeable of the main agronomic practices, soil fertility management, advantages and disadvantages of compost and organic fertilizers utilization and the main regulatory aspects related to organic horticulture and growing media production in organic vegetable production. Students should be able to design a soil fertility and crop nutrition plan and pest management plan based on the basic principles of organic farming. They will acquire detailed knowledge and thorough understanding of all aspects of organic olive production systems and they should learn how to manage vineyard orchards under organic conditions (choice the rootstock, the most suitable form of training, soil management with particular attention to fertilization, phytosanitary protection).

**Evaluation procedure:**

Written exams and practical work (exercises, assignments), case-study presentation.
UNIT 9 - QUALITY, SAFETY AND POST-HARVEST HANDLING OF ORGANIC CROPS (4 ECTS)

Content:
- Food quality and safety certification schemes
- Organic food quality and safety
- Food Hygiene Regulations: rules and new requirements
- Technical audit and traceability
- Post-harvest techniques

Learning outcomes:
- Trainees should become knowledgeable of the implementation of food quality and safety systems, on farm, according to the main internationally recognized standards. They should be knowledgeable of principles of voluntary and compulsory regulations of food safety and food quality in EU; knowledgeable of principles to realize a risk analysis; knowledgeable of methods to lead external/internal audits. They should be also knowledgeable of post-harvest handling of fresh produce and how to retain the quality of the products and extend market life.

Evaluation procedure:
Written exams and reports

UNIT 10 - IMPACT ASSESSMENT OF ORGANIC AGRICULTURE (2 ECTS)

Content:
- Assessment of the Impact of Organic Agriculture on the Economies of Developing Countries (economic, environmental and social)
- Life cycle assessment: a comprehensive methodology for environmental impact assessment

Learning outcomes:
- Trainees should become knowledgeable of the implementation of the aforementioned method and of the assessment of the impact of the organic production techniques on the economies of their countries. They will learn how to assess organic systems, from a life cycle perspectives, as a basic step to
optimize the performance of organic agricultural practices in each single step of organic production or product processes.

**Evaluation procedure:**
Written exam and practical work (exercises, assignments)

**10 Oct ’16 - 27 May ‘17**

**UNIT 11 - PROJECT (7 ECTS)**

**Content:**
- 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.
- This project enables participants to:
  - Apply the theoretical concepts learnt 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.

**Evaluation procedure:**
Final written report

**EXAMINATIONS**

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

To evaluate Unit 11 (project), participants prepare an individual report in written form.
Participants may retake failed exams once and up to 8 ECTS.
At the end of the course, participants take a comprehensive oral examination with an examining board.

Language of instruction: ENGLISH
ACADEMIC STAFF

In the Master programme lectures are given by MAIB internal staff and by 30 prestigious visiting professors from all over the world, coming from universities, higher institutions, international organizations and research centres.
Part 2 - The Master of Science Thesis

Project (60 ECTS)

Research activities: topics generally available for Master of Science theses

✓ Management of cropping systems and soil fertility, quality of agricultural products and agricultural by-product recovery
✓ Biological control and natural biomolecules
✓ Sustainability of agricultural and natural systems
✓ Economic and market research
✓ Socio-economic impacts and impacts of support policies

Indicative master theses realized within the area

I.
✓ Title: “Comparison of three organic greenhouse production systems of Kohlrabi (Brassica oleracea var. gongylodes) under Mediterranean conditions. – 55 p.”
✓ Author: HAFIDI Salaheddine (Morocco)
✓ Place of realization: IAMB - ITALY
✓ Thesis directors: F. G. Ceglie and F. Tittarelli

II.
✓ Title: “Mediterranean organic prickly pear (Opuntia ficus indica (L.) Mill.): Characterization of plant associated microbiota and their exploitation through lactic acid fermentation – 79 p.”
✓ Author: THLIGENE Nadia (Tunisia)
✓ Place of realization: IAMB - ITALY
✓ Thesis directors: I. Cavosky and R. Di Cagno

III.
✓ Title: “Correlations between organic and conventional management, on-field biodiversity and landscape diversity, in olive groves in Apulia (Italy). – 77 p.”
✓ Author: ABDELLATIF Omar Mohamed (Egypt)
✓ Place of realization: IAMB - ITALY
✓ Thesis directors: G. Calabrese and E. Perrino

IV.
✓ Title: “Microeconomic analysis of organic olive farms in the North of West Bank-Palestine. – 66 p.”
✓ Author: ABU IKHMAISH Siham (Palestine)
✓ Place of realization: IAMB - ITALY
V.

✔ Title: “Factors influencing farmers’ decision to stay in organic farming. An exploratory analysis in Fayoum Governorate, Egypt. – 80 p.”
✔ Author: AHMED EL NADY KAMEL Mai (Egypt)
✔ Place of realization: IAMB - ITALY

Further detailed information is available at http://www.iamb.it