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Honey is a useful and healthy food in the human diet which has long been used as a treatment for various ailments. In this research, the effects of bacteria type (at three levels, i.e. zero, *Lactobacillus helveticus* PTCC 1332 and *Lactobacillus rhamnosus* PTCC 1637) were studied in addition to their coating type (at two levels, i.e. coatless zero bacteria and xanthan-chitosan coating). Honey concentrations were used at 6 levels, i.e. 10, 20, 40, 60, 80 and 100%, along with their storage time at 7 levels of 0, 5, 10, 15, 20, 25 and 30 days, which were intended to inhibit the growth of pathogenic bacteria *Helicobacter pylori*, *Salmonella enterica* PTCC 1709 and *E. coli* IBRC-M: 10708. Furthermore, several tests were performed on the honey samples, including the lactic acid bacterial viability test, bacterial viability in gastrointestinal conditions (in the stomach and intestines), morphological properties of micro-capsulated bacteria, changes in pH and acidity, sensory properties (i.e. color, smell, taste, general acceptance) and opacity. The results showed that honey samples containing *Lactobacillus helveticus* PTCC 1332, without coating, had the greatest inhibitory effect on the growth of *Salmonella enterica* PTCC 1709 and *E. coli* IBRC-M: 10708. In addition, it was revealed that honey samples containing *Lactobacillus rhamnosus* PTCC 1637, without coating, had the greatest inhibitory effect on the growth of *Helicobacter pylori*. Also, the evaluation of sensory properties showed that all samples received a score of 5, and the highest score was attributed to the control sample of honey, followed by the honey sample containing *Lactobacillus rhamnosus* PTCC 1637 without coating. The bacterial viability test under gastric and intestinal conditions showed that *Lactobacillus rhamnosus* PTCC 1637, coated with xanthan-chitosan, exhibits the highest degree of resistance to these conditions.

Keywords: capsulation, probiotic, antibacterial, honey.

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