



## INTISARI

Tanah yang sering mengalami penggenangan secara periodik dalam waktu yang cukup lama akan terjadi proses pengendapan sedimen dan proses reduksi tanah sehingga akan terjadi perubahan sifat fisik tanah dan perbedaan produksi padi.

Penelitian ini bertujuan mengetahui perbedaan sifat fisik tanah Grumusol genangan satu kali sampai empat kali dan tanah Aluvial genangan dua kali sampai empat kali, serta produksi padi pada kondisi tanah tersebut. Metode penelitian yang digunakan yaitu survei, sedangkan teknik pengambilan sampel menggunakan *stratified proporsional random sampling*.

Hasil penelitian menunjukkan bahwa, makin sering tergenang sifat fisik tanah Grumusol yang cenderung ada perbedaan meliputi tekstur (terdiri atas persentase debu, lempung), berat volume, porositas, konsistensi (terdiri atas batas cair, batas gulong), permeabilitas tanah, sedangkan yang cenderung tidak ada perbedaan meliputi tekstur (persentase pasir), struktur, berat jenis, konsistensi (terbatas batas lekat, batas berubah warna), dan produksi padi cenderung menurun (13-10 ton/ha/th). Makin sering tergenang pada tanah Aluvial sifat fisik tanah yang cenderung ada perbedaan meliputi tekstur (terdiri atas persentase pasir, lempung), berat jenis, porositas, permeabilitas tanah, sedangkan yang cenderung tidak ada perbedaan meliputi tekstur (persentase debu), struktur, berat volume, konsistensi (terdiri atas batas cair, batas lekat, batas gulong, batas berubah warna), dan produksi padi cenderung naik (11-13 ton/ha/th).

Untuk mempertahankan sifat fisik tanah dan produksi padi pada kedua kondisi tanah akibat genangan di atas, meliputi pengolahan tanah antara lain perbaikan drainase, penerapan pola pergiliran tanaman dan pemupukan yang optimal.



## ABSTRACT

For a prone to flood area, periodical inundation for a considerable time may take place, and due to sedimentation and reduced condition, soil physical properties may change and hence rice production may then be affected.

The present study has the objective of detecting whether there is any difference in soil physical properties of two soil types: Grumusol and Alluvial inundated for different frequency (two to four), and how their corresponding rice production. The study was done through a survey using stratified proportional random sampling.

The results showed that the more frequent Grumusol soil experiencing inundation, the soil texture (silt and clay percentage), bulk density, porosity, soil consistency (at liquid and roll limits), and soil permeability tended to change. In contrast, sand fraction, soil structure, soil specific weight, soil consistency at sticky and colour change limits remained the same. Rice production however, tended to lower (13-10 t/ha/year). For Alluvial soil, frequent inundation would change soil texture (sand and clay percentage), specific weight, soil porosity, soil permeability, while silt percentage, soil texture, bulk density, and soil consistency (at either liquid, sticky, rolled or colour changed limits) remained the same. Rice production, however, tended to increase (11-13 t/ha/year).

To keep soil physical properties unchange and rice production stabilizes despite inundation condition, land preparation which include soil drainage, plant rotation and optimum application of fertilization should be considered.