CHAPTER VI

CONCLUSSION

In this study, the response of DT 84 soybean variety to single inoculation of endophytic actinomycetes (EA), five single inoculations of root nodule bacterial namely CD_2P, CL_4HK7, CL_3B1 and CD_1YD8 from Cambodia and Th7 *bradyrhizobium* strain from Thailand and five dual inoculation of EA and each of the bacterial mentioned above could be concluded as following:

(1) The responses of DT 84 soybean to single inoculation of root nodule bacterial isolates or strain varied with growth stage.

(2) At V_6 stage CD_2P and CL_4HK7 could improve significantly nodule root and shoot dry weight of this soybean host plant while CL_3B1 and CD_1YD8 showed their beneficial effects on nodule dry weight only. Th7 was not effective at this growth stage. Single inoculation of EA was also effective to improve significantly shoot, root and N uptake of shoot. Among dual inoculated treatments only EA + CD_2P showed significant synergistic effects on root and shoot dry weight compared to single inoculated treatments.

(3) At $R_{3.5}$ stage DT 84 soybean response significantly to all single inoculated treatments on the basis of root, shoot and nodule dry weight improvement including amount and percentage of seasonal fixed N of DT 84 soybean compared to uninoculated control. CD_1YD8 showed the best performance and this root nodule bacterial isolate was significantly better than Th7 for N_2 fixing ability.

(4) When single inoculated treatments were compared with coinoculated ones, EA + CD_1YD8 showed depressive effects on the amount and percentage of seasonal fixed N while EA + CD_2P had synergistic effects on root dry weight and total plant dry weight. Synergistic effects of EA + Th7 on percentage of seasonal fixed N was also observed.

(5) Regarding to the effect on seed yield, CD_1YD8 was the best among the tested root nodule bacteria, while Th7 and CL_4HK7 were not effective to increase significantly seed yield over uninoculated control.

(6) Single inoculated of EA had significant effect to increase significantly seed yield of soybean also compared to uninoculated control and this treatment did not differ significantly from the tested root nodule bacteria except CD_1YD8.

(7) Significant depressive effects of EA + CD_1YD8 on number of pods per plant and seed yield of soybean were also observed while EA + Th7 and EA + CL_4HK7 showed significant synergistic effects.