

Kanokwan Fakon 2012: The distribution and property of Salt Affected Soils in Amphoe Kamphaeng Saen Nakhon Phathom Province. Master of Science (Soil Science), Major Field: Soil Science, Department of Soil Science. Thesis Advisor: Mrs. Napaporn Phankamolsil, Ph.D. 100 pages.

The study on spatial distribution and properties of salt affected soils in Amphoe Kamphaeng Saen Nakhon Phathom province. The objectives of this study are 1) to monitoring the distribution of salt affected areas and 2) to study the properties of salt affected soils for approach the detailed data to assist better agricultural land use planning. An orthographic map was used as the base map to identify salt affected soil locations which are present as bare areas on the orthographic map. The salt affected soils were samples by soil auger at 4 depths (0-20, 30-50, 60-80 and 100-120 cm.) for particle size distribution and chemical analysis. Two layer of soil were sampled at 0-10 and 20-30 cm for soil moisture, bulk density and hydraulic conductivity (Ksat). The GIS technique was used to processing and displays the distribution of salt affected soil in study area.

The results showed that the salt affected soil has been spread on the north part of Amphoe Kamphaeng Saen including Tambon Krateeb, thungluknok, thungbua, sasimum and sapattana. Salt affected soils have loam to sandy clay texture in topsoil and sandy clay to clay texture in subsoil, high bulk density value (ranges from  $1.63 - 2.40 \text{ Mg m}^{-3}$ ), very slow to very rapid hydraulic conductivity (ranges from  $0.01 - 14.67 \text{ m d}^{-1}$ ). The electrical conductivity ( $\text{EC}_e$ ) of the soil samples ranges from 0.20 to  $74.70 \text{ dS m}^{-1}$ . The sodium adsorption ratio (SAR) ranges from 2.30 to 85.08. The soil reaction ranges from extremely acid to moderately alkaline (4.24 to 8.26). All locations sampled had at least of one layer with a high  $\text{EC}_e$  value of more than  $4 \text{ dS m}^{-1}$  indicated that all locations were affected by salt. The observed soils can be classified within 2 types of salt affected soil. Thirty three locations were classified as saline sodic soils and 5 locations as saline soils.

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