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(57) Abstract :

LACTIC ACID PRODUCTION FROM WILD APRICOT (CHULLI) WASTE AND METHOD THEREOF The present invention provides a novel, cost-effective, and eco-friendly process for the production and purification of lactic acid utilizing wild apricot (*Prunus armeniaca L.*) waste, locally known as chulli, as a renewable substrate. The process employs a sequential co-fermentation system involving *Pediococcus damnosus* 107 and *Lactobacillus rhamnosus* 5300 under optimized conditions to enhance substrate utilization efficiency and lactic acid yield. The synergistic interaction between the two probiotic strains maintains stable pH and improves conversion of reducing sugars into lactic acid. The fermentation medium is prepared by mixing dried and ground chulli pressed cake with distilled water, followed by sequential inoculation and incubation under controlled temperature and agitation. The produced lactic acid is purified through lime neutralization and sulfuric acid precipitation to obtain high-purity lactic acid. The invention offers a sustainable approach for fruit-waste valorization and provides an industrially viable bioprocess for lactic acid production with improved yield, lower cost, and minimal environmental impact.

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