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[54] **LACTIC ACID BACTERIA WHICH DO NOT DECARBOXYLATE MALIC ACID AND FERMENTATION THEREWITH**

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[51] **Int. Cl.**[4] **C12N 1/20;** C12N 15/00; C12Q 1/04; A23B 7/10

[52] **U.S. Cl.** **435/253;** 435/172.1; 435/139; 435/34; 426/49; 426/52; 426/61

[58] **Field of Search** 435/34, 885, 253, 172.1, 435/139; 426/49, 52, 61

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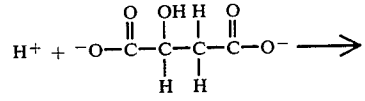
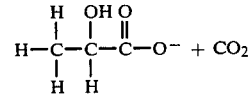
[57] **ABSTRACT**

Bloating of brine fermented cucumbers can be greatly reduced by using lactic acid bacteria which do not decarboxylate malic acid and therefore do not produce carbon dioxide during fermentation. Also, certain high acid wines can be improved by fermenting fruit with bacteria which do decarboxylate malic acid.

A method has been discovered of differentiating between species of lactic acid bacteria which do and do not decarboxylate malic acid. This method comprises growing a lactic acid bacterium in a suitable malic acid-containing nutritive growth medium under conditions suitable for growth and monitoring the pH of the medium during growth. The pH will decrease only when a lactic acid bacterium is present which does not decarboxylate malic acid. When malic acid is decarboxylated, a proton is removed from the solution in accordance with the following equation:





Therefore, the pH of the medium either remains the same by neutralizing lactic acid produced by the fermentation of the carbohydrate source or increases when insufficient lactic acid is present.

The above method is particularly fast and easy for screening bacteria obtained from purposely mutated species of lactic acid bacteria. Many strains of bacteria can be tested together by streaking them on a single layer agar plate.

10 Claims, No Drawings