Some of the genetic characterization of native *Bacillus thuringiensis* strains isolated from forest soil samples of Golestan province

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ABSTRACT

Native strains of *Bacillus thuringiensis* (Bt) were isolated from forest soils of the different areas of Golestan Province and *Cry* and *Vip* genes, responsible of the effective toxin, were monitored. From a total of 42 soil samples examined through selective sodium acetate detention, 160 Bt isolates were separated. After planting the colonies, specific staining and microscopic identification were observed in 40% of isolates crystalline proteins that are toxic to many insects. Molecular study showed that in 12 isolates, gene *Cry1* existed. Genetic structure tests for presence of 3 gene *Cry1A* (including *Cry1Ac*, *Cry1Ab*, *Cry1Aa*) and genes *Cry1I*, *Cry1F*, *Cry2*, *Cry 9*, *Vip3Aa* was carried out using the 8 pair of specific primers. Genes *Cry1Ab*, *Cry2*, *Cry F* were observed in all isolates, but the genes of *Cry1Aa*, *Cry1I*, *Cry1Ac* had very low frequency (Lower than 20%) or not found in any of the isolates. The results of this research could be very useful for tracking native Bt isolates that contain effective crystalline proteins for insects.

Key words: Crystalline protein, *Cry* and *Vip* genes, *Bacillus thuringiensis*, Molecular identification

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