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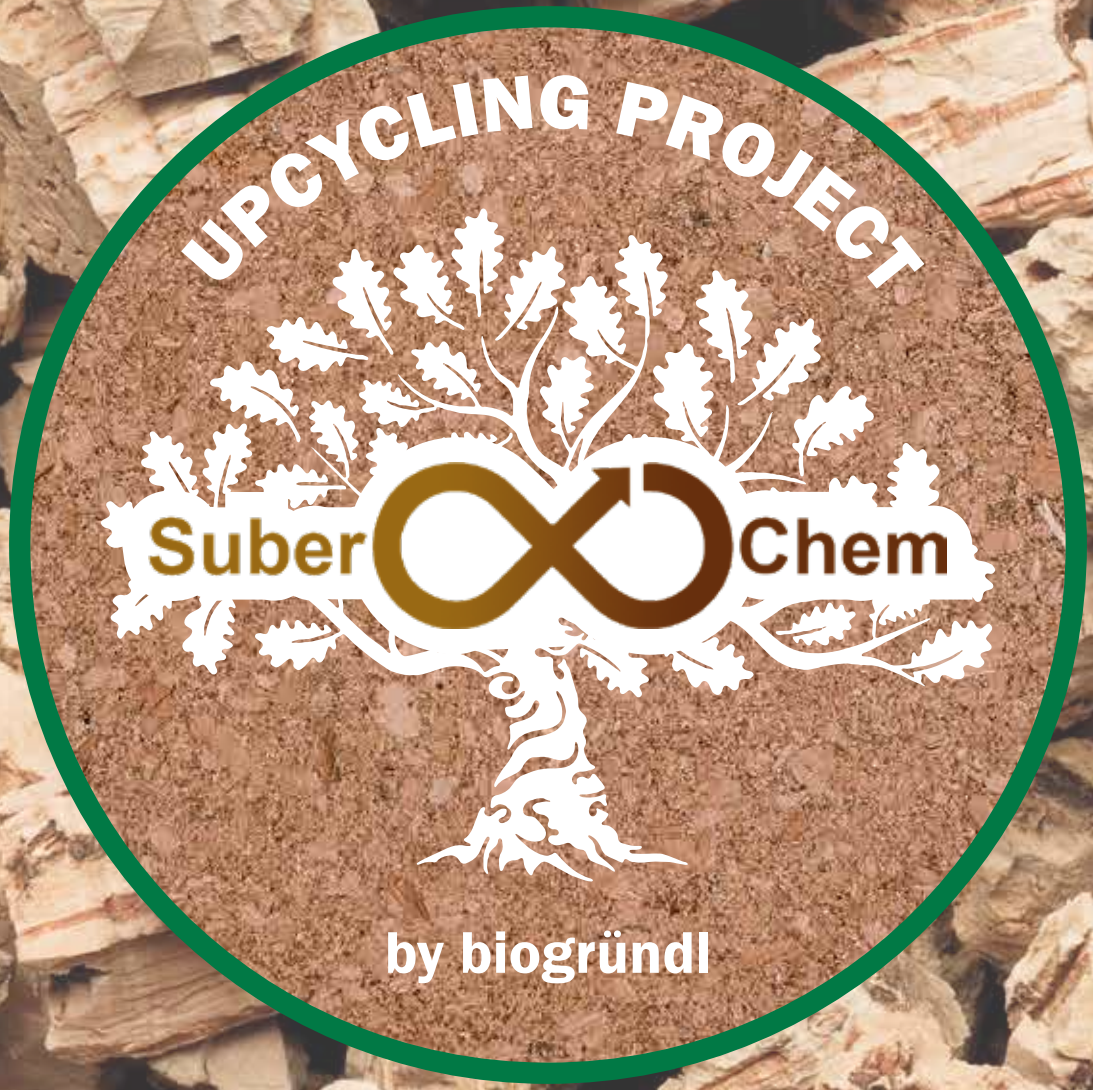
CIRCULAR ECONOMY
OF CORK



RESEARCH OF AN ANTI-AGING EFFECTIVENESS PROJECT

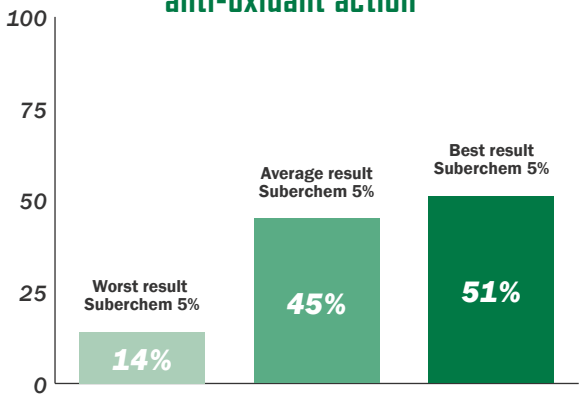
The company Biogründl, S.L. has launched the SUBERCHEM by BIOGRÜNDL project, which aims to benefit from the antioxidant properties of cork into cosmetic products.

