

**KELIMPAHAN JAMUR SELULOLITIK
PADA LAHAN BUDIDAYA RUMPUT GAJAH (*Pennisetum purpureum*
Schumach.) DI PETAK 17 HUTAN PENDIDIKAN WANAGAMA I
GUNUNG KIDUL DIY**

INTISARI

Rumput Gajah di Petak 17 Hutan Pendidikan Wanagama I ditanam secara monokultur atau ditanam bersama dengan tanaman kehutanan (silvopastural). Seresah dan sisa pemanenan rumput Gajah merupakan sumber bahan organik tanah. Dekomposisi bahan organik dilakukan oleh mikroorganisme, khususnya jamur selulolitik. Hasil dekomposisi bahan organik sebagian kecil dipergunakan oleh jamur untuk membentuk jaringan tubuh jamur dan sisanya untuk meningkatkan kesuburan tanah. Penelitian ini bertujuan untuk mengetahui kelimpahan jamur selulolitik pada lahan budidaya rumput Gajah Petak 17 Hutan Pendidikan Wanagama I Gunung Kidul.

Pengamatan dilakukan di 5 lokasi, yaitu lahan rumput Gajah umur 1 tahun, 5 tahun, 10 tahun di bawah tegakan *Eucalyptus urophylla* ST. Blake, lahan pertanian kosong (bera), dan lahan di bawah tegakan *E. urophylla*. Setiap lokasi dibuat 3 plot pengamatan ukuran 1 m x 1 m yang mewakili lokasi tersebut. Sampel yang diambil adalah seresah, tanah kedalaman 0-5 cm, dan 10-15 cm. Pengujian sampel dilakukan dengan menggunakan metode *Plate Count* untuk jamur selulolitik di Laboratorium Fisiologi Pohon Hutan, metode Walkey dan Black untuk C-organik dan metode Kjeldahl untuk N-total di Laboratorium Ilmu Tanah Hutan.

Hasil penelitian menunjukkan lahan yang lebih lama digunakan untuk budidaya rumput gajah mempunyai kadar C-organik dan rasio C/N tinggi. Kadar C-organik dan rasio C/N pada tanah kedalaman 0-5 cm dan 10-15 cm memiliki nilai yang relatif sama. Jumlah jamur selulolitik pada seresah di lahan rumput gajah umur 1 tahun, 5 tahun, 10 tahun di bawah tegakan *E. urophylla*, dan lahan di bawah tegakan *E. urophylla* secara statistik memiliki jumlah yang sama dan lebih tinggi daripada lahan pertanian kosong, dan begitu pula pada tanah 0-5 cm. Jumlah selulolitik tertinggi pada tanah 10-15 cm terdapat di lahan rumput gajah 1 tahun, diikuti lahan rumput gajah 10 tahun di bawah tegakan *E. urophylla*, sedangkan di lahan rumput gajah 5 tahun, lahan pertanian kosong, dan lahan di bawah tegakan *E. urophylla* memiliki jumlah jamur selulolitik yang sama dan terendah.

Kata kunci: Rumput Gajah, C-organik, rasio C/N, jamur selulolitik

**ABUNDANCE OF CELLULOLYTIC FUNGI
ON CULTIVATION LAND OF KING GRASS (*Pennisetum purpureum*
Schumach.) IN COMPARTMENT 17, FOREST EDUCATION
WANAGAMA I GUNUNG KIDUL DIY**

ABSTRACT

King grass in the compartment 17 Forest Education Wanagama I was planted in monoculture or mixed with forest trees (silvopastural). Litter and waste of grass harvesting serve as source for soil organic matter