Some physical and chemical aspects of water quality under various land use at Sakaerat Environmental Research Station.

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ABSTRACT

Impact studies of the water qualities such as pH, turbidity, hardness, electrical conductivity, color and temperature on various land use types were conducted at Sakaerat Environmental Research Station (SERS) during April, 1979 to march, 1980. The results indicated that turbidity, hardness, electrical conductivity, and color of the stream water from the swidden area (Huay Namkhem) were higher than those of the dry evergreen forest (huay Wanasart) except that of the pH value. The turbidity and color of stream water form the old clearing area (Huey Tayoo) were also higher than those of the dry evergreen forest, while the pH, hardness, and electrical conductivity of the water from the former were much more lower than the later area.

The average values of stream water qualities of the dry evergreen forest, old clearing area, and swidden land, were as follows: pH 6.84, 6.10 and 6.69; turbidity 3.85, 15.25 and 15.37 JTU; hardness 24.29, 14.60 and 51.28 ppm $CaCO_3$; electrical conductivity 0.147, 0.095 and 0.367 mmho/cm.; and color 12, 210 and 223 units; respectively. The results also showed that the stream water temperature of the dry evergreen forest was less fluctuated than those of the swidden and old clearing areas. It was clear that the swidden old clearing areas could affect the water qualities more especially turbidity and color of stream water than the evergreen forest. This study confirmed that the change of land use pattern from forested land into agricultural or swidden land will lower the water quality especially for potable uses. However, except for potable use, the stream water from these areas can be utilized for agriculture as well as for the other general purposes.