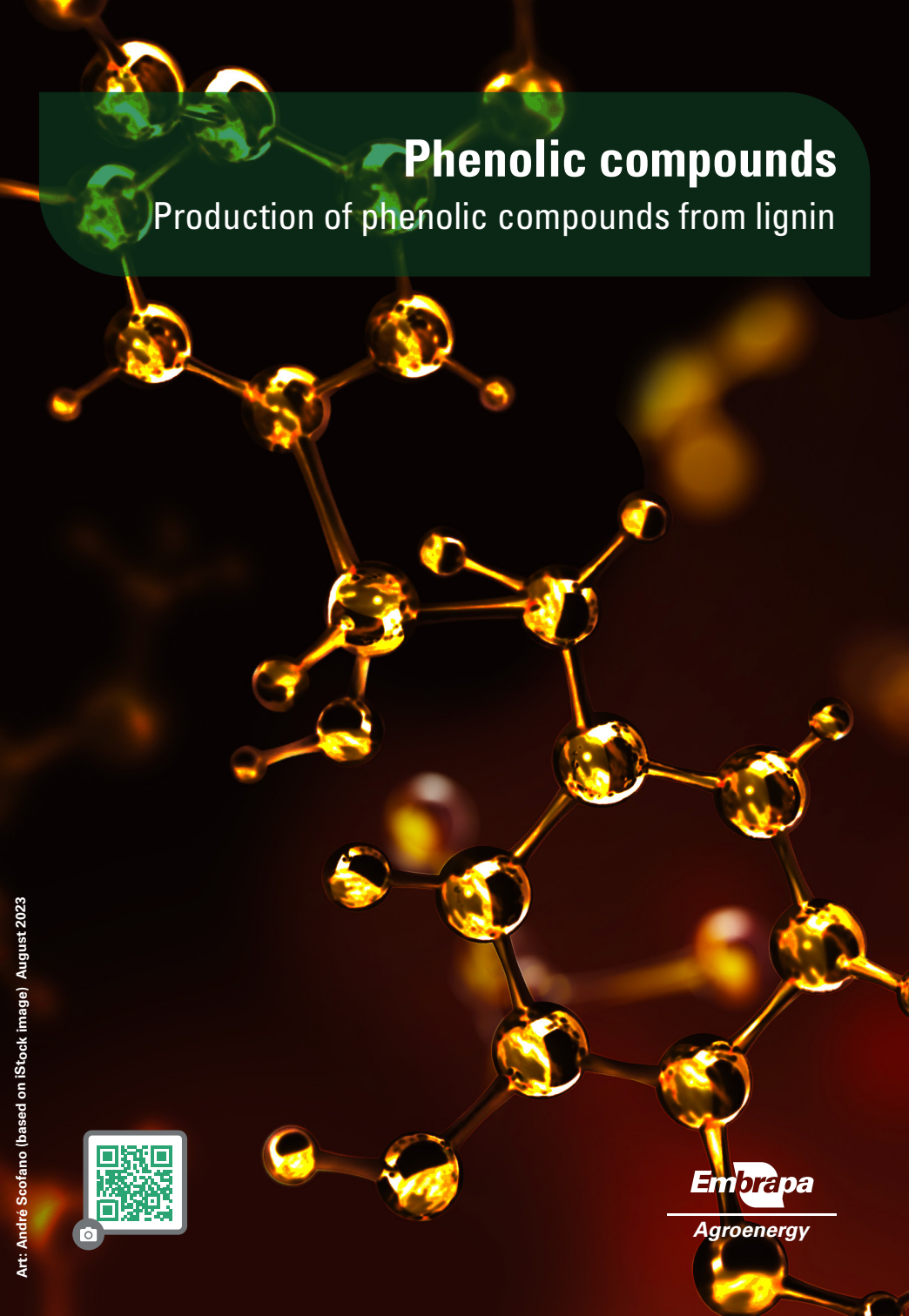
Phenolic compounds

Production of phenolic compounds from lignin



Art: André Scofano (based on iStock image) August 2023

Embrapa
Agroenergy

Production of phenolic compounds from lignin

Raw material	Process	End Product
Lignin	Catalytic Hydrogenation	Phenolic compounds

Obtaining phenolic compounds from the depolymerization of industrial lignin (e.g. black liquor lignin or organosolv) by catalytic hydrogenation. Depolymerization can be optimized in order to generate compounds of interest in higher yields. The compounds are characterized and quantified by advanced analytical tools and can be used integrally or separated and purified by chromatographic processes, depending on the target application. The phenolic compounds produced are described as having applications such as flavoring, antitumor drugs, antimicrobials, antioxidants, hepatoprotective agents, among others. These compounds were quantified as organosolv lignin products and qualitatively confirmed as black liquor lignin products.

Applications

+ Fine chemical industry (natural antioxidants, paints, varnishes, adhesives, agrochemicals, etc.).
+ Structural reinforcement of polymers (rubbers and plastics).
+ Adding value to waste lignin from pulp and paper industries.

Advantages

+ Use of renewable and abundant raw material in nature.
+ Lignin depolymerization efficiency above 79%.
+ Use of residues and co-products from the paper/cellulose and furniture industries.

Stage ► **TRL/MRL 5 - Lab scale**

1 **Technology Transfer**
Get the solution by trade secret (technological fee)

2 **Co-development**
Partnership for the separation and purification of phenolic compounds

+Information
agroenergia.marketing@embrapa.br

Person in charge: **CLENILSON MARTINS RODRIGUES**