



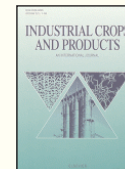
IENICA



Interactive European Network for Industrial Crops and their Applications

Newsletter number 13

August 2001



3rd International Congress & Trade Show Green-Tech® 2002

with

5th European Symposium on Industrial Crops and Products

organised by Europoint BV, IENICA & Elsevier Science

24, 25 & 26 April 2002
Floriade, The Netherlands

International Congress & Exhibition on Sustainable and Renewable Raw Materials

Towards a Biobased Economy

Unique Location: Feel the art of nature

The congress will take place at the 5th Floriade (<http://www.floriade.nl/>), World Horticultural Show, on a site near Amsterdam and Schiphol Airport, the Netherlands. The Floriade is held every 10 years and is the biggest horticultural show in the world. From mid April until mid October 2002 approximately 3 million people will enjoy the beauty of the Floriade. The show will cover 65 hectares with pavilions from over 25 countries and will be a spectacular setting for this congress. Of course all participants to the congress will receive one free pass to the event.

Introduction

Sustainable Development was defined by the World Commission on Environment and Development (the Brundtland Commission) as development that "meets our present needs without compromising ability of future generations to meet theirs". Sustainable development is now accepted by governments, industry and the public as a necessary goal for achieving social, economic and environmental objectives.

The four main objectives are:

- Prudent use of natural resources
- Effective protection of the environment
- Maintenance of high and stable levels of economic growth and employment
- Social progress which recognises the needs of everyone

To achieve this sustainable development we need to create a biobased economy.

The time is right for biobased products and bioenergy opportunities. Biobased products and bioenergy are chemicals, materials, and fuels from resources such as agricultural products and their residues, biomass or woody material. Biomass technologies can provide new uses and markets for farm products, enhance our local energy production, improve air and water quality, and reduce net greenhouse gas emissions.

Scientific breakthroughs in plant sciences and biotechnology will soon make renewable biobased products and bioenergy competitive substitutes for



IENICA is a workstream in the INFORM-IENICA project

non-renewable, carbon-based products such as fossil fuels, building materials, industrial chemicals, and pharmaceuticals. Last year the USA National Academy of Sciences reported, "Biological sciences are likely to make the same impact on the formation of new industries in the next century as the physical and chemical sciences have had on industrial development throughout the century now coming to a close."

The main focus of this event is threefold:

- Latest scientific and commercial breakthroughs
- How to speed up the process: technical, environmental and regulatory issues
- Useful information for people in industry, government and universities alike

The Congress & Trade Show

- Lectures on policy, legislation, regulations, economics and marketing
- Lectures on technological trends and breakthroughs
- Case studies
- Panel discussions
- Poster discussions
- Informal theme-based meetings
- Green-Tech Award: to the most innovative product or development shown at the event
- Guided visit to the Floriade

Sponsoring Journal

This congress is organised in association with the journal "Industrial Crops and Products" (<http://www.elsevier.nl/locate/indcrop>) which is a unique source of academic and industrial research on industrial (non-food) crops and products, containing both crop-oriented and product-oriented research papers.

The journal is widely indexed and abstracted. It is an essential publication for researchers based in agriculture and research/managers in industry interested in novel, agro-based feedstocks and in finding sustainable alternatives to petrochemical raw materials. Selected and edited papers from this congress will be published in a special issue of this journal covering the event.

Topics

- Policy
- Agriculture
- Market
- Biocascading
- Eco-design
- Quality
- Environment
- Biotechnology
- Regulations
- Economy
- Materials

For whom?

