

## Kelimpahan Cacing Tanah pada Berbagai Kelas Umur Tegakan Pinus (*Pinus merkusii* Jungh. et de Vriese)

### INTISARI

Perbedaan kelas umur tegakan pinus akan membentuk lingkungan yang berbeda dan juga mempengaruhi perbedaan kelimpahan cacing tanah di dalamnya. Penelitian ini bertujuan untuk mengetahui jenis, kelimpahan, biomassa, dan faktor-faktor yang mempengaruhi kelimpahan cacing tanah pada berbagai kelas umur tegakan pinus.

Penelitian ini dilakukan pada tegakan pinus umur 5 tahun, 7 tahun, 22 tahun, dan lahan bekas tebang tegakan umur 28 tahun di wilayah RPH Karanganyar, BKPH Sumberwringin, KPH Bondowoso. Sampel yang diambil antara lain cacing tanah dengan metode *handsorting* berikut sampel tanah pada petak ukur 25X25 cm di kedalaman tanah 0-10, 10-20, 20-30 cm dan seresah dengan batasan kawat kuadratik 50X50 cm. Cacing tanah dihitung jumlah dan biomasanya. Sampel seresah dihitung biomasanya dan analisis sampel tanah meliputi pH, kandungan bahan organik, kadar lengas, dan berat volumenya. Pengambilan sampel dilakukan pada musim hujan (Maret), masa peralihan (Juli), dan kemarau (September).

Jenis cacing tanah yang ditemukan di lokasi penelitian adalah *Pheretima* sp. Kelimpahan tertinggi terdapat di musim hujan dan terjadi kecenderungan yaitu semakin tua umur tegakan, kelimpahan cacing tanah (individu/m<sup>2</sup>) semakin meningkat, dari umur 5 tahun, 7 tahun, 22 tahun, dan lahan bekas tebang tegakan umur 28 tahun berturut-turut 25,6; 22,4; 51,2; dan 67,2 individu/m<sup>2</sup> dengan biomassa berturut-turut yaitu 10,65; 6,33; 4,96; dan 10 g/m<sup>2</sup>. Cacing tanah banyak ditemukan pada kedalaman 0-10 cm, semakin menurun pada kedalaman 10-20 cm, dan tidak ditemukan cacing tanah pada kedalaman 20-30 cm. Hasil analisis regresi berganda menunjukkan faktor-faktor yang mempengaruhi kelimpahan cacing tanah yaitu pH tanah, kadar lengas tanah, dan kandungan bahan organik tanah, sedangkan yang mempengaruhi biomasanya yaitu kadar lengas tanah, kandungan bahan organik tanah, dan berat volume tanah.

Kata kunci : tegakan pinus, kelas umur, kelimpahan, cacing tanah

**The Abundance of Earthworms in Several Age Classes of Pine Stands  
(*Pinus merkusii* Jungh. et de Vriese)**

**ABSTRACT**

The difference in age classes of pine stands will create different environments and also may influences abundance of earthworms. The objective of the research was to know the species, abundance, biomass, and the environmental factors that affected abundance of earthworms in several age classes of pine stands.

The research was carried out in pine stands 5 years old, 7 years old, 22 years old, and logged area on stand of 28 years old, in RPH Karanganyar, BKPH Sumberwringin, KPH Bondowoso. Sample of earthworms were taken by handsorting method in square sampling tool of size 25X25 cm in 0-10 cm, 10-20 cm, and 20-30 cm soil depth and the litter of pines were taken in square sampling tool of size 50X50 cm. Earthworms found were identified and counted, litter of pines were counted its biomass, and samples of soil were measured its pH, organic matter, water content, and its bulk density. All the samples were taken in wet season (March), period of transition (July), and dry season (September).

The species of earthworms found was *Pheretima* sp. The results showed that abundance of earthworms was highest in wet season and there was a tendency when pine stands to be older, the abundance of earthworms increased, from the age of 5, 7, 22, and logged area on stand of 28 years old respectively was 25,6; 22,4; 51,2; and 67,2 individuals/m<sup>2</sup>, and its biomass respectively was 10,65; 6,33; 4,96; and 10 g/m<sup>2</sup>. The abundance of earthworms to be lower with increasing soil depth, they were found in 0-10 cm depth, decreased in 10-20 cm depth, and there was no earthworm in 20-30 cm depth. Multiple linear regression analysis showed that abundance of earthworms affected by soil pH, water content, and organic matter of soil, while the biomass was affected by water content, organic matter, and bulk density of soil.

Key words : pine stand, age class, abundance, earthworm