MYCO-GLOBE

“Integration of Mycotoxins and Toxigenic Fungi
Research for Food Safety in Global System”

Coordinator: Angelo Visconti (ISPA-CNR, Italy)
Specific Support Actions (MYCO-GLOBE)

Aims:
• To promote and facilitate the dissemination, transfer, exploitation, assessment and broad take-up of past and present programme results
• To contribute to strategic objectives, notably regarding the European research area;
• To prepare future community RTD activities

Specific Action
• Stimulating international cooperation:
  • Initiative aiming at stimulating the co-operation with countries having signed bilateral S&T co-operation agreement with EU
MYCO-GLOBE objectives

• Disseminate the main European and International research results in mycotoxins and toxigenic fungi in relation to food safety: occurrence, ecology, bio-technology, genomics.

• Promote European and International integration of results and development of future research/priorities

• Expand European research network on mycotoxins and toxigenic fungi to Third Countries worldwide

• Implement scientific background for the harmonization at global level of European food safety policies (mycotoxins)
## List of EU projects related to mycotoxins and toxigenic fungi

### FP5 projects

<table>
<thead>
<tr>
<th>No</th>
<th>Acronym</th>
<th>Title</th>
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<tbody>
<tr>
<td>1</td>
<td>CONTROL MYCOTOX FOOD QLK1-CT-1999-00996</td>
<td>Hazard analysis control of food contamination: Prevention of <em>Fusarium</em> mycotoxins entering the human and animal food chain.</td>
</tr>
<tr>
<td>2</td>
<td>WINE-OCHRA RISK QLK1-2001-01761</td>
<td>Risk assessment and integrated ochratoxin A (OTA) management in grape and wine.</td>
</tr>
<tr>
<td>3</td>
<td>DETOX-FUNGI QLK1-1999-01380</td>
<td>Early detection of toxigenic <em>Fusarium</em> species and ochratoxigenic fungi in plant products.</td>
</tr>
<tr>
<td>5</td>
<td>RAFBCA QLK1-CT-2001-01391</td>
<td>Risk Assessment of Fungal Biological Control Agents.</td>
</tr>
<tr>
<td>6</td>
<td>EMAN QLK1-CT-2000-01</td>
<td>European Mycotoxins Awareness Network.</td>
</tr>
<tr>
<td>7</td>
<td>SAFE ORGANIC VEGETABLE QLK1-CT-1999-00986</td>
<td>Safe organic vegetables and vegetable products by reducing risk factors and sources of fungal contaminants throughout the production chain: the carrot – <em>Alternaria</em> model.</td>
</tr>
<tr>
<td>8</td>
<td>OTA PREV QLK1-CT-1999-00433</td>
<td>Prevention of Ochratoxin A in cereals.</td>
</tr>
<tr>
<td>9</td>
<td>OCHRATOXIN A – RISK ASSESSMENT QLK1-CT-2001-01614</td>
<td>Mechanisms of OTA induced carcinogenicity as a basis for improved risk assessment.</td>
</tr>
<tr>
<td>10</td>
<td>MYCOSENSE (CRAFT) QLK1-CT-2000-01248</td>
<td>Development of a novel test kit for rapid on-site determination of mycotoxins in food.</td>
</tr>
<tr>
<td>11</td>
<td>FUCOMYR QLK5-CT-2001-02044</td>
<td>Novel tools for developing <em>Fusarium</em> resistant and toxin free wheat for Europe.</td>
</tr>
<tr>
<td>12</td>
<td>FP5 COST ACTION- 835</td>
<td>Agriculturally Important Toxigenic Fungi.</td>
</tr>
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### FP6 projects

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<tbody>
<tr>
<td>13</td>
<td>GOOD-FOOD IST2002-508774</td>
<td>Food Safety and Quality Monitoring with Mycrosystems.</td>
</tr>
<tr>
<td>14</td>
<td>2E-BCAs in Crops Project 001687</td>
<td>Enhancement and exploitation of soil biocontrol agents for bio-constraint management in crops.</td>
</tr>
<tr>
<td>15</td>
<td>MYCOTOX INCO-DEV ICA4-CT-2002-10043</td>
<td>The Development of a Food Quality Management System for the Control of Mycotoxins in Cereal Production and Processing Chains in Latin America South Cone Countries.</td>
</tr>
<tr>
<td>16</td>
<td>BIOCOP</td>
<td>New technologies to screen multiple chemical contaminants in foods.</td>
</tr>
<tr>
<td>17</td>
<td>SAFE FOODS</td>
<td>Promoting food safety through a new integrated risk analysis approach for foods.</td>
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MYCO-GLOBE Launch Conference
Brussels - 22nd October 2004
MYCO-GLOBE Structure

