

Nisa Leksungnoen 2006: Some Ecological Characteristics and Adaptations of Natural Vegetation in Saline Soil, Amphoe Kham Thale So, Changwat Nakhon Ratchasima. Master of Science (Forestry), Major Field: Forest Biology, Department of Forest Biology. Thesis Advisor: Assistant Professor Suvit Sangtongpraow, Ph.D. 127 pages.
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Saline soil is one of the important problems in the northeastern part of Thailand for a long time. Several organizations solved this problem in the direction of selecting the exotics species to plant in saline soil which consume high expenditure and obtained unsustainable results. This research suggested the selecting of natural vegetation to plant in the saline soil by ecological methods. The aims of this research were to determine some ecological characteristics and adaptations of natural vegetation in saline soil, Amphoe Kham Thale So, Nakhon Ratchasima province. The methods used in this research were ecological and microtechnical methods.

It was found that there were 24 species in dry season and 27 species in wet season. These species included 8 tree species and 5 shrub species. The first three species with highest important value index (IVI) were *Pluchea indica* (L.) Less., *Buchanania siamensis* Miq. and *Maytenus marcanii* Ding Hou respectively and showed clumping distribution. By ordination method, the 27 species were arranged in two groups; the group which distributed to soil pH gradients and the group to soil chloride. *P. indica*, *B. siamensis* and *M. marcanii* showed high salt resistance.

It was also found the great variation in soil salinity. Generally, top soil (0 – 5 cm.) had higher salinity than subsoil (30 cm.). In the dry season, top soil had salinity near moderate salinity level with average EC = 3.91, while in the wet season had lower salinity.

The natural regeneration of *B. siamensis* showed that there seeds could germinate well in media with 300 mM NaCl, while the seed germination of *M. marcanii* and *P. indica* were very poor in 150 and 100 mM NaCl respectively.

P. indica, *B. siamensis* and *M. marcanii* showed slightly adaptations, both morphological and anatomical adaptation. The results from this research suggested that these three species, which were medicinal plants should be considered to plant in saline soil of this Amphoe.

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Student's signature

Suvit Sangtongpraow 17 May 2006

Thesis Advisor's signature