- (Inter)national and local authorities
- Scientists
- Companies interested in sustainable and renewable (agro-based) raw materials
- Consultants
- (Eco)designers
- Consumer organisations
- Press

Aim of the Congress & Trade Show

- Bring together the players in the different groups of renewable raw materials
- Present the latest technological breakthroughs contributing to lower costs and higher quality of renewable raw materials
- Present the latest European policy directives on environment, agriculture and taxes
- Horizontal exchange of technological, economic and market barriers to a wider utilisation of renewable raw materials
- Present successful industrial initiatives using renewable raw materials
- Stimulate the dialogue between producers and users of raw materials
- Identify future trends in the use of renewable raw materials
- Exhibit products made with renewable materials already in the market and innovative applications of renewable raw materials

Organising committee

Mr. M. Askew Co-ordinator of the Interactive European Network for Industrial Crops and their Applications (IENICA)
Prof. P. Struik, University of Wageningen, The Dutch representative of IENICA^{NL}
Prof. J. Derksen Chairman of the Dutch Platform of Renewable Raw Materials^{NL}
Mr. I. Bartle, ACTIN^{UK}
Mr. M. Dohy, Agrice^F
Dr. A. Schütte, FNR^G
Ir. M.H. Novak, Valonal^B
Mr. D. Wittmeyer Chairman of the European Renewable Raw Materials Association (ERRMA)
Dr. R. Horster, Cargill Industrial Oils & Lubricants^{NL}
Mrs. F. Dickson, Cargill Industrial Oils & Lubricants^{UK}
Prof. R. Kessler & Prof. R. Kohler, Institut für Angewandte Forschung^G
Dr. E. van den Heuvel, Novem^{NL}
Dr. U. Schmidt, Haltermann GmbH^G

Visit the IENICA website at: www.csl.gov.uk/ienica

Mr. E. de Jong, Ph.D., Chief Editor of the Journal
"Industrial Crops and Products"^{NL}

Mrs. J. Taylor, Senior Publishing Editor Agronomy,
Plant & Soil Sciences at Elsevier Science^{NL}

Mr. J. Haarhuis Director of Europoint BV^{NL}

Mrs. T. Lopes, Ph.D., BioTop Consultancy as Program
Manager^{NL}

Fees

Delegate: Euro 395.00
University delegate: Euro 355.00 (*identification required*)
Student: Euro 35.00
Poster presentation: Euro 115.00
Table top (3m x 2m): Euro 1000.00 (*wall, table and chairs*)
Stands larger than 3m x 2m: Upon request

Call for Papers

Delegates intending to submit a paper for oral and/or
poster presentation are requested to send the proposed
titles and a short abstract by **Friday 28 December 2001**

to: Mrs. T. Lopes, PhD, Program Manager
Tel: +31 (0)71 5231 391
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For further information contact: Europoint b.v.

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Government Industry Forum for Non-food Crops:

The UK's first Government-Industry Forum on non-food uses of crops was launched by DEFRA on 4th May 2001. The Forum has been set up in response to a House of Lords Select Committee report, to provide strategic advice to government and industry on the development of non-food uses of crops. To achieve this the Forum will review technological developments and market opportunities for non-food uses of crops, make recommendations on policy affecting non-food uses of crops and on R&D, and publish an annual report. The Forum launched its new website on 1st August 2001 at www.defra.gov.uk/farm/gifnfc. The website includes information on the Forum, its members, its programme of case studies as well as papers for, and records of, meetings held to date. The website also provides the facility for interactive discussion on specific questions posted to assist the Forum's various case studies, and for other information to be brought to the Forum's

attention. Stakeholders in the industry are invited to register with the website and take part in the on-line discussions.

