

COST FA 1105: Biogreenhouse

Towards a sustainable and productive EU organic greenhouse horticulture

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History

- 2008: Modena



- 2009 Cologne



- 2010 Bleiswijk 1st Conference



Action builds a network of researchers and advisors with the objectives of:

- Coordinating existing research for OGH
- Linking experts in an integrated approach
- Develop a common agenda
- Improve accessibility and availability of knowledge, expertise and facilities
- Support the EU in standards development
- Submission of proposals

for a sustainable and productive organic greenhouse horticulture

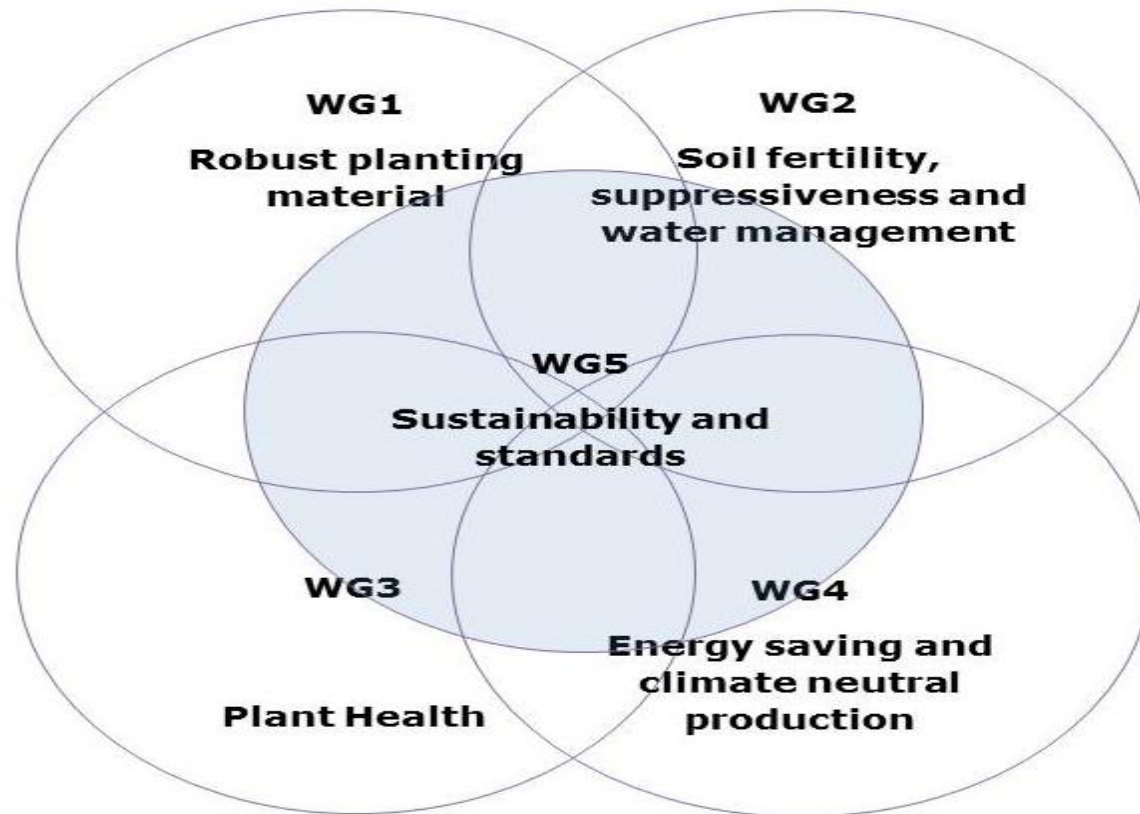
How to attain these objectives?

- Collaborative community of researchers and advisors
- Agenda and action plan
- Coordination
- Meetings, focussed workshops, exchange of scientists and students
- Website and social media
- Conferences

Target groups

- *Researchers*
- *Advisors*
- *Certification bodies*
- *Policy makers*
- *Industry*

Key topic areas and need for integrated approach



Action FA1105: Writing team

- Coordination and submission *Rob Meijer*
- Robust planting material
Bettina Billmann, Wolfgang Palme and Martin Koller
- Soil fertility, Suppressiveness and Water management
Fabio Tittarelli and Martine Dorais
- Plant health
Gerben Messelink and Justine Dewitte
- Energy saving and Climate neutral production
Nico Vergote and Cecilia Stanghellini
- Sustainability and Standards
Ulrich Schmutz

Deliverables : *applicable to all topic areas*

- WG plan
- Inventory of available information and on-going research
- Common research and innovation agenda
- Website: report on activities and dissemination material
- Calls for Short term Scientific Missions (STMS) and Early Stage researchers (ERS) Training schools
- Workshops and scientific and applied publications
- Final Conference of the Action as a whole

