

Abstract

This research concentrated on the isolation and selection of soil bacteria capable of producing antibiotic which is one of the secondary metabolite of bacteria particularly *Bacillus*.

A total of 62 isolates of *Bacillus* were isolated from 20 soil samples collected from four different areas of Chiang Mai province. They were tested by agar plug technique and disc diffusing method for the ability to inhibit the growth of 7 test organisms i.e. *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, *Bacillus cereus*, *Bacillus subtilis*, *Staphylococcus aureus*, *Micrococcus luteus* and *Serratia marcescens*. By agar plug technique, it was found that *K. pneumoniae* was inhibited by isolates MH16 and MS5 *B. cereus* was inhibited by isolated MH16, MS5 and SD1 *B. subtilis* was inhibited by isolate MS2 and *S. marcescens* was inhibited by isolate MH16. On the other hand, disc diffusion method showed that *K. pneumoniae* and *M. luteus* were inhibited by isolates MH3, MH16, MS2, MS7 and MK4 *B. subtilis* and *S. marcescens* were inhibited by isolates MH3, MH16, MS7 and MK4 and *Ps. aeruginosa* was inhibited by isolates MH3 and MS2. The 7 isolates producing antibiotics were identified morphologically and biochemically. The result indicated that isolates MH3, MH16 and MS7 were *B. brevis*, isolates MS2, MK4 and SD1 were *B. cereus* and isolate MS5 was *B. megaterium*. Soil analysis showed that, the soil texture was loam an clay loam, moisture content was 16.25-31.15%, soil pH was 4.3-5.3 and organic matter content was 1.53-3.22%.