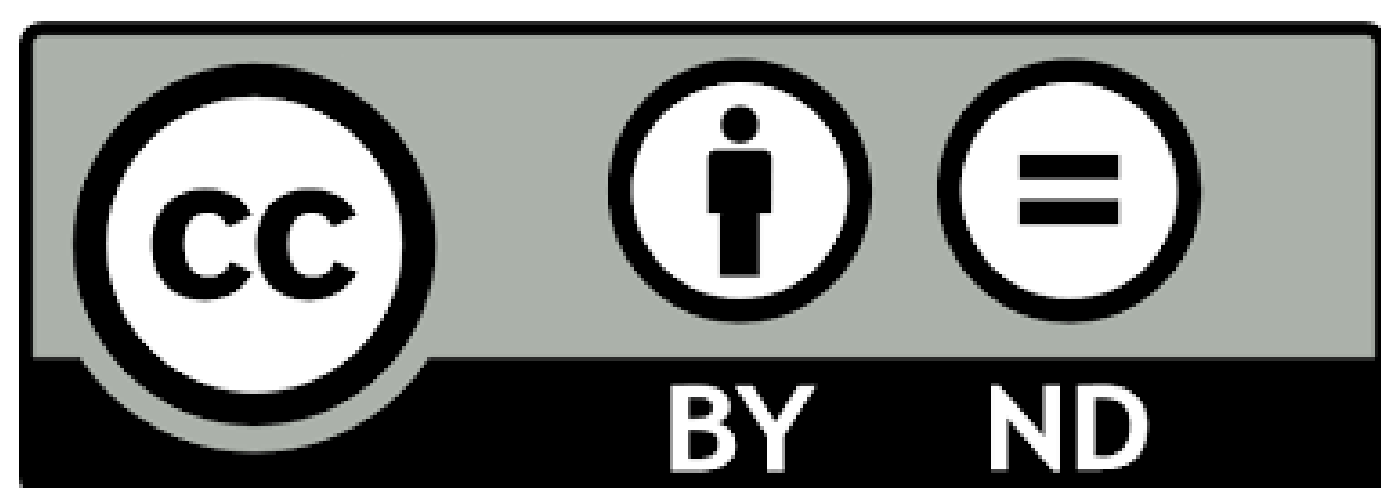




INFOGRAPHIC

ẢNH HƯỞNG CỦA QUÁ TRÌNH THÍCH NGHI ACID ĐẾN ĐẶC TÍNH PROBIOTIC VÀ KHẢ NĂNG LÊN MEN NƯỚC ÉP TÁP CỦA LACTIPLANTIBACILLUS PLANTARUM

Tác giả: Lâm Nguyễn Tường Anh
Đơn vị: Khoa Khoa học Ứng dụng & Công nghệ
Năm xuất bản: 2026