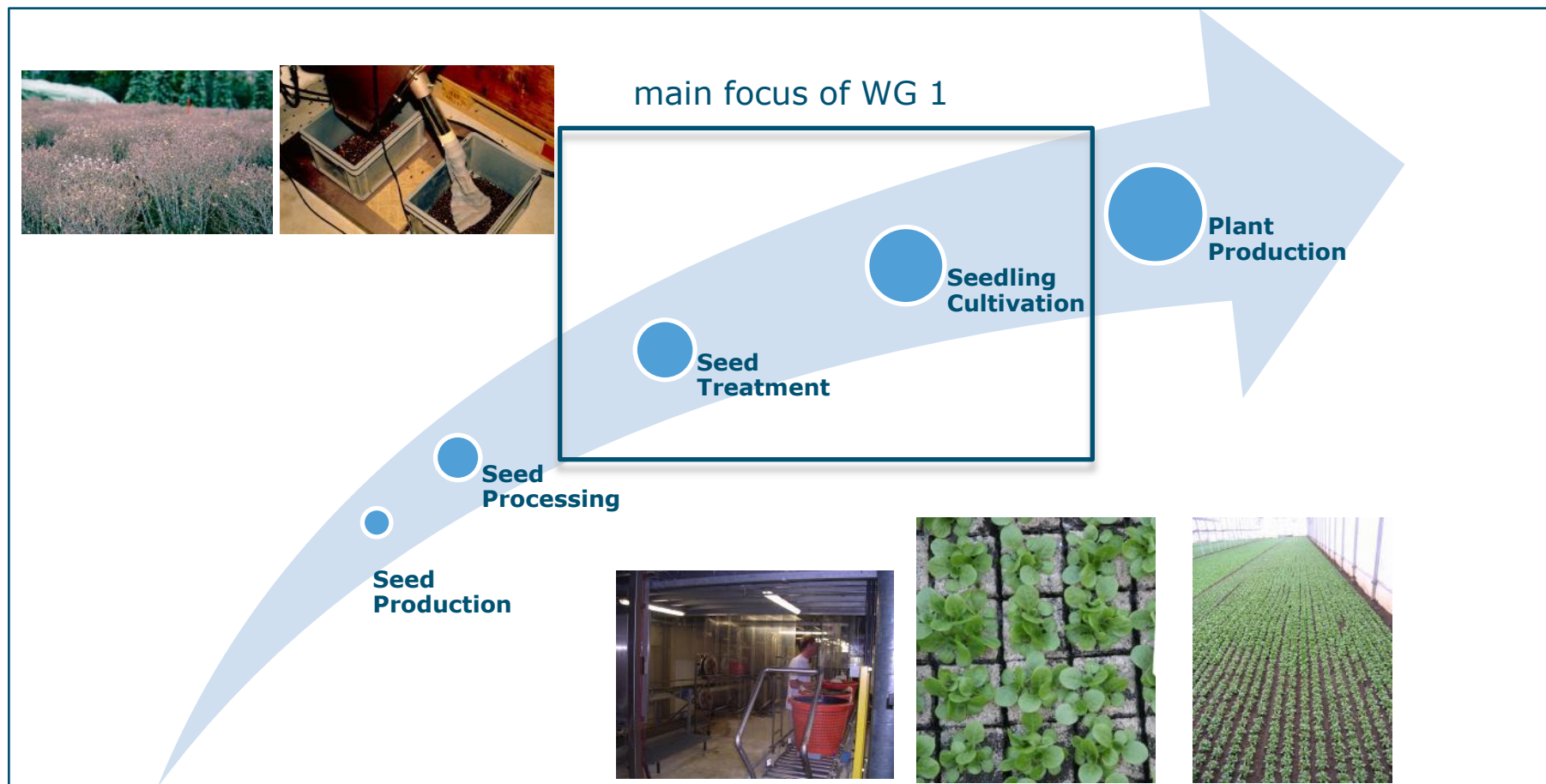
Robust planting material

Background - drivers

- Demand for resilient planting material
- Need for effective and chemical free techniques for seed treatment

Robust planting material

Background – main focus



Robust planting material

Objectives

- Develop standardized protocols for variety testing
- To compare methods for seed treatment
- To make available results of international variety trials
- Planting material, with high (abiotic) resilience (eg. winter firmness) and which is disease and pest free (interaction with WG 3)

Robust planting material

Deliverables

- Manual for seed treatment methods
- Manual for (variety) trials in OGH

Soil fertility, Suppressiveness, Water management

Background

- Lack of EU rules for OGH. Some Member States and/or private organization have developed their own interpretation of rules
- Basic principles of organic production are put under discussion when standards for OGH are debated (Blom, 2012)
- On-going discussion on the use of not renewable resources in organic growing media (i.e. peat)
- Needs of harmonizing rules and protocols respecting the differences due to extremely different pedoclimatic conditions
- Need of integrating soil fertility, disease suppression and water management taking into account the high level of specialization and intensive production typical of OGH

Soil fertility, Suppressiveness, Water management

Objectives

- To develop efficient and sustainable fertility and water management strategies using a system approach for different pedo-climatic conditions.
- To design strategies for the use of composts and other amendments in soil fertility and disease suppression.
- To develop alternatives for peat as a substrate in the production of seedlings
- To develop sustainable and safe technologies and strategies for reducing risks in drain water recycling.

