III SIMPÓSIO INTERNACIONAL EM INVESTIGAÇÕES QUÍMICO-FARMACÊUTICAS
I ENCONTRO IBERO-AMERICANO DE PLANTAS MEDICINAIS DR. MAHABIR GUPTA
I CONGRESSO LUSO-BRASILEIRO DE CIÊNCIAS E TECNOLOGIAS EM SAÚDE

Área: IAN 01

EVALUATION OF THE ANTIOXIDANT ACTIVITY THROUGH THE UTILISATION OF BITTER LEAF (*Vernonia condensata*) AND LEMON GRASS (*Cymbopogon citratus)* AS FUNCTIONAL ADDITIVES IN CRAFT BEER

Marizete da Silva Ramos Reis[1], Rodolfo Moresco[1]*

[1]*Universidade do Vale do Itajaí. *moresco@univali.br*

INTRODUCTION

With the growth of the brewing sector, comes a demand for differentiated products, both in terms of their sensory characteristics and their functionality in the human diet. The addition of medicinal herbs in beer to provide flavour, antimicrobial and functional activities is an ancient practice. However, few species are exploited for these purposes. In this sense, this work evaluated the antioxidant activity and the functional characteristics of the use of lemongrass (*Cymbopogon citratus*) and lemon balm (*Vernonia condensate*) teas as functional additives in *Witbier* style craft beer.

MATERIAL AND METHODS

For the development of the beer formulation, the BeerSmith™ beer design software was used. Dry leaves of bitter leaf and lemongrass were individually processed and sieved at 250 mesh. The teas were prepared starting from the concentrations recommended by the Brazilian Phytotherapies Pharmacopoeia. 5 mL of bitter leaf tea and 5 mL of lemongrass tea were combined into a total volume of 100 mL of beer.

Analyses of antioxidant activity by DPPH and phenolic compounds by High Performance Liquid Chromatography (HPLC) were performed on beer samples with and without the addition of tea. Other qualitative parameters were determined according to the Beer Judge Certification Program (BJCP).

RESULTS

Results demonstrated levels of 1.80 µg of eq. gallic acid/mL of beer without addition of herbal extract and 2.42 µg of eq. gallic acid/mL of added beer. The antioxidant activity did not increase significantly with the presence of herbal extracts. The percentage of free radical inhibition of beer with tea addition was 38.54% and without addition 35.07%. The use of teas in beer did not change the parameters of color, pH, extracts and IBU of the beer. However, the alcohol content changed.

CONCLUSIONS

The addition of herbal teas occasioned an increase in the concentration of phenolic compounds in beer, which is an important functional characteristic. However, no significant differences were observed regarding the antioxidant activity and the evaluated qualitative parameters.