



Wageningen Paper and Board

Newsletter for the paper and board industry and its suppliers
January 2005, Year 2, 1st issue

'Producing more functionality using less resources'

'Ecotarget': Targeting major savings in papermaking

Enhancing the competitiveness of the European pulp and paper sector will be a major challenge for the future. However, reducing its environmental impact remains a very important issue. This is the overall objective of 'Ecotarget', a new research project of 4 years, having its kick-off last December 14 and 15 at STFI-Packforsk. All the main players from the European pulp and paper industry and research organisations will contribute to this project.

Improvements in production efficiency and product quality will have to go hand in hand with environmental and societal considerations. The leading idea of the project is making more and better products with less use of raw materials, energy and water, and at the same time reduce residues, waste and emissions. Each individual idea has a potential of 20-30 % reduction in one or several of these areas.

Ecotarget has five technical subprojects: virgin fibres, recycled fibres, furnish solutions, papermaking solutions, and process water. 26 European partners (companies, research institutes and universities) co-operate in this project that is partly sponsored by the European Commission.

Ed de Jong is member of the project General Assembly. "This project is an absolute challenge to increase competitiveness of the paper industry in the long term. In the Netherlands, the paper industry has already a good position regarding the use of recycled fibres and the reduction of waste and energy, but we have to ensure that we will stay in front in the future."



Henry van der Valk and Ed de Jong

Wageningen UR Paper and Board is active in the subproject furnish solutions that aims to improve the properties of recycled fibres. Henry van der Valk, one of the senior researchers involved in the project: "We focus on the improvement of machine drainability for production of particularly linerboard by means of enzymes. Activities include dynamic simulations of enzyme treatments and practical trials "

Wageningen UR Paper and Board further co-operates with the Dutch Competence Centre Paper and Board in a workpackage dealing with new technologies for the re-use of recycling rejects.

For the official Ecotarget website, please visit www.ecotarget.com.

More information: Henry van der Valk, +31 317 475 225

News

Lightweight Paper and Board

A new project entitled 'Lightweight paper and board' will start at the beginning of 2005. The project aims at reducing the necessary grammage for paper and board for packaging applications. Focus is on the parameters that influence the creasing and folding of the board and board properties in a box.

The project will run for 3 years in co-operation with Kappa Packaging, De Eendracht Karton, the University of Eindhoven, Zwick and the Competence Centre Paper and Board. The project has been granted subsidy by the ministry of Economic Affairs. Kick-off meeting is scheduled for March 9.

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Energy Transition

The Dutch paper industry has initiated an energy transition project to reduce the total energy consumption for end products in the paper production chain.

Aim: 50% reduction in 2020!

This year a competition between two teams of scientists and consultants has started to define transition routes how to reach this ambitious goal. Annita Westenbroek of Wageningen UR Paper and Board is part of the science team. In autumn 2005, a jury will select the most valuable and interesting topics. From this selection, several research projects will be started by the Competence Centre Paper and Board, some of them in co-operation with Wageningen UR. See also www.vnp-online.nl.

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How to keep written information in good shape

An archive box for tropical climate zones

Historical information can be invaluable for future generations. Therefore archives are kept to ensure that information on paper will be available whenever necessary. In tropical climates it is difficult to keep archive material in good condition due to high temperatures and humidity and sometimes lack of adequate storage conditions.

In co-operation with the National Archives of the Netherlands, Wageningen UR works on a new concept for an archive box that can be used in tropical countries. In tropical countries, archives are subject to higher temperatures and humidity. Although some archives do have climate control, storage conditions are not always optimal because of limited resources and unreliable power supply. This means that paper quality will decrease, and the material will become a suitable growth environment for moulds and insects.



Example of damage by moisture and mould forming in VOC archives (www.tanap.net)

A new archive box should therefore have adequate inhibition of mould growth (built-in mechanism to decrease relative humidity), be relatively independent of power supply, and should be affordable and durable.

Robin Sinke, project manager: "To tackle this problem modelling seems to be the best approach due to the complexity and number of processes involved. Furthermore, empirical evaluation is hardly possible to the time scale relevant for archive storage. "

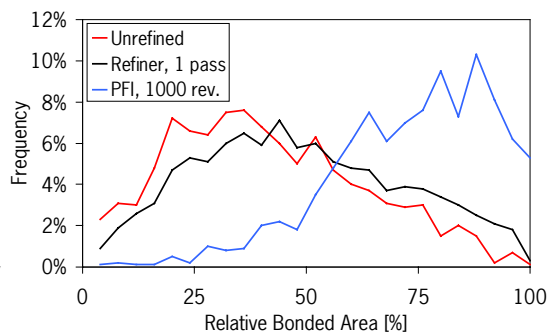
Research until now resulted in a computer model that simulates the humidity in and around the archive box and the inclusion of absorber material to reduce humidity after exposure. This model will be further developed for different storage and climate conditions and supported by real experiments on archive paper.

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Apparatus: Cyberflex®

The Cyberflex has been purchased by the Centre of Competence Paper and Board and is available at Wageningen UR Paper and Board. It measures wet fibre flexibility (WWF) and relative bonded area (RBA) of fibres.

In the Fibre Raw Materials program measurement of WWF and RBA was intensively used to study the effect of mechanical treatment and recycling. In the project Optimisation Refining, the change in RBA frequency distribution was used to get an indication of the amount of treated fibres in mill refining and laboratory beating (refining efficiency).



The graph shows the change in RBA frequency distribution as a function of treatment. As an example, the industrial refiner treats only a 14% while the PFI mill treats 58%. At the PIRA Refining Conference these results will be presented (see Events).

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Events

Presentations from Wageningen UR

PIRA Refining and Mechanical Pulping Conference, March 2-3, Barcelona.

J.C. Dekker: 'How many fibres see the refiner? Amount of changed fibres measured by RBA.'

PIRA Fibre Engineering Impact Forum, March 4, Barcelona, H.C. van der Valk:

'Enzyme technology for improved drainability of recycled paper.'

- COST E41, Analytical tools with applications for wood and pulping chemistry, April 25-26, Barcelona
- 7th International Lignin Forum, April 27-28, Barcelona.

E. de Jong and R.J.A. Gosselink will give presentations on both meetings.

Workshops

Additives in Paper and Board

February 21, organised by the Centre of Competence Paper and Board.

Study trip refining

Study trip for refiner technologists from the Dutch Paper and Board Industry (January-31 - February 2). Visit to the Voith research facilities in Ravensburg and different mills in Germany (in co-operation with Voith, Andritz, and the Centre of Competence Paper and Board).

Wageningen UR Paper and Board

Major Research Themes

Fibre Raw Materials

Fibre quality and choice related to processing and end product requirements

Fibre Processing

Reduced energy consumption during fibre processing and in the total paper production line

Papermaking Chemistry

Synthesis of new or more effective chemicals based on natural raw materials

End Product Quality

Insight in product requirements based on converting and consumer demands, enhancing end product performance and development of packaging

By-stream Upgrading / Processing

Creating commercial value for solid by-streams from pulp and paper production processes

Colophon

Wageningen Paper and Board is meant to inform all contacts of WUR Paper and Board about research activities, new developments and projects. The newsletter will be issued 3 times a year and is also available on the website, www.paperandboard.nl.
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