Biogründl, S.L. has studied the action of polyphenols, antioxidant substances present in cork, to incorporate them into cosmetic products with anti-aging properties.

Biogründl, S.L. has decided to leverage these properties as active materials to delay aging. This study has been based on the principles of sustainability and circular economy, using sustainable and clean methodologies, as well as solvents of plant origin such as glycerin or vegetable oils avoiding petroleum derivatives and synthetics or animal origin.

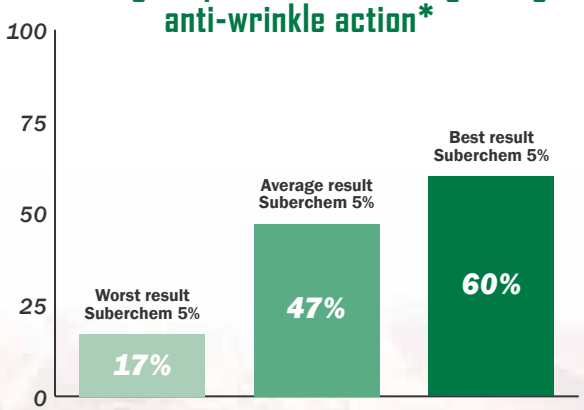
SUBERCHEM by BIOGRÜNDL project is also based on the principles of upcycling. SUBERCHEM by BIOGRÜNDL seeks to take advantage of, and even re-use of different elements of the cork industry. This use will allow a second application to cork, with a higher added value.

Average improvement (%) regarding anti-oxidant action*



(*) Anti-oxidant action was evaluated by determination of lipid randicity degree found in volunteers skin sample.

Average improvement (%) regarding anti-wrinkle action*



(*) Anti-wrinkle action was determined by augmented vision of depth and length of furrows, wrinkles and expression lines from volunteers.

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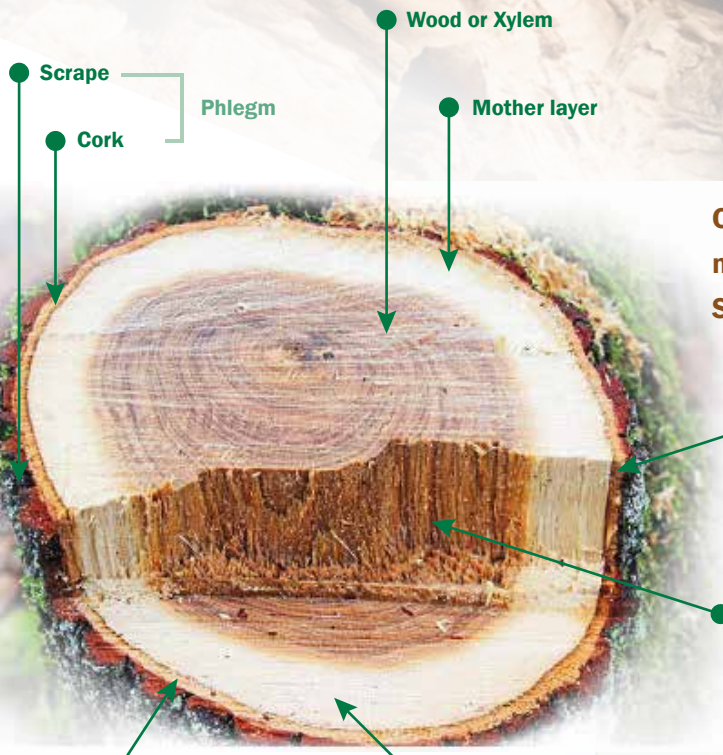
by biogründl

After a long research carried out in collaboration with institutions and associations dedicated to the cork industry, Biogründl, S.L. presents its project SUBERCHEM by BIOGRÜNDL, a project encompassed within the so-called circular economy, through the use of sustainable and clean methodologies.