Soil fertility, Suppressiveness, Water management

Deliverables

- A guideline booklet on soil fertility management for OGH (2a)
- Document on growing media for organic seedling production(2b)
- Guideline for the standardization of composting process, taking into account the use of BCA to obtain suppressive compost (2c)
- Document on monitoring and control tools for water management (2d)
- Document on risks of OGH for human health (2e).

Plant Health: Background

- Pests and diseases are an enormous threat for the organic greenhouse production
- High expenses on biocontrol agents
- Current methods often fail
- ecological support functions that suppress greenhouse pests and diseases can be used more intensively
- Several methods are developed separately, but a systems approach is required for further developing strategies

Plant Health: Objective

- Design resilient cropping systems with a maximum use of ecological support functions to suppress greenhouse pests and diseases and enhance biological control. These functions can include:
 - functional diversity of natural enemies,
 - food sprays,
 - banker plants,
 - habitat and climate management,
 - induced plant resistance

Plant Health: Deliverables

- Documents on the management of diseases (systems approach)
- Documents on pest management by non-chemical means (systems approach)

Energy saving and climate neutral production

Background

- Central-Northern Europe:
 - OGH is less energy efficient:
 - Smaller companies with use of fossil energy
 - Lower production/m²
 - Energy is 20% of production costs
- Mediterranean region:
 - Management of humidity difficult in unheated greenhouses
- General: *need for adaptation of research results from traditional greenhouses, about energy saving and humidity and crop management*

Energy saving and climate neutral production

Objectives

- Analyse energy economy & fossil energy use related to:
 - Climatic region
 - Growing system
 - Cropping schedule
- Develop and evaluate options for climate-neutral production by:
 - Reducing energy demand by technical modifications, crop management, cultivars
 - Energy-efficient process management
 - Use of renewable sources of energy
 - Climate neutral carbon dioxide enrichment.

Energy saving and climate neutral production

Deliverables

- a.** An inventory of (fossil) energy economy related to climatic region / growing system / cropping schedule
- b.** Guidelines for the reduction of energy use in different climatic regions in view of crop, cropping schedule and growing system
- C.** Dissemination package about management of crop; climate and carbon dioxide fertilization
- d.** Document on feasibility of climate-neutral organic cultivation

Sustainability and standards

Background

- Tools for the assessment of the ecological, social and economic sustainability of OGH systems are not available (*good work done for conventional and organic agriculture but horticulture less well covered*)
- Private bodies like Soil Association in the UK have just completed standard consultation and updated detailed **protected cropping** standards
- Standards for OGH are due to be discussed by the EU Commission in 2012/13

Sustainability and standards

Objectives

- Assess indicators for the ecological, social and economic sustainability of OGH
(e.g. total factor productivity contrasting non-renewable inputs, like fossil fuel or peat, with multiple outputs like yield quantity and quality, and environmental and social services)
- Produce roadmaps on how to improve sustainability in OGH across EU
- Inform and give policy advice to stakeholders, especially for the development of EU standards for OGH

Sustainability and standards

Deliverables

- Meeting to assess available sustainability indicators leading to a toolkit (5a)
- Indicator toolkit for sustainability of OGH (5b),
- Roadmaps to improve sustainability for key aspects (5c)
- Publication on the scientific background for standards and good practices in OGH (5d)
- Stakeholder seminar to present results and findings (5e)

Organisation

■ *Structure*

- MC
- Five WGs
- Core Group Meetings
- STSM Evaluation Committee
- Website and portal

■ *Meetings and workshops*

■ *Agenda and Action Plan and yearly Workplan*

Timetable, Milestones and deliverables

Timeline	Milestone	Deliverables (see for description D.2)
M01 – 02	<ul style="list-style-type: none"> - Initial MC meeting, election of chairs, etc - Launching the website 	Action: Website
M03-04	<ul style="list-style-type: none"> - MCmeeting - WG meetings - 1st round of STSM applications 	A, B, C, 5a and outline of 5b
M10	<ul style="list-style-type: none"> - Core group meeting (optional) 	Report
M16	<ul style="list-style-type: none"> - MC Meeting - WG meetings - 2nd round of STSM applications 	A,B,C,E, outlines of F, 1a, 2b, 2d, 3a ,3b, 4a,4b, 5c and 5 d; draft of 5b
M22	<ul style="list-style-type: none"> - Core Group meeting (optional) 	report
M28	<ul style="list-style-type: none"> - MC Meeting - WG meetings - 3rd round of STSM applications - (Joint)Workshops per WG 	A,B,C,D,E,1a,5b; outlines of 2a, 2c,2e,4b,4c,4d; drafts of F, 2b,2d, 3a, 3b,4a, 5c and 5d
M40	<ul style="list-style-type: none"> - MC Meeting - WG meetings - 4th round of STSM applications 	A,B,C,E, 2b,2d, 4a, 5c and 5d partly; drafts of 2a, 2c, 2e, 3a,3b,4b,4c,4d
M46	<ul style="list-style-type: none"> - Core group meeting (optional) 	Report
M52	<ul style="list-style-type: none"> - MC Meeting - WG meetings - Conference 	B,E,F,G,1b,2a, 2c,2e, 3a, 3b,4b,4c,4d,5c, 5d,5e

The Action
starts now



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