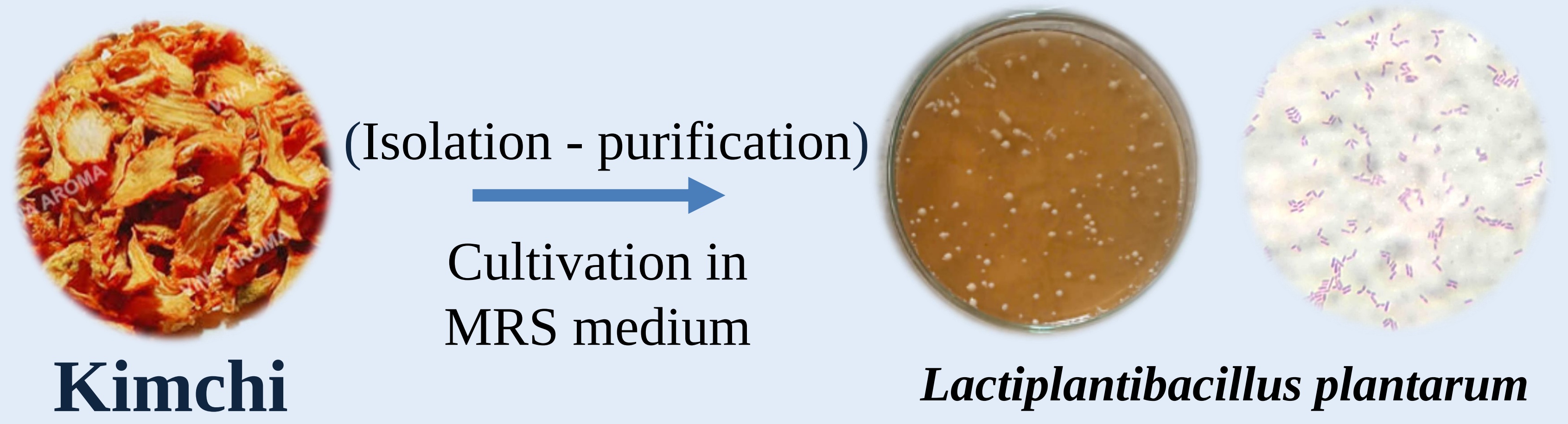
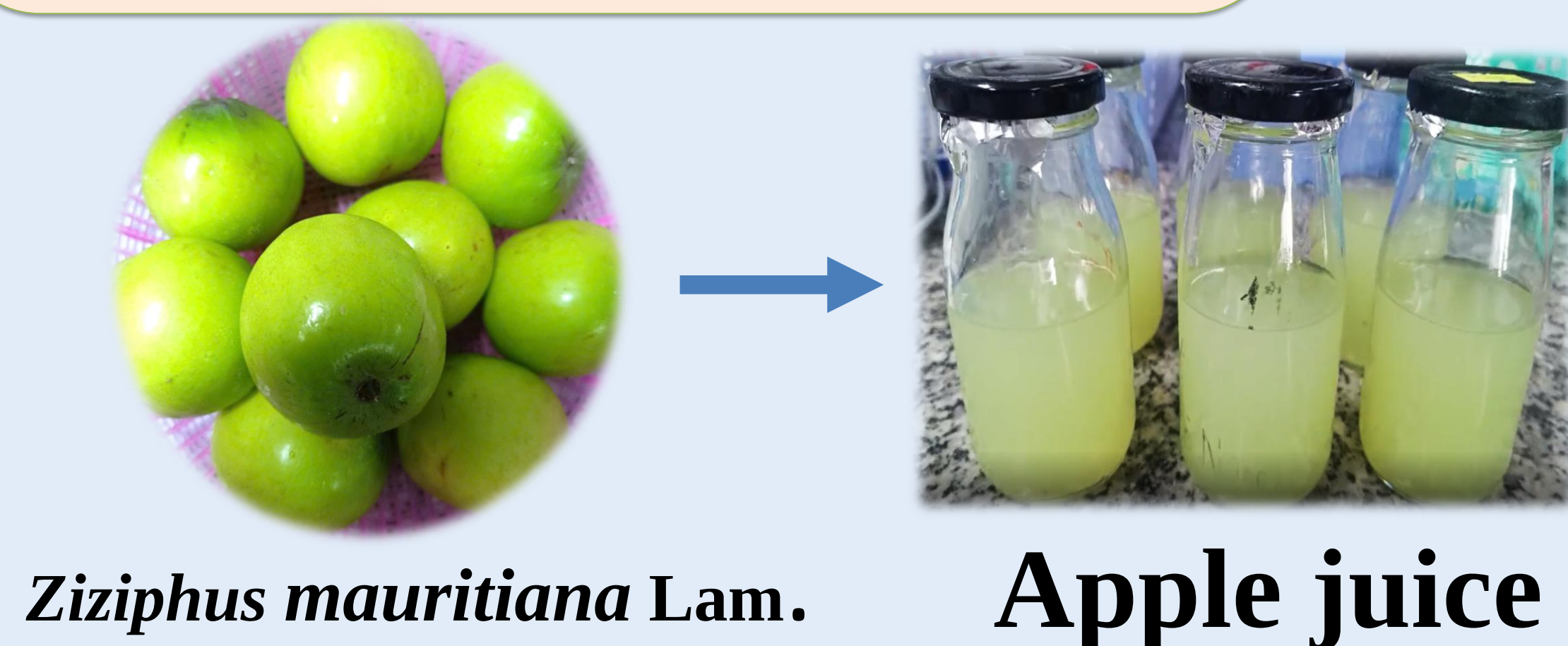


Ảnh hưởng của quá trình thích nghi acid đến đặc tính probiotic và khả năng lên men nước ép táo của Lactiplantibacillus Plantarum © 2026 bởi **Lâm Nguyễn Tường Anh** được cấp phép theo **CC BY-ND 4.0**.