WP1. Steering Committee

WP2. Conference on “Integration of Mycotoxin and Toxigenic Fungi European research for Food Safety in Global System” Brussels, 2004

WP3. Conference "Learning from EC: Reducing impact of Mycotoxins in tropical agriculture with emphasis on health and trade in Africa" Ibadan, Nigeria, 2005

WP4. Conference “Advances on genomics, biodiversity and rapid system for detection of toxigenic fungi and mycotoxins” Bari, Italy, 2006

WP5. Workshop/Training course on “Mycotoxins and toxigenic fungi detection methods” Bari, Italy, 2006

WP6. EU bilateral workshops with USA and Australia, New Orleans and Sidney, 2005
WP1. Steering Committee

The SC will have a key-role in:

- Supervise and coordinate all activities;
- Ensure an adequate standard and coherence with the specific objectives of the MYCO-GLOBE and the Commission policies for SSAs;
- Contribute in formatting and/or preparing the proceedings of the conferences and the final report;

The SC will provide:

- Two intermediate reports summarizing the outcome of the main conferences (WP3, WP4);
- Final report consisting of a compendium of MYCO-GLOBE activities with suggestions for future developments in Europe and in the World of the food safety research area with special emphasis to mycotoxins.
WP2. Conference on “Integration of Mycotoxins and Toxigenic Fungi European research for Food Safety in Global System” Brussels, 22-10-2004

WP2 conference is focused on:

• information exchange and up-dating

• dissemination of the outcomes of the Mycotoxin Prevention Cluster and related EU FP5 – FP6 projects;

• summary of mycotoxins and toxigenic fungi research worldwide provided by selected speakers from other continents;

Deliverables:

• Conference proceedings (CDs) and specific reports summarizing the general outcome of the meeting;

• Feed-back from a questionnaire on the relevance of presentations and key knowledge areas which need to be further disseminated
WP3. Conference "Learning from EC: Reducing impact of Mycotoxins in tropical agriculture with emphasis on health and trade in Africa", Ibadan, Nigeria, 2005

WP3 conference is focused on:

• Transfer of know-how in mycotoxin and toxigenic fungi by learning from EU experience;
• Better cooperation and networking between Africa and EU;
• Recommendation for improving public health and trade through management of mycotoxins in pre-harvest and post-harvest.

Deliverables:

• Conference proceedings
• Better knowledge of the mycotoxin problem
• Issues for national and international regulations on mycotoxins in trade
• Issues for future specific researches in African countries
WP4. Conference “Advances on genomics, biodiversity and rapid system for detection of toxigenic fungi and mycotoxins” Bari, Italy, 2006

WP4 conference aims to:

• disseminate and integrate throughout European and World scientific community updated results of the relevant research on genomic, biodiversity and rapid detection systems for mycotoxins and toxigenic fungi

Deliverables:

• Conference proceedings
• Updating on advances on genomics of toxigenic fungi and new detection systems
• Issues for future researches and collaboration at global level
WP5. Workshop/Training course on “Mycotoxins and toxigenic fungi detection methods” Bari, Italy, 2006

Aim:

• Show and teach traditional methods and new molecular and immunological systems for rapid, robust and user friendly identification of mycotoxin and toxigenic fungi in the food chain.

Deliverables:

• Compendium of the training course
• Trained persons in detection methods for mycotoxins and toxigenic fungi
• Feed-back from a questionnaire on the relevance of the training and key areas which need further training
**WP6. EU Bilateral workshops with USA and Australia, New Orleans and Sidney, 2005**

**Aims:**
- Facilitate exchange of researchers between EU and USA or Australia
- Learning from scientific progresses made in USA/Australia and prioritize research needs
- Share technology and avoid duplication of efforts

**Deliverables:**
- Joint reports by the workshop participants;
- Issues for future specific researches and collaboration with USA and Australia
- Reports on the activity of young researcher short-term missions
OTHER ACTIVITIES

• Regional dissemination and exchange of information on the occurrence of mycotoxins in Asia and South America;
• Transfer of know-how from European and USA experience to reduce mycotoxin contamination in these regions.

