

Evaluation of pinhão (*Araucaria angustifolia*) seed coat as source of total polyphenols, antioxidant, antimicrobial and allelochemical agents

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Pinhão is a starch-rich seed produced by *Araucaria angustifolia*. *Pinhão* seed coat is as a byproduct generated in both households and farms, presenting great potential as source of natural food preservatives. The objective of this study was to evaluate total polyphenol content, antioxidant, antimicrobial and bio-herbicidal properties of the residue. For this aim, *pinhão* seeds were cooked and peeled, and their coat were dried at 60°C for 24 h. Dried residue was crushed in industrial blender and sifted. Total polyphenol content and ABTS scavenging activity were evaluated using an aqueous extract from dried residue powder, at a concentration of 10 and 5 gL⁻¹. *Pinhão* seed coat extracts were also tested against pathogenic bacteria, phytopathogenic fungi and for lettuce seed germination through *in vitro* tests. The polyphenol analysis revealed that *pinhão* seed coat extract presents 53.8 mg GAE g⁻¹ and the ABTS scavenging activity was 76.1%. The residue extract caused a decrease in seed germination and reduced the germination seed index when used in concentrations of up to 5gL⁻¹, although it did not interfere the germinated plant root size. Additionally, the *pinhão* seed coat extract presented antibacterial activity against *Bacillus cereus*, *Listeria monocytogenes*, *Listeria innocua* and *Staphylococcus aureus*, but showed no anti-fungal activity. Thus, aqueous extract of *pinhão* seed coat can be an interesting alternative to be used as natural antibacterial and herbicide, also representing a way of solid waste management by industries and small farmers.

Biography

Voltaire Sant'Anna has graduated in Food Engineering (Brazil) and PhD in Chemical Engineering (Brazil). He has experience in Food Science and Technology. He has worked on Food Engineering focusing on kinetics of thermal inactivation and reutilization of industrial food residues.

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