Experiences with *Miscanthus* in Ireland

Miscanthus is a genus of tall perennial grasses originating in East Asia, which over the past 15 years has attracted considerable attention in Europe as a potential biomass crop. The rhizomatous nature combined with C₄ photosynthesis reduces *Miscanthus* spp. fertiliser input requirements while producing high yields. Most reported trials have used a vigorous sterile clone *M. x giganteus* which has been propagated vegetatively either by rhizome cutting or *in vitro* culture. Annual yields from a crop in southern Europe with irrigation can be in excess of 30 tonnes dry matter ha⁻¹ two years after planting. In Northern Europe without irrigation, the crop typically requires three years establishment before autumn yields of 10 to 20 tonnes dry matter ha⁻¹ can be expected. The quality of the harvested material is in some respects similar to that of wood. Delaying harvest time from autumn until the following spring causes a 30 – 50% decrease in the quantity of harvestable biomass, but a significant increase in quality for combustion through reduced moisture and nutrient contents. This delay also allows recycling of the nutrients to the rhizomes. The main limitations to economic production of *Miscanthus* from *M. x giganteus* are the high establishment costs of sterile plants, poor overwintering at some sites particularly in young plants and insufficient water supply in southern regions of Europe. New agronomic techniques and new genotypes with improved characteristics are being developed over the wide range of climatic conditions in Europe.

Current research indicates that there is significant genetic variation within the *Miscanthus* genus to enable identification of genotypes that will survive and out-yield many other biomass species. Financed by the European commission, breeding methods for the production of new *Miscanthus* hybrids are being developed using genetic material from the gene pools of *M. sinensis* and *M. sacchariflorus*.

In Ireland, the oldest *Miscanthus* plantation is with the *M. x giganteus* clone, and was planted in Co. Tipperary in 1990. Yields from this trial have been monitored for ten years and are producing an annual yield between 13 and 16 tonnes dry matter ha⁻¹. Recent investigations have been made to optimise harvest time and the necessary field storage time of the cut stems needed to

reduce the moisture content below 15 %. This year, we are testing the establishment of *M. x giganteus* on an area of cut-away peatland. These peatlands have mainly been exploited for electricity production and consequently there is an existing infrastructure of small power stations. If *M. x giganteus* can yield 8-10 tonnes dry matter ha⁻¹ annually on the cut-away this may be an attractive option for the re-vegetation of 50 000 hectares of derelict land.



Industrial utilisation of *Miscanthus* has focussed on combustion. Chemical analyses show wide genotypic variability in chlorine and potassium. Ash melting points vary between 600 and 1000 °C and are generally lower than wood. Non-combustion uses for *Miscanthus* have focussed on the extractable fibre. Finnish and Italian researchers have shown that *Miscanthus* is easy to cook to low kappa values needed for paper production. Irish tests have shown that *Miscanthus* can be blended to 20 % with wood waste for the production of medium density fibreboards. Future applications for *Miscanthus* follow those currently being developed for cereal straws and wood chips.

Recommended further reading on *Miscanthus* as a biomass crop include the recently published book '*Miscanthus for Energy and Fibre*' edited by M. B. Jones (Trinity College Dublin, Ireland) and M. Walsh (Hyperion, Co. Cork, Ireland) 2001. This book, with contributions from throughout Europe brings together results from trials made with *M. x giganteus*. A shorter review by Lewandowski et al. 2000 (University of Hohenheim, Stuttgart) '*Miscanthus: European experience with a novel energy crop*' in the journal *Biomass and Bioenergy* (vol 19, pages 209-227) succinctly reviews the state of the art, including recent breeding developments.

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FORTHCOMING INDUSTRIAL CROPS EVENTS

5 - 6 Sept 2001

3rd International Symposium Werkstoffe aus Nachwachsenden Rohstoffen

Erfurt, Germany

Contact: Dr.-Ing. Günter Matter

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18 - 22 Sept 2001

Bast Fibrous Plants at the Turn of the Second and Third Millennium

A conference of the FAO European Co-operative Research Network on Flax and other Bast Plants

Shenyang City, China,

Contact: Maria Mackiewicz-Talarczyk, Secretary of the Network

Tel: +48/61/ 8 22 48 15 ext. Maria

Fax: +48/61/ 8 41 78 30

E-mail: netflax@iwn.inf.poznan.pl

26 - 29 Sept 2001

First Baltic Symposium on Environmental Chemistry

University of Tartu, Estonia

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