

„BIO-RETTING“ – a single step enzymatic post-treatment process boosting the bast fibre resource efficiency

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Urgent need of the Circular economy model enforcement and search for the waste-less utilization of resources initiated the INOTEX wide study of intensified methods of bast fibre extraction – from fine fibre flax to the robust hemp. To ensure wider use of bast fibres it is necessary to overcome some existing barriers related to the optimum yield and reproducible quality and properties of fibres. Recent climate changes (warming, scarcity of annual precipitation) raise the seasonal nonuniformity of crop and influence negatively the conventional field dew-retting process.

Customised enzymatic boosters (TEXAZYM –INOTEX) that are able to concure with the natural microbial dew-retting enzymes by „Bio-retting“ help to get over the insufficient destroy of natural glues to get better cleaning and elementarization of fibre bundles. Efficiency was confirmed by repeated seasonal trials and testing under different conditions (climate, processing on demand of end-user requirement on the fibre quality). Customised for both – efficient post harvest treatment of stalks on the field (by spraying) as well as for an additional bath processing steps (on the loose fibre dyeing devices). Inspired by rising cultivation of oilseed flax (corresponding with Ω 3-FA rich nutrient popularity) „bio-retting“ was confirmed as an encouraging step to its complex waste-less utilization improving the effectiveness of crop. New possible oil-seed flax fibre applications (incl. blends with bio-PA fibres for the home textiles) were proved. This topic fully correspond with the European Textile Technology Platform sustainability and innovation strategy.