

Phonpun Muntun 2010: Chemical Fertilizer Use of Farmer and Effect of Controlled Release Fertilizers on Yield and Quality of Green Asparagus. Master of Science (Agriculture Research and Development), Major Field: Agricultural Research and Development, Interdisciplinary Graduate Program. Thesis Advisor: Assistant Professor Pramote Saridnirun, Dr.Eng. 120 pages.

The objective of this study were 1) to explore the situation of chemical fertilizer use by farmers and yield and quality of green asparagus as the effect of fertilizer application 2) to study the effect of the Controlled Release Fertilizers (CRFs) in combination with regular chemical fertilizer on yield and quality of green asparagus and 3) to compare cost, profit and income of green asparagus growing by using CRFs. To explore the situation of fertilizer use, the information was gathered from the farm record and soil analysis results of 100 selected farmers in Nakhon Pathom, Kanjanaburi and Ratchaburi province. It was found that most of the farmers used the chemical fertilizer rate of 700-899 kg./rai. The highest total yield good quality yield and low quality yield were found when chemical fertilizer was applied between 480-900 kg./rai in which N, P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O were 60-175, 25-140 and 90-270 kg./rai, respectively. Negative response in yield increasing was found when chemical fertilizer was applied beyond this rate. To study the effect on CRFs, the experiment was conducted in the Randomized Completely Block conducted. The treatment consisted of 1) farmer method (control), 2) 70% in total of control in which 50% N+K was CRFs 3) 70% in total of control in which 70% N+K was CRFs, and 4) 100% in total of control in which 70% N+K was CRFs. It was found that all fertilizer treatments gave non significant difference in total yield, good quality yield, grade A, B and C asparagus yield as well as average number of shoot, number of good shoots, grade A, B, and C shoots. However, farmer method gave the highest low quality yield and low quality shoot number. Comparing the cost, income and profit from fertilizer application between using farmer method and CRF methods, every CRF methods had lower labor and fertilizer costs, The 70% in total of control in which 70% N+K was CRFs, gave the highest income of 59,776.84 Baht/rai and the highest profit of 42238.88 Baht/rai. Every CRF treatment gave more profit than that of farmer method.

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Student's signature

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Thesis Advisor's signature