



Bio-based Industries
Consortium



BEONNAT - INNOVATIVE VALUE CHAINS FROM TREE & SHRUB SPECIES GROWN IN MARGINAL LANDS AS A SOURCE OF BIOMASS FOR BIO-BASED INDUSTRIES

BeonNAT is a project that aims to develop innovative products from underutilised plant biomass as feedstock for the bio-based industry. The feed biomass will be derived from shrubs, trees and other woody species. The scope of the project ranges from the cultivation and harvesting of selected species, to the extraction and purification of oils and vegetable extracts, paper manufacturing, biochar and active carbon production, among others.

The raw material that will be used to obtain organic products will come from both cultivated and wild species. The research and selection of underutilized species with the potential to generate organic products, under severe ecological requirements and a suitable chemical composition, is one of the main targets of this project. The harvested species will be the source of biomass utilised by the different companies, that constitute the **BeonNAT** project consortium, for the processing and production of the new bio-based products.

The consortium will study how to make use of marginal and underutilised land, as well as, the potential of tree and shrub species to grow properly on the selected land. The biochemical and ecological capabilities of the harvested biomass and its potential as feedstock for the industrial processes involved will be analysed too.

Furthermore, a comparison between harvested biomass of cultivated and wild species will be made. At the same time, the consortium will investigate the best initial soil conditions, cultivation and harvesting techniques and technologies and other factors affecting the quality and quantity of the crops. During the treatment of the post-harvest biomass, the possibility of optimising the refining and purification processes will be assessed.

The innovative and bio-based products provided by **BeonNAT** will be developed in several Work Packages (WP): essential oils and vegetable extracts (WP3), bioplastics for packaging (WP4), biochar and activated carbon (WP5), new absorbents for the pet industry (WP6), cellulose pulp and agglomerates (WP7).

A key aspect in the achievement of this project is the accurate analysis of the processes involved. The first batches will be performed on a pilot scale, while simultaneously, the way to carry out an industrial scaling will be studied in order to increase productivity and decrease the associated costs. Everything will be done with the aim of achieving maximum performance and prioritizing sustainability in all project stages.

BeonNAT will last 60 months and received funding from the European Union's Horizon 2020 research and innovation programme, specifically from the H2020-BBI-JTI-2019 call. The total cost is estimated at 5,686,476.25 € and will receive funding of 4,980,430.28 €.

Project partners

The consortium is composed of sixteen organizations from seven countries. CIEMAT (Project Coordinator) (Spain), FUNDACION CENTRO DE SERVICIOS Y PROMOCIÓN FORESTAL Y DE SU INDUSTRIA DE CASTILLA Y LEÓN (Spain), CONSORZIO PER LA RICERCA E LA DIMOSTRAZIONE SULLE ENERGIE RINNOVABILI (Italy), AIMPLAS (Spain), LEIBNIZ INSTITUT FUER AGRARTECHNIK UND BIOOEKONOMIE (Germany), BRANDENBURGISCHE TECHNISCHE UNIVERSITAT COTTBUS-SENFTENBERG (Germany), UNIVERSITATEA STEFAN CEL MARE DIN SUCEAVA (Romania), INSTITUTO POLITECNICO DE BRAGANCA (Portugal), CONTACTICA S. L. (Spain), IDOASIS 2002 S.L. (Spain), EL JARPIL S.L. (Spain), ENVIROHEMP S.L. (Spain), NNFCC LIMITED (United Kingdom), LABORATORIOS MAVERICK S.L. (Spain) and ASOCIACION PARA LA CERTIFICACION ESPAÑOLA FORESTAL (Spain) TOLSA (Spain).

For more information

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