



## INTISARI

Pengolahan lahan berpengaruh terhadap sifat fisika, kimia dan kelimpahan fauna tanah. Penelitian ini bertujuan mengetahui dan mempelajari perbedaan sifat fisika dan kelimpahan fauna tanah antar sistem budidaya padi sawah organik dan konvensional serta pengaruh lama budidaya organik terhadap sifat fisika dan kelimpahan fauna tanah. Rancangan penelitian yang digunakan adalah Rancangan Tersarang (*Nested Design*) dengan 3 lokasi yakni Kecamatan Imogiri untuk sawah konvensional dan 6 tahun pengelolaan secara organik, Kecamatan Mojogedang untuk sawah konvensional dan 4 tahun pengelolaan secara organik dan Kecamatan Sawangan untuk sawah konvensional, 4 tahun dan 10 tahun pengelolaan secara organik. Pengambilan sampel dilakukan pada kondisi setelah pembajakan sebelum tanam, fase vegetatif maksimal dan pasca panen. Pengelolaan sawah secara organik memberikan kecenderungan meningkatkan persentase fraksi debu dan menurunkan fraksi pasir kasar, meningkatkan kematapan agregat, meningkatkan kelimpahan cacing tanah, menurunkan kelimpahan nematoda parasit tanaman dan meningkatkan nematoda non-parasit serta meningkatkan respirasi tanah, dibandingkan sistem sawah konvensional. Terjadi perbaikan baik pada parameter fisik, kimia dan biologi tanah akibat penerapan sistem organik.

Kata kunci : sawah konvensional, sawah organik, sifat fisika tanah, kelimpahan fauna tanah.



## ***ABSTRACT***

Land management affected the physical, chemical and abundance fauna of soil. This research aimed to know differences of soil physical properties and abundance of soil fauna in conventional and organic paddy field. Another aimed to know long term effect of organic farming to soil physical properties and abundance of soil fauna in paddy field with conventional and organic. The design of this experiment used nested design which 3 location of sampling. The first location was in Imogiri Subdistrict with conventional paddy field and 6 years of organic paddy field applied. The second location was in Mojogedang Subdistrict with conventional paddy field and 4 years of organic paddy field applied. The third location was in Sawangan Subdistrict with conventional paddy field, 4 years and 10 years of organic paddy field applied. Soil sample was taken in condition of after plough before planting, maximum plant vegetative phase and after harvesting. Organic paddy field gave trend increased percentage of silt fraction and reduced percentage of sand fraction, increased aggregate stability of soil, increased abundance of earthworm, reduced abundance of plant parasitic nematode and increased non-parasitic nematode and increased soil respiration comparing with conventional paddy field. Organic farming gave trend improving soil physical, chemical and biological parameters.

Keywords : conventional paddy field, organic paddy field, soil physical properties, abundance of soil fauna.