ABSTRACT

Suyuti , Akhmad Imam , 2013. Earthworm diversity and density of the Village Coffee Based Agroforestry Puncu, Puncu Kediri sub district . Script . Department of Biology, Faculty of Science and Technology of the State Islamic University of Maulana Malik Ibrahim Malang . Supervisor I : Dwi Suheriyanto , M.P. Supervisor II : Ach . Nashichuddin , M.A.

Keywords : Agroforestry , Biodiversity , density , Earthworm , Correlation .

Agroforestry is combination between forest science with agronomic, which combines the harmony between the intensification of agriculture and forest conservation is one way to help optimize the results of a form of land use on an ongoing basis in order to ensure and improve the people's living needs , as well as to maintain soil fertility . In keeping soil fertility, earthworms are one of the parameters that play a very large by physically destroying the organic matter into humus , incorporating materials decompose in the upper soil layer , and the stability of aggregates formed between organic matter and mineral soil (Barnes , 1997 at Dwiastuti , 2009) . Physical - chemical soil factors are very influential in the lives of the earthworms thus need to examine the diversity and population density of earthworms . At different soil physical factors and chemical diversity course soil worm population density is also different . Similarly , the type of plants are grown in an area largely determine earthworm species and population densities in the area .

Earthworm diversity and density of the Village Coffee Based Agroforestry Puncu Kediri District of Puncu observed in October-November 2013. Sampling sites on coffee plantations and intercropping plantations (coffee and chili) with the method of " purposive random " ie randomly on both sites with 3 replications . Sampling was performed at each site using a soil sampling size 25x25x30 with 30 samples .

Research shows that at both locations found three earthworm genuses namely : *Pheretima* , *Pontocolex* and *Lumbricus* . The highest diversity found in the location I with 1.77 Diversity Index (diversity classified as moderate) . Earthworm population density is highest *Pontocolex* contained in the location I with density values of 0.49 individu/m2 and kepadata relative value 61.49 % . The correlation between all types of worms found in the physical - chemical factors (temperature , humidity , pH , organic C and N content) in general there was no significant relationship for values below the significance > 0.5

.