

**Polyphenols, antioxidant and antibacterial activity of dried brewery bagasse**

Lisangela Bagatini, Gabriela Diersmann Azevedo, Ismael Girardi and Voltaire Sant Anna  
State University of Rio Grande do Sul, Brazil

The consumption of artisanal beers has increased in Brazil in recent years, which has led to production of a large amount of solid waste and its reutilization has been little explored. In this sense, the objective of the present work is to evaluate the concentration of polyphenols, compounds with antioxidant activity and with antibacterial activity of dried bagasse from a brewery process. In this sense, samples of bagasse obtained from the artisanal production of Pilsen beer were dried at 60°C, crushed and passed through 1 mm opening sieves. Dried samples of 1 g were subjected to alcoholic extraction (50 mL of ethanol 50:50 v/v) for 30 minutes at 60°C for spectrophotometric analysis of total polyphenols, flavonols, tartaric esters and the ability to scavenge ABTS and DPPH radicals. For the antibacterial activity evaluation, samples of 1 g of dried residue was kept in 10 mL of boiling water for 15 minutes, and the extract was tested against pathogenic bacteria. The results showed that the aqueous extract obtained had the ability to inhibit the growth of *Listeria monocytogenes* and *Staphylococcus aureus*, with inhibition halo of 12±2 mm and 10±1 mm. The extract was not effective to prevent the growth of *Bacillus cereus*, *Salmonella* Enteritidis and *Escherichia coli*. The concentrations of total polyphenols, flavonols and tartaric esters found in the residue were 377.30±24.10 mg of gallic acid equivalent, 38.31±17.10 mg of equivalent routine and 16.57±0.49 mg of acid coffee equivalent per gram of dry bagasse, respectively. The alcoholic extract had the capacity to scavenge 79.53±5.41% of ABTS radicals and 55.12±2.01% of DPPH radicals. Thus, these features indicate that the brewery bagasse has great potential to be used as a functional ingredient, since it presents interesting concentrations of polyphenols and compounds with antioxidant activity besides compounds with the capacity to inhibit the growth of important pathogenic bacteria.

**Biography**

Lisangela Bagatini completed her course in Nutrition from University of Vale do Rio dos Sinos; completed her specialization in Food Quality Management from State University of Rio Grande do Sul (Brazil) respectively. Currently she is a Master's Degree student enrolled in the Environmental and Sustainability Program from the same university and studies the processing and utilization of residues from brewery industries for industrial applications.

nutrilisa@univates.br

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