ABSTRACT

ERNA SURYANI. The Characteristics and Optimalization of Paddy Soil at Solok Rice Production Center, West Sumatera. Under the supervision of SUDARSONO, ISKANDAR and DJADJA SUBARDJA.

Solok is known as Rice Production Center which Cisokan as one of the supreme paddy varieties. Presently, the average of Cisokan production reach 4.15 tonnes/ha and varies among the parent materials, while the highest production reach 7.08 tonnes/ha dry milled unshelled rice. This showed Cisokan production not optimal. For this reason, research has been done to optimize Cisokan production in each parent material. Results showed that optimal management for paddy soil derived from volcanic material is: urea 200 kg/ha, SP-36 500 kg/ha and KCl 50 kg/ha, the paddy soil derived from river sediment is: urea 100 kg/ha, SP-36 500 kg/ha and KCl 50 kg/ha, and the paddy soil derived from lake sediment is: urea 300 kg/ha, SP-36 100 kg/ha and KCl 100 kg/ha. The highest production reach 7.52 tonnes/ha, 6.47 tonnes/ha and 6.91 tonnes/ha dry milled unshelled rice, respectively. The application of optimal management on different soil characteristic, the criteria of land suitability for Cisokan variety have been made for each parent materials. The lesser land characteristics data needs bring through the land evaluation process easier, faster and cheaper with better results. Land characteristics that are needed to evaluate the Cisokan land use types in volcanic regions consist only of the clay content, available P$_2$O$_5$ and the Ca/K ratio. The paddy field in the Alluvial Plain required the clay content, total N, available P$_2$O$_5$, and CEC of clay. While the paddy field in the Lacustrine Plain required total N, available P$_2$O$_5$, Mg/K ratio and CEC of clay.

Keywords: Production controller land characteristics, optimal management, the criteria of land suitability for Cisokan