Expected results:
• better knowledge of the mycotoxin problem, prevention methods, risk management in South America and Asia
• issues for future specific researches and collaboration with these countries
Socio-economic significance

Long-term impact:

• Enhance productivity and export potential of agriculture in tropical Africa and other Third countries (Asia and South America)

• Set up global collaborative network in the field of mycotoxins and toxigenic fungi to help control of toxic wastage in crops

• Transfer knowledge to developing countries

• Enable more advanced countries to share information

• Improve the coordination of EU food safety policies with those of Third countries and international bodies
Scientific significance

• Spread knowledge of advanced research tools in genomics and detection systems for mycotoxins and toxigenic fungi

• Evaluate research policy in the specific area

• Disseminate knowledge of best practice for control of food quality and safety in relation to mycotoxins and toxigenic fungi

• Act, through its final report, as a compendium for suggestions for future food safety research in fungal contamination in Europe and the rest of the world
## MYCO-GLOBE Participant List

1. **ISPA-CNR**  
   Institute of Sciences of Food Production  
   Italy

2. **Cranfield**  
   Applied Mycology Group Cranfield University  
   UK

3. **IITA**  
   International Institute of Tropical Agriculture  
   Nigeria

4. **USDA**  
   Food & Feed Safety Res. Unit US Dept. of Agriculture  
   Lousiana USA

5. **KSU**  
   Dept Plant Pathology Kansas State University  
   Kansas USA

6. **RBG**  
   Royal Botanic Garden  
   Australia

7. **UNRC**  
   Dept. of Microbiology Nat. University of Rio Quarto  
   Argentina

8. **ICRISAT**  
   International Crops Res. Inst. for the Semi-Arid Tropics  
   India
<table>
<thead>
<tr>
<th>Participant</th>
<th>Expertise</th>
<th>Role in the project</th>
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<tbody>
<tr>
<td>ISPA-CNR</td>
<td>Mycotoxins, toxigenic fungi, analytical methods, mycology, genetic and genomics, new detection methods</td>
<td>Coordinator, organize the WP4 Conference and Training course (WP5). Coordinate SC activities</td>
</tr>
<tr>
<td>Cranfield</td>
<td>Ecophysiology of spoilage and toxigenic fungi, HACCP for improving food chain safety, mycology</td>
<td>Organize the WP2 Conference and collaborate with ISPA to training course. Participate at SC</td>
</tr>
<tr>
<td>IITA</td>
<td>Food security, agricultural production, management of natural resources, aflatoxin problems</td>
<td>Organize the WP3 Conference, improve the dissemination in Africa of results. Participate at SC</td>
</tr>
<tr>
<td>USDA</td>
<td>Food and Feed safety, Aflatoxins genomics and functional genomics, biochemistry</td>
<td>Organize the bilateral workshop in USA. Participate at SC</td>
</tr>
<tr>
<td>KSU</td>
<td>Fungal genetics, bioinformatics, plant pathology, biological control, biotechnology, fungal ecology and epidemiology</td>
<td>Contribute to organization of the bilateral workshop in USA. Contributing to the training course. Participate at SC</td>
</tr>
<tr>
<td>RBG</td>
<td>Taxonomy, ecology and phylogenetics of fungi (in particular Fusarium)</td>
<td>Organize the bilateral workshop in Australia. Participate to SC. Contribute to the training course</td>
</tr>
<tr>
<td>UNRC</td>
<td>Microbiology, chemistry, agronomy, toxigenic fungi and mycotoxins in plant products</td>
<td>Organize a conference in Argentina. Disseminate results in South American countries. Participate at SC.</td>
</tr>
<tr>
<td>ICRISAT</td>
<td>Crop productivity, food security, management of environment, aflatoxins researches (resistance, storage, agronomics, biological control)</td>
<td>Disseminate results in Asian countries. Participate at Conferences and SC</td>
</tr>
</tbody>
</table>
Thank you!

or your kind attention