

The responses of strawberry to arbuscular mycorrhizal fungi inoculation were evaluated by pot experiment and on-farm trial. Tissue cultured plantlets of strawberry cultivars Royal Project no. 50, Toyonoka and Nyoho were grown in pots containing mixing of Basamid G fumigated mixture of low P soil and rice husk. Two mycorrhizal inoculi D₃ and KN were inoculated to each strawberry cultivars. Uninoculation of the fungus was investigated as a control treatment. Chemical fertilizer at $\frac{1}{4}$ of the recommended rate and 100 times diluted organic liquid fertilizer made from fermented fish were applied. Experimental design was 3x3 factorial in RCBD with 4 replications. On-farm trials were conducted in two steps ; runner and fruit production. Strawberry runners were produced at one of farmer field at Bor Kaew village, Samerng district Chiang Mai province. The soil from the farmer's at Bor Kaew and low P soil were used for runner producing. Each soil was inoculated with D₃ and KN arbuscular mycorrhizal inoculants at 500 spores per runner. Uninoculated with mycorrhizal fungi was a control treatment. The runners obtained were used for

fruit production in 4 different locations in Fang district, Chiang Mai Province. The treatments fertilizer were applied according to the farmer's practice of each farmer and urea at 12 kg N/rai for fruit production trial. Results found that the Royal Project no.50 cultivar, D₃ and KN inoculation increased significantly the percentage of intensity of root colonization by arbuscular mycorrhizal fungi compared to uninoculated control treatment but no significant effects of mycorrhizal inoculated treatments on shoot dry weight and N, P and K uptake were observed for all fertilizer levels. For Toyonoka cultivar, there was no significant difference between D₃ and KN treatments but both treatments had better root colonization by mycorrhiza fungi than uninoculated one. The fertilizer treatments had no significant influences on root colonization of mycorrhizal fungi in this cultivar but there were significant interaction effect between fertilizer and mycorrhizal treatments on shoot dry weight and N, P and K uptake of shoot. Significant beneficial effects of D₃ and KN treatments on dry weight and N, P and K uptake of shoot of Toyonoka cultivar as compared to uninoculated control were observed when only mycorrhizal fungi were inoculated or in combination with chemical fertilizer at ¼ of the recommended rate. When the bioextract of fish was used there was no significant difference between mycorrhizals treatments and uninoculated control on shoot and N, P and K uptake of shoot. In the case of Nyoho cultivar, the significant beneficial effects of mycorrhizal inoculation could be observed only when the bioextract was applied. D₃ inoculation treatment produced effect better than KN on root colonization intensity. However, D₃ and KN treatments did not differ significantly to each other for the effects on dry weight and K uptake of shoot and both treatments were significantly better than uninoculated control.

The on-farm trial indicated that arbuscular mycorrhizal inoculation together in the soil with low P increased the intensity of root colonization about 4.5-5 times over that of uninoculated control and about 2.5-2.7 times when the soil from the runner producing area was used. Due to wide variation among the tested fields, the significant differences of the total fresh fruit yields among the farmers' fields were observed. However, there were no significant effects of different runner producing methods on fruit yield of strawberry under both fertilizer application.