

BioWILL concentrates on a circular economy and production chain where waste generated is fed back into the production chain. Presently there is no extractive-based cascade biorefinery in the EU: the installation of a refinery such as this has significant economic potential. BioWILL focuses on high value natural extractives for skincare applications, while using the bark-free pulp for manufacturing food packaging materials, with any waste and residues being utilised for biogas and biofertilizers. BioWILL aims to create a biorefinery model in Northwest Europe region using willow. Through thorough analysis in various areas, like the market, regulations, finances, technology, and environment, a comprehensive "toolkit" including Life Cycle Assessments and business models will be created. This toolkit will then be shared with the public through a widespread communication effort. There are 39 different willow tree varieties have been successfully grown. High value natural medicinal components have been identified in the willow bark extracts which include salicin, catechin and other polyphenols. Laboratory biological efficacy studies on human skin cells have shown willow bark extracts to exhibit protective effects such as antioxidant, wound healing and anti-inflammatory properties. The remaining willow pulp fraction has potential for use in the production of biofertilizers and biofuels.