

Ratchanu Kerdcherdchoo 2014: Effect of Seed Pelleting on Establishment of Forest Tree Species for Forest Restoration. Master of Science (Silviculture Technology), Major Field: Silviculture Technology, Department of Silviculture. Thesis Advisor: Assistant Professor Sakhan Teejuntuk, Ph.D. 94 pages.

This study had objectives to study effect of seed pelleting to establishment and growth of seedling and compared between seedling development of pelleted seed and non-pelleted seed. Tree species were selected in this study included *Albizia lebbeck* (L.), *Albizia procera* (Roxb.) Benth., *Peltophorum dasyrachis* (Miq.) Kurz. and *Pterocarpus macrocarpus* Kurz.. Characteristics of seeds were measured before and after seed pelleting. Pelletd and non-pelleted seed were planted in 2 sites. The first site, pre-study was done in nursery at faculty of Forestry, Kasetsart university. The second site was done in restored area of Thai Siam Cement (Kaeng Khoi) Co., Ltd. Saraburi province. Randomized complete block design was applied with 4 replications. Germination, survival, height and diameter at ground level were measured. Analysis of variance (ANOVA) was used to compare the measurement data and analyze differences by t-test.

The results showed that the characteristics of seeds of before and after pelleting were different. *P. dasyrachis* was the highest percentage changing as 207.05% followed by *P. macrocarpus*, *A. lebbeck* and *A. procera*, respectively. In restored area, the highest germination rates of pelleted and non-pelleted seed were *A. procera* and *P. dasyrachis* as 20.0 and 40.6%, respectively. The highest survival rates were *A. procera* and *P. dasyrachis* as 95.6 and 84.3%, respectively. The highest height were *A. procera* and *A. lebbeck* as 13.51 and 12.26 cm., respectively. The highest diameter at ground level were *A. lebbeck* as 0.26 and 0.25 cm., respectively. The results of analysis of variance showed that germination rate of non-pelleted seed, survival rate of pelleted seed, height of pelleted and non-pelleted seed and diameter at ground level of non-pelleted seed were significantly differences ($p < 0.01$). The germination rate of non-pelleted *P. dasyrachis* seed was higher than pelleted seed significantly ($p < 0.01$). The survival rate of pelleted *A. procera* seed was higher than non-pelleted seed significantly ($p < 0.05$). The height and diameter at ground level of pelleted all species seed were higher than non-pelleted seed non-significantly ($p > 0.05$).

According with this study, *A. lebbeck* and *A. procera* species had ability to use this pelleting method before to planting in the restored area while *P. dasyrachis* was not suitable for this pelleting method and *P. macrocarpus* was not suitable for direct seeding.

Student's signature

Thesis Advisor's signature