

Thesis Title	Characterization of Bacteriophages Infecting <i>Bacillus subtilis</i> TN3
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ABSTRACT

Infection of bacteriophage is of great concern in food industry as this can result in complete fermentation failure. In this work, a virulent bacteriophage, named BasuTN3 was isolated from *thua nao*, a traditional fermented soybean in Thailand. The stability of phage was evaluated under various ranges of temperature, pH, chloroform, UV, and disinfectants. Our results showed that this phage appeared to be quite specific to its bacterial host, which was further identified as *Bacillus subtilis* strain TN3 based on the 16S rRNA gene sequence analysis. Under TEM, the BasuTN3 phage belonged to the family Myoviridae member. This phage could withstand a wide temperature range (4 – 45 °C) and pH conditions (5 - 11). The BasuTN3 phage was sensitive to chloroform, UV, and commonly used disinfectants. The results obtained expand the knowledge of the *Bacillus* phage diversity in the fermented soybean product, and provide a basis of information for the phage and its bacterial starter culture which can be useful for phage control.

Keywords: *Bacillus subtilis*, Bacteriophage, Fermented Soybean, *Thua Nao*