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Training and education in biotechnology and biosafety

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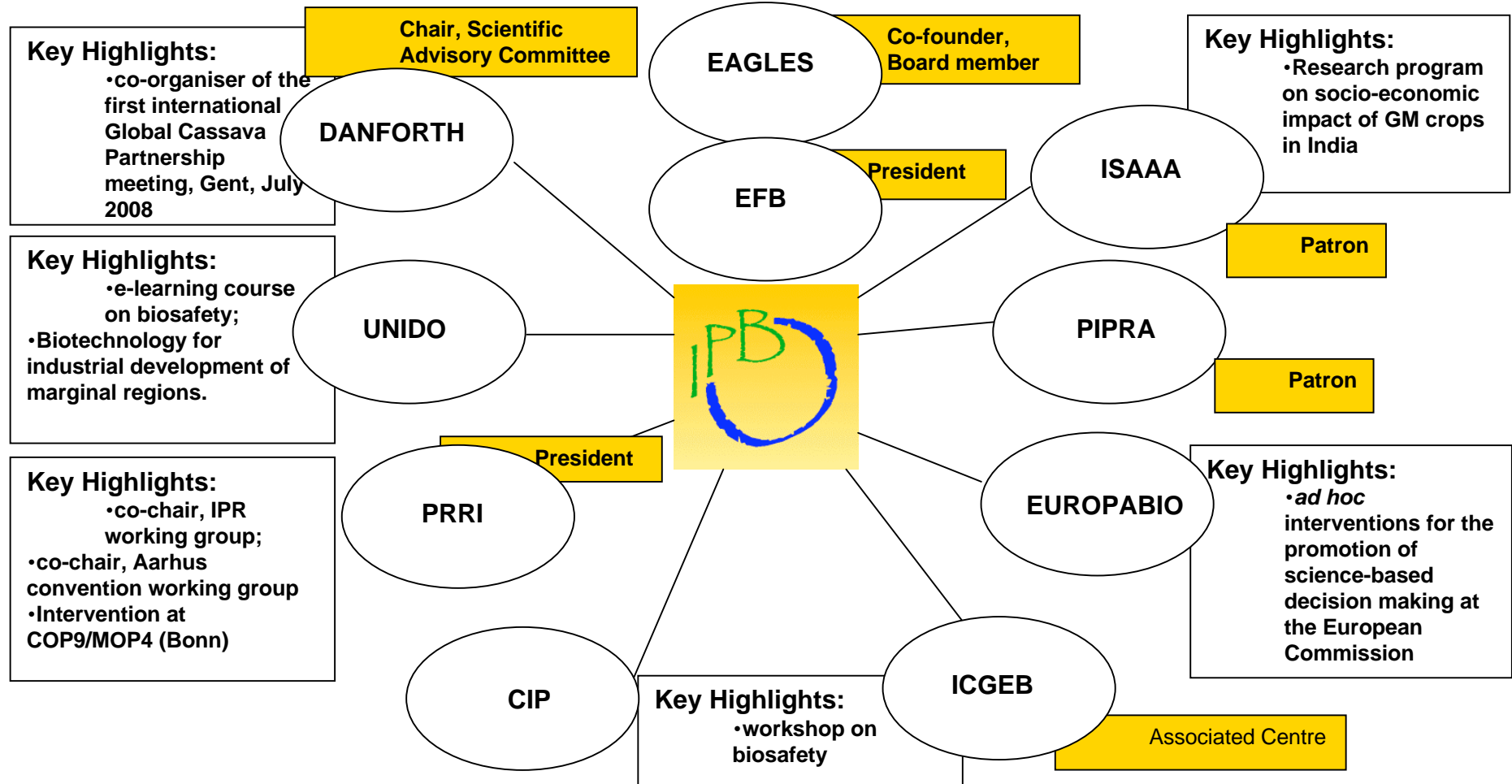


- Situated in Ghent University (Belgium) at the Dpt. of Plant Biotechnology and Genetics, in collaboration with Faculty of Bioscience Engineering.
- Founded in 2000 by em. Prof. Dr. M. Van Montagu.
- Evolved from the former Laboratory of Genetics, now the Plant Systems Department of the VIB (Flemish Institute of Biotechnology).
- I am professor of Molecular Genetics and Plant Biotechnology at the Faculty of Bioscience Engineering since 1993 and became director of IPBO in 2003.

Mission of IPBO

1. Contribute to technology transfer to developing countries
 - Stimulate North-South and South-South networking
 - Organisation of workshops, seminars, and conferences
 - Training
2. Dialogue with decision-makers and society
 - Creating awareness; importance of science-based and complete information (not only highlight risks but also benefits)
 - Active interventions (statements, negotiations at international agreements in relation to plant biotechnology)
 - Organisation of public debates

Present inter-organisational linkages of IPBO cooperations



Different levels of training

- M.Sc. (2 yrs) and Ph.D. level (plant biotechnology)
- Postgraduate training (1 yr, biosafety)
- Summercourses (1-2 weeks, biosafety, molecular breeding)
- Workshops (days-weeks, biosafety)

