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## **Survival of *Lactobacillus* Isolates From Industrial Byproducts of Fruits To Different pH Conditions and Their Potential Probiotic Properties.**

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### **Resumo**

*Lactobacillus* spp. are generally adapted to low pH environments, such as gastrointestinal tract. This is one of several essential characteristics of microorganisms added into food as probiotics. The aim of this work was to isolate potential probiotic strains from industrial byproducts of fruits. A total of 305 lactic acid bacteria (LAB) strains were isolated from byproducts of guava pulp, acerola, soursop, mango and strawberry. Fifty-two were identified using MALDI-TOF technique (MALDI Biotyper - Bruker) as *Lactobacillus fermentum* (n = 21), *L. plantarum* (n = 11), *L. brevis* (n = 2) and *L. nagelii* (n = 8), *L. paracasei* (n = 2) and *Lactobacillus* spp. (n = 8). Nineteen selected strains were evaluated for in vitro acidic tolerance. Briefly, stationary-phase-grown cells were harvested, washed with PBS and suspended (ca. 8-9 log CFU×mL<sup>-1</sup>) in 1 mL of PBS. A 7-8 log CFU×mL<sup>-1</sup> bacterial suspension was inoculated into PBS with final pH adjusted to 2.0, 3.0, 5.0 and 7.2 and incubated at 37 °C for 15, 120 and 180 min. For each condition, viable cell counting was determined by microdrop colony count technique on MRS agar plates incubated at 37 °C for 48-72h under anaerobic condition. Among the tested strains, *L. fermentum* and *L. plantarum* exhibited the highest tolerance to acidic condition. Both tested species could be recovered after exposing to pH 2.0 and 3.0 during 15 and

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### **Referência:**

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180 min, respectively. However, *L. nagelii*, *L. brevis* and *L. paracasei* strains were not recovered after exposing for 15 min at pH 2.0. While *L. brevis* and *L. paracasei* were tolerant even after 180 min of exposing at pH 3.0, 5.0 and 7.2, colony counting of *L. nagelii* exhibited a 2-log reduction after 180 min of exposing at pH 5.0 compared to initial inoculum. Despite low survival of tested strains after exposing to acidic conditions (pH 2.0), all evaluated strains were tolerant to acidic conditions compatible with the majority of food matrices, demonstrating potential use as starter culture or probiotic strains on these substrates.

**Palavras-Chave:** probiotics, functional food, MALDI-TOF

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