The cork tree (Quercus suber L.) belongs to the Fagaceae family. It is a tall tree, covered in its trunk by a bark from which the cork is obtained, which, is formed due to the activity of a secondary meristem: the cork cambium. This bark protects the trunk from shocks and wounds, as well as from the attack of parasites and inclement environment; it is a secondary tissue installed in the peripheral area of the stem and root and is responsible for the growth in thickness of the plant. This bark is also called cambium suberosus, because it is the tissue from which the cork is formed. This is a plant tissue of cells in which the cellulose of its membrane is transformed into suberine, a high molecular weight ester formed by fatty acids, both unsaturated and unsaturated that bind together to form the cork.



Cork tree, from which cork is obtained, lives mostly and it is employed for use in industry in Spain, Portugal, Morocco and Tunisia.

INCI NAME

Quercus Suber Bark Extract

USE AND APPLICATION OF THE BARK FROM CORK TREE

Most cork production is used for the preparation of stoppers to the wine industry, but a very large amount of cork is wasted as it is not useful for such use. Among this amount of cork that is not used, much of it is very rich in antioxidant materials, precisely because it is in permanent contact with the environment. This fact justifies its application in the cosmetic industry, due to its antioxidant and neutralizing of free radical properties, thus, as a result, by its anti-aging action on the skin. In addition, has been further investigated the content of phenolic and polyphenolic acids; powerful antioxidants and free radical scavenger. Also, the content of oleoresins, organic acids and mineral salts contained in the cork.

Germination and grown

35 - 40 years

First extraction

13 years

Second extraction

13 years

Reproductive extraction -1

13 years

Reproductive extraction -2

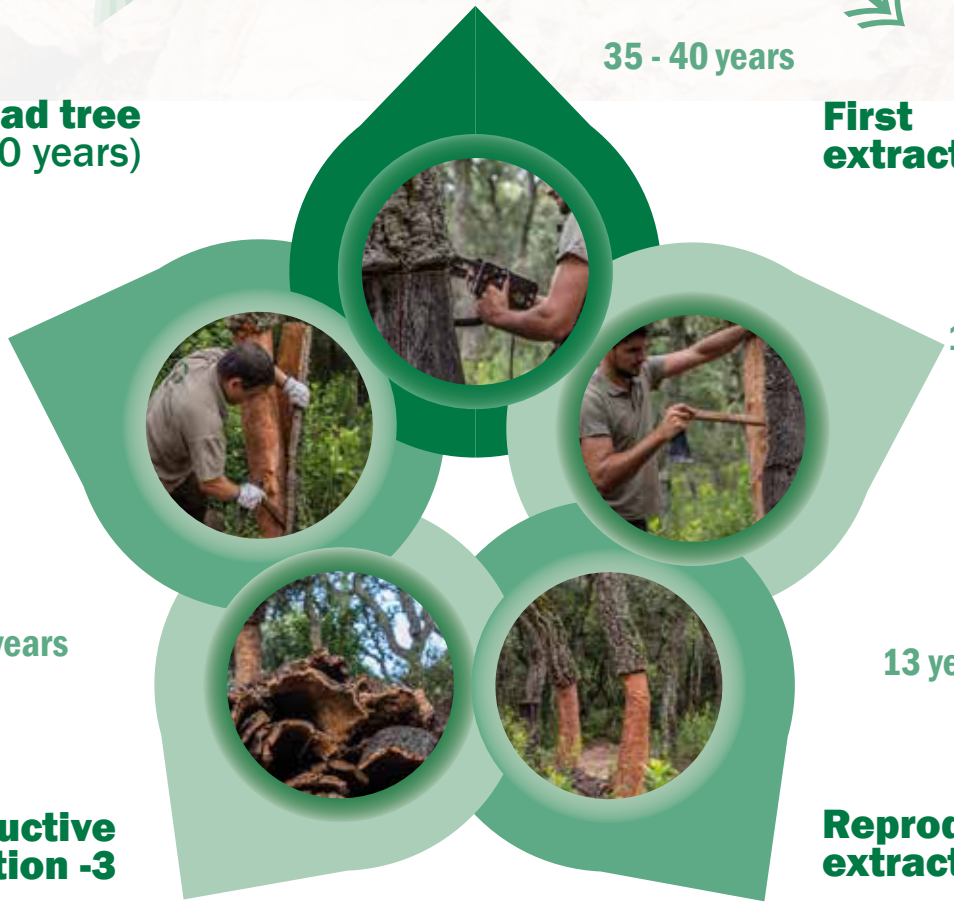
13 years

Reproductive extraction -3

13 years

Reproductive extraction

Dead tree (200 years)



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UPCYCLING PROJECT
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