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Research area: Product aims

Raw materials // Arable crops

Key words:

non-wood raw materials, classification, characterisation, processing

TITLE:**Development of a provision of services for an efficient assessment of alternative paper raw materials and for the preparation of technical-economical utilisation concepts****Background/Problem area**

Paper manufacturers are facing increasing raw material prices for pulp and paper production. This leads to a decreasing profitability of paper production. The input of so far not used raw materials predominantly from the agricultural sector is an option that was not assessed very intensively until now. Expensive fibre raw materials based on wood are able to be partly replaced in several product segments. At the same time, the use of residues from other sectors leads to an increased sustainability of paper production. Furthermore first results in this field of research show, that with some raw materials, also technological properties of the targeted products can be improved.

Objectives/Research results

The project aims at the development of a systematic methodology as a core element of a provision of services to assess alternative raw materials for papermaking in a target-oriented and cost efficient way.

In the project progression raw materials were classified according to their origin and especially according to their characteristics. A basic differentiation between fiber-like and filler-like materials led to individual pretreatment and characterization strategies for different types of biomass.

Characterisation methods were tested on representative raw materials. Characteristics such as surface charge and particle size and chemical composition were determined. The raw materials were then used to partly replace fibre raw materials in laboratory sheets. Furthermore the influence of pretreatment conditions on paper properties was examined.

During further progress of the project, impacts of the raw materials on the papermaking process were investigated. Furthermore methodologies for the assessment of the legal and economic status of the new paper products will be generated.

Application/Economic benefits

The developed provision of services aims at two groups of customers. On the one hand, there are raw materials suppliers, who are looking for new application routes of their products. On the other hand, there are paper manufacturers who are looking for alternative raw materials to use in their paper. The development of a more efficient methodology to assess possible raw materials regarding their papermaking potential leads to a faster and more economical way to decide which raw materials are suitable to be used for a certain product or vice versa.

Period of time: 01.11.2013–31.10.2015

Remarks

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