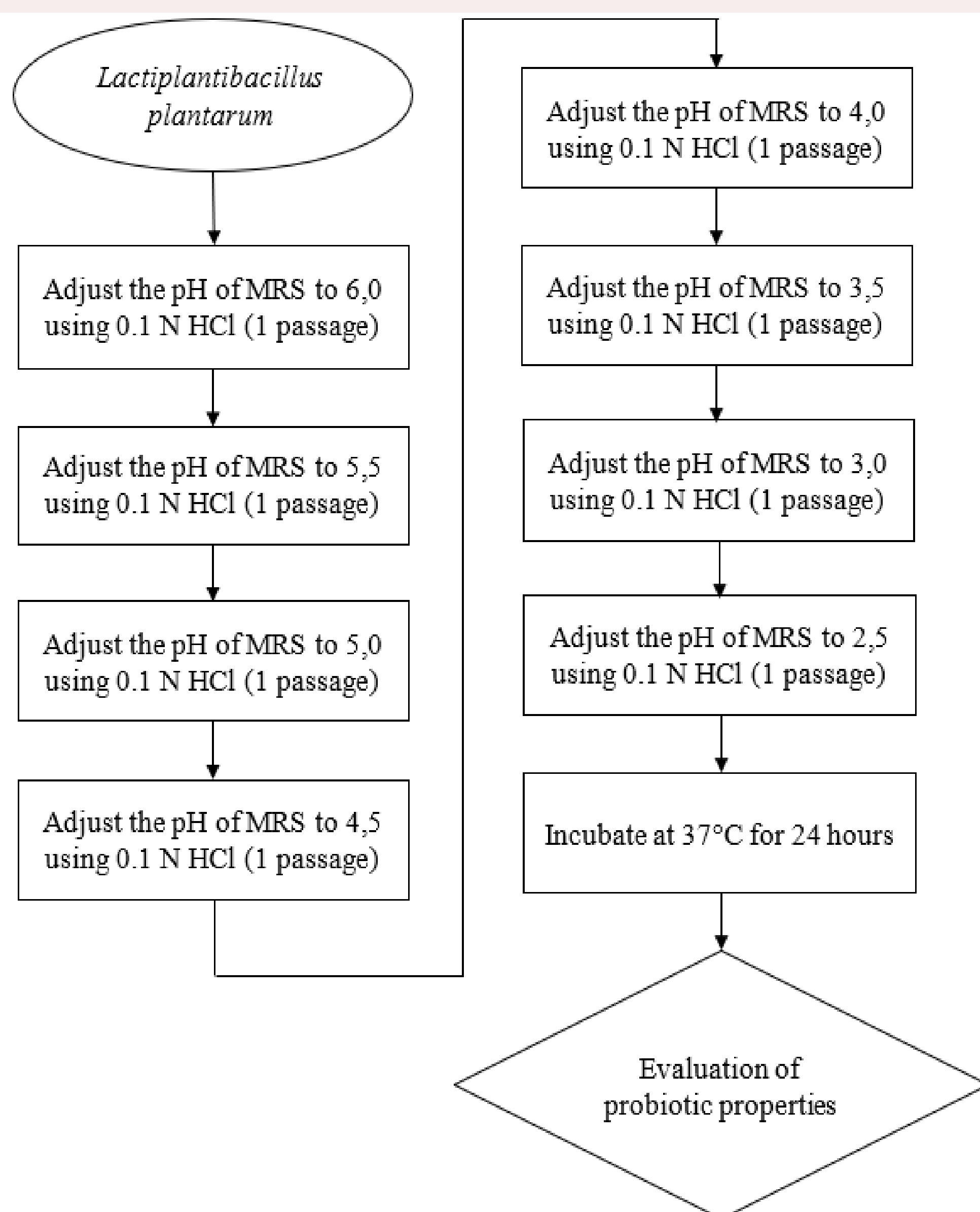
STUDY ON ENHANCING ACID ADAPTATION OF *LACTIPLANTIBACILLUS PLANTARUM* AND EVALUATING ITS EFFECT ON APPLE JUICE FERMENTATION

Abstract: This study investigated the acid adaptation of *Lactiplantibacillus plantarum* isolated from kimchi in MRS medium with a gradually decreasing pH from 6.0 to 2.5 and its application in apple juice fermentation. The results showed that the acid-adapted strain (LP_A) exhibited greater acid tolerance and auto-aggregation ability than the original strain (LP), maintaining a viable cell count of 4.85 log CFU/mL after 6 hours at pH 2.0. During 5 days of apple juice fermentation, LP_A produced more acid, resulting in a decrease in pH to 3.233, while maintaining a viable cell count of 5.926 log CFU/mL, which was higher than that of LP (4.580 log CFU/mL). These results indicate that acid adaptation improves the survival of *L. plantarum* under low-pH conditions and demonstrates its potential application in the production of probiotic fermented fruit juice.

