ABSTRACT

In the present study, Twenty four different strains of *Bacillus thuringiensis* were isolated from various samples, collected from Faisalabad, Lahore and Sheikhupura. One strain of *Bacillus thuringiensis* is used as Control which is positive for cry9 genes i.e., HD-29 . *Bacillus thuringiensis* is gram positive rod shaped, aerobic and endospore forming Bacterium. Various morphological, Physical and Biochemical test were performed to identify *Bacillus thuringiensis*.We also used various antibiotics to check resistance for each strain. All strains show sensitivity with ciprofloxacin, Ampicillin, Streptomycin, Gentamicin, Amikacin, Chloramphenicol and Amoxicillin except control and Bt.zero and Bt.2 showed no zone around the antibiotic disc of Ampicillin, showing resistance with this antibiotic. Bt.1 and Bt.2 also showed resistance with Streptomycin and Amoxicillin respectively. Growth curves were taken for each *Bacillus thuringiensis* strain. For each strain, Optimum pH and Temperature was also checked for their best growth. Optimum temperature of all strains of *Bacillus thuringiensis* was 37°C except Bt.zero and Bt.4 which had optimum temperature 35°C. Optimum pH of different strains of *Bacillus thuringiensis* were 7.5 except Bt.2 and Bt.18, which had optimum pH 7. Polymerase chain reaction technique was used for screening the cry9 genes from different strains of Bacillus thuringiensis. For the Polymerase chain reaction,we used the universal primers i.e.,Un9(d) which is forward primer and Un9(r) which is reverse primer for screening all types of cry9 genes and specific primers i.e., EB-9A, EB-9B,EB-9C and EB-9D which is forward primer and Un9(r) which is reverse primer for detecting subtypes of cry9 genes i.e.,cry9A,cry9B,cry9C and cry9D respectively.But in our stains of *Bacillus thuringiensis* only cry9B is positive . In our 24 strains, seven cry9 genes were detected and from that seven cry9 genes five cry9 genes were detected as cry 9B and remaining three may be cry9E ,cry9 like and other subtypes. All cry9 genes are negative to cry9A,cry9B and cry9D.