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Aptitude of a Lactococcus Strain to Grow on Whey Medium

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Abstract : In this work, we focused on the valuation of discharges from the dairy industry. Whey is by-product of dairy industry, which is a formidable pollution factor and contains components (lactose, minerals and proteins) with high nutritional value. Whey is an excellent culture medium for microorganisms. The objective of our work is to investigate the ability of a lactic strain (of the genus Lactococcus) to grow in culture media based on whey of cattle and camels and comparing it with that recorded on M17 as indicator medium. In this study we isolated from a local sample of camel milk a lactic strain (S1).the strain had positive Gram shaped, cocci form and catalase (-). The strain has been purified by the method of streaks on M17 medium. Phenotypic identification allows us to classify this strain in the species: Lactococcus lactis subsp. Cremoris. We subsequently tested the ability of this strain to grow in cattle whey medium and camel whey, both media were deproteinized and unsupplemented. The obtained results revealed that: The cattle and camel whey are appropriate media for the growth of the strain Lactococcus lactis subsp cremoris but is more adapted to grow on a medium rich in lactose as the camel whey. In fact, after 48h and at initial pH 6.8 this strain acidified more camel whey (pH 3.99) than cattle whey (pH 4.8). And biomass produced in the camel whey is 1.50g /1 by contributing to the cattle whey which is 1g / l.

Keywords : cremoris, dairy industry, Lactococcus lactis subsp, medium, whey
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