

Title: Yeast selection for the production of fermented pineapple beverage.

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Abstract:

The fermentation for obtaining alcoholic beverages can be made from the juice of any sound, fresh and ripe fruit containing fermentable sugars. Pineapple is a fruit that has very pleasant sensory characteristics, high concentrations of sugars, acidity and strong aroma. The micro-organism used, however, has the capacity to alter certain chemical properties, providing sensory notes to the wines. In order to provide these notes, the yeast has to be well adapted to the conditions to which it will be subjected, thus improving the organoleptic characteristics of the fermented pineapple beverage. This study aimed to isolate and characterize a yeast strain with potential use as starter in the production of fermented pineapple beverage. Yeasts were isolated from pineapple juice subjected to spontaneous fermentation. A glucose fermentation test was carried out and the fermentative isolates were selected. These isolates were subjected to stresses such as high concentration of glucose and ethanol, and detection of hydrogen sulfide production. Isolates that tolerated high concentrations of glucose and ethanol and did not produce H₂S were subjected to morphological characterization tests, growth at different temperatures, tolerance to HCl, fermentation of various sugars, and assimilation of different carbon and nitrogen sources. The results were used to group the isolates that possibly belonged to the same species, and one representative of each group underwent molecular identification. The fermentation of the pineapple wine was conducted with the selected isolates LIA12, LIA20, LIA26, LIA34, LIA35 and LIA36, and the final product was assessed in relation to chemical characteristics. The strains produced a wide variety of volatile compounds. Yeasts that presented the best profiles were LIA20 and LIA36. Another yeast with a very interesting profile was LIA35, but with low ethanol yield. For micro-scale fermentation experiments in order to evaluate the sensory properties of the fermented pineapple wine, individual fermentations with strains LIA20 or LIA36, or a mixture of one of them with LIA35, can be performed.

Key-words: fermented pineapple beverage; yeast; volatile compounds

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