MSc and Phd

Advantages: forming the teachers

- Submergence in scientific culture
- Starting from the basics, building up, very intensive
- Interactive teaching as a model, multidisciplinary
- Critical thinking, literature discussions
- Practical training in the lab + MSc thesis

Disadvantages: long away from home, often do not go back

Sandwich Phd (16/48 months in Belgium): brain gain
instead of brain drain

Disadvantage: often occupied at home

Long- vs short-term training

Type	Advantages	Disadvantages
Long courses	<ul style="list-style-type: none">• Meets long-term needs<ul style="list-style-type: none">• Develops in-depth specialisation & competencies• Leads to academic accreditation	<ul style="list-style-type: none">• Can be expensive for students & course providers;• Not attractive to professionals
Short courses	<ul style="list-style-type: none">• Meets specific needs rapidly• Low operational costs• Can focus on job related skills, on specific needs	<ul style="list-style-type: none">• See long-term training advantages

Summer course on biosafety

- One week: introduction to biotechnology & biosafety, international biosafety regulatory systems, GMO detection, etc.
- Second week: practical sessions on “Preparation of notification for release of GMOs”
- Stopped.

Postgraduate course in Biosafety in Plant Biotechnology

- E-distance learning course
- In cooperation with UNIDO in an international framework
- One year, certificate from Ghent University, local faculty involved in teaching
- Two on campus periods of each two weeks

The e-Biosafety training programme

provides

- an inter-disciplinary study curriculum
- peer-reviewed didactic material developed by international eminent experts

aims at

- training the trainers
- enhancing institutional capacities of regulatory agencies

The e-Biosafety training programme

in Ghent is specifically targeted at

- regulators from governmental agencies
- open to lawyers and scientists
- Africa

e-Biosafety training

The course is comprised of 7 modules

1. Background (Plant breeding, molecular biology, tools of biotechnology)

2. Applications of gene technology

3. Basics of risk assessment and regulatory structures

4. Food and feed safety

5. Environmental safety

6. National and international regulatory systems

7. Risk perception and communication

Programme overview

- Course at Ghent University starts in October
- Modules are gradually accessible through internet
- First on campus (2 weeks)
- 40% of credits is through assignments, with a final dossier on risk assessment
- 10% of credits is on forum activity
- 50% of credits is on exams in June (second on campus period)

Programme overview

- Course at Ghent University starts in October
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- 10% of credits is on forum activity
- 50% of credits is on exams in June (second on campus period)

e-Biosafety: operational advantages

- Cost-effectiveness through a combination of distance learning and residential training sessions
- Minimizes geographical constraints
- Pooling of resources through networking overcomes institutional limitations

... but challenges still remain

Educational challenges

- Dealing with multigenic phenotypes and the next generation of enhanced foods & industrial crops; dealing with stacked events, RNAi technologies, etc.
- Tailored content responding to regional needs & priorities
- Hands-on training GMO-product identification, traceability analysis, monitoring, etc.

No science fiction!

Now labs incorporated in our first on campus.

First on campus later during the course on student's demand.

Logistic challenges

- Costs of curriculum development & maintenance
- Costs related to studentships
- Training material streamlined for specific needs
- Ensuring the continuous application of quality standards
- Suitable internet connection
- Language

Workshops- demo's

- Why? Acceptance of biotechnology depends on regulation, information, consultation, consumer choice and consumer benefit (Cormick , 2007).
- Add: information of scientists, politicians and public authorities.
- Add: Farmer choice and benefit

Forum de discussion

La patate douce modifiée génétiquement

Organisé conjointement par l'Institut des Sciences Agronomiques du Burundi (ISABU) et le Centre International de la Pomme de Terre (CIP) et IPBO

Vendredi 17 Avril de 14 à 18 heures.
Hôtel AMAHORO

14:00 – 14:15	Ouverture et Bienvenue Ambassadeur Salvator Ntshabose Directeur General, ISABU
14:00 – 14:15	Cadre général de discussion sur les OGM Dr. Marc Ghislain Conseiller en Biotechnologie, CIP
14:30 – 15:00	L'appréhension de ce qui est nouveau* Dr. Jan Kreuze Virologue moléculaire, CIP
15:00 – 15:30	Le manque de confiance en la réglementation* Dr. Robert Mwangi Améliorateur de la patate douce, NARO
15:30 – 16:00	Pause café
16:00 – 16:30	La domination des multinationales Dr. Jacob Hodoba D. Mignouna Directeur technique, AATF
16:30 – 17:00	L'impact négatif sur l'environnement* Professeur Godelieve Gheysen Biologiste moléculaire, Université de Gand
17:00 – 17:30	La rivalité avec les autres systèmes agricoles
17:30 – 18:00	Conclusions du forum par le panel d'experts

*Ces présentations seront données en Anglais suivies d'un résumé en Français



SASHA
Sweetpotato Action for
Security and Health in Africa

Workshops- demo's

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- Add: information of scientists, politicians and public authorities.
- Add: Farmer choice and benefit

Also and even more so in Europe!!

More demo field trials urgently needed in Europe to counter the anti-science thinking.

Workshops- demo's

Also in Europe!!



Field trial
Phytophthora
resistant GM-
potato (NL)

Thank you for your attention!

e-Biosafety network



Programme overview



postgraduaatoverzicht.htm