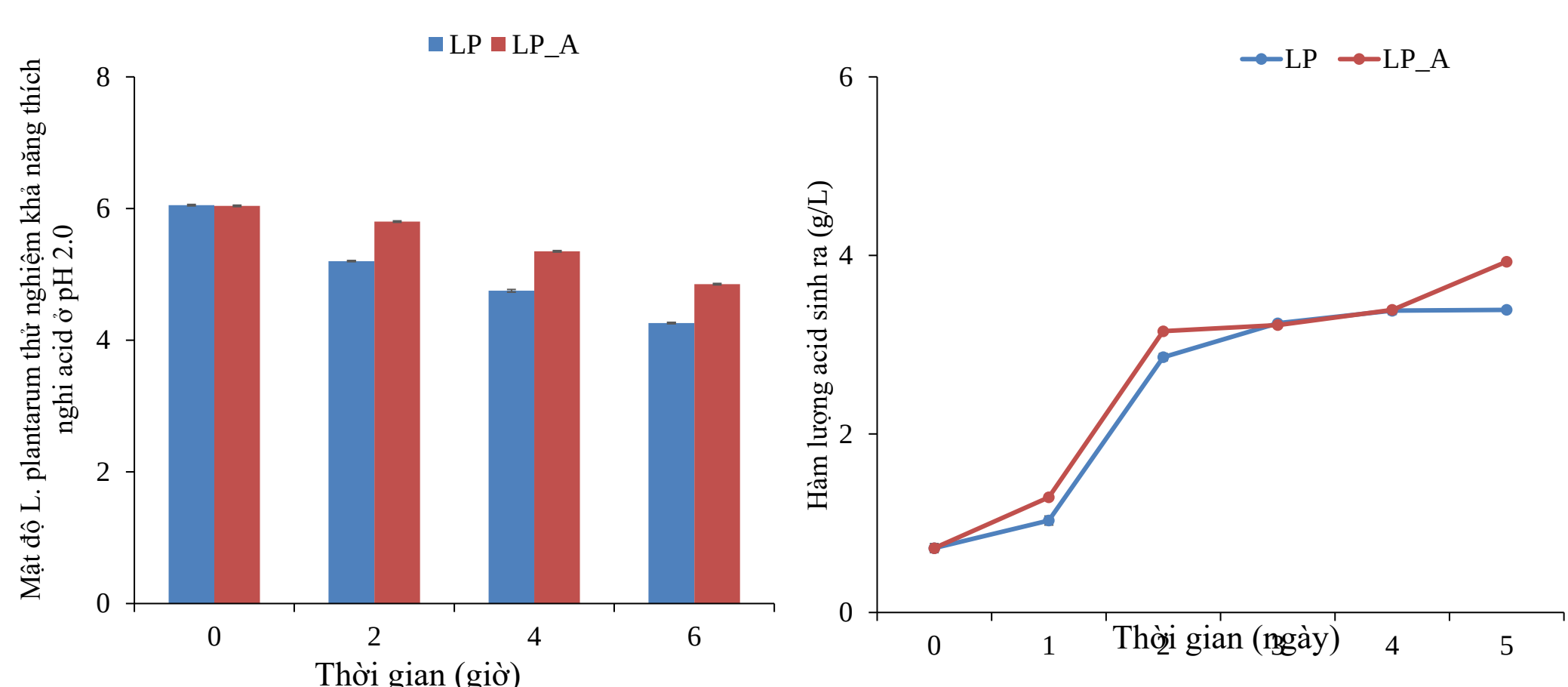
MATERIALS AND METHODS



Investigation of the Acid Tolerance of *Lactiplantibacillus plantarum* Using a Stepwise Adaptation Method

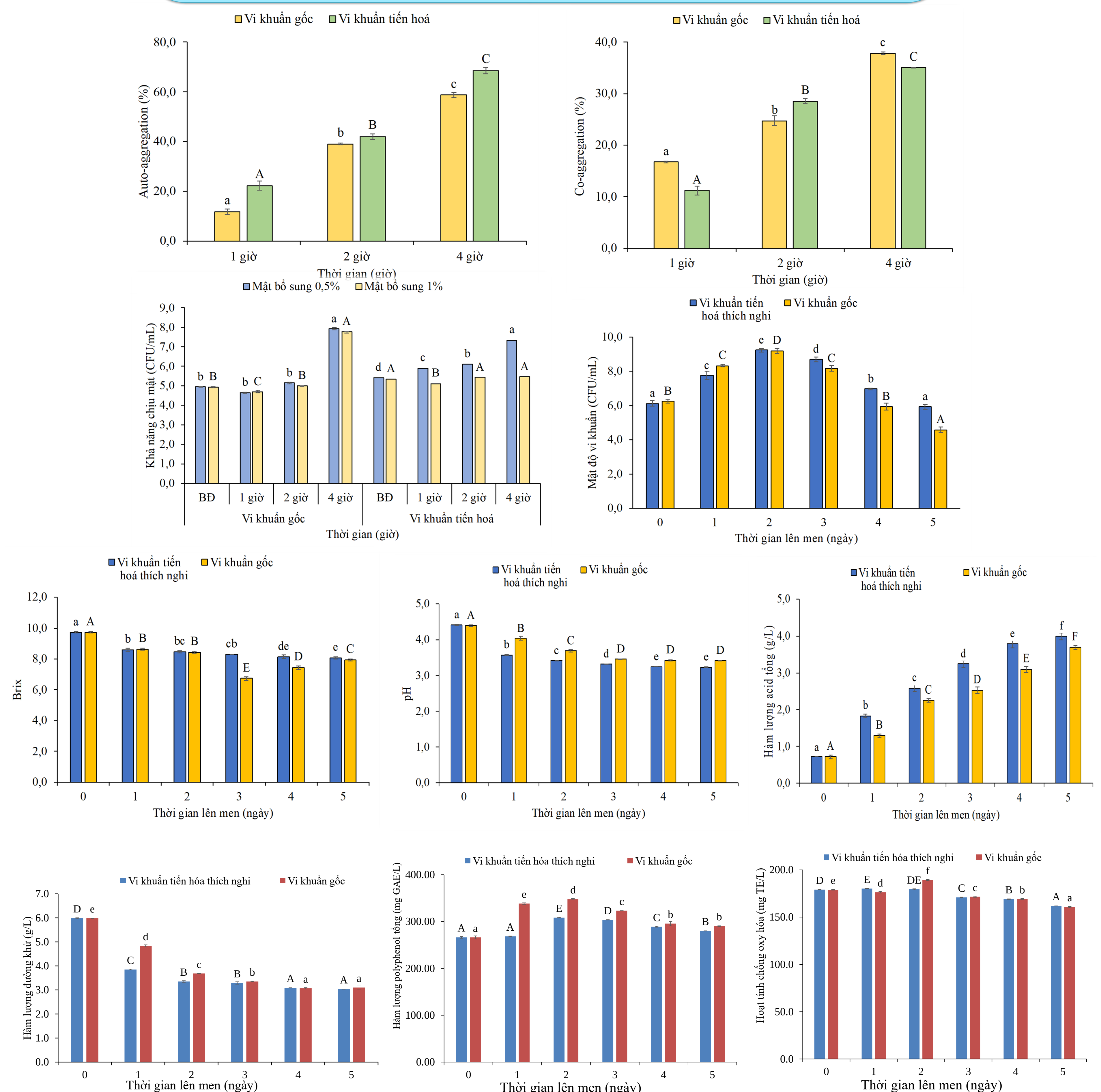


RESULTS OF THE STEPWISE ACID ADAPTATION EXPERIMENT



RESEARCH RESULTS

RESULTS OF THE EVALUATION OF THE PROBIOTIC ACTIVITY OF ACID-ADAPTED *L. PLANTARUM* COMPARED WITH THE ORIGINAL STRAIN



Conclusion: The results showed that stepwise acid adaptation enhanced the acid tolerance of *Lactiplantibacillus plantarum* and improved some probiotic properties. After 6 hours at pH 2.0, the acid-adapted strain LP_A maintained a viable cell count of 4.85 ± 0.01 log CFU/mL, higher than that of the original strain LP (4.26 ± 0.01 log CFU/mL). In addition, its auto-aggregation ability reached $68.62 \pm 1.33\%$ after 4 hours. When applied to apple juice fermentation for 5 days, LP_A exhibited better acidification and cell survival, with a total acid content of 3.994 ± 0.090 g/L, a pH decrease to 3.233 ± 0.012 , and a viable cell count maintained at 5.926 ± 0.120 log CFU/mL. These results indicate that acid-adapted *L. plantarum* has potential for application in the development of low-pH probiotic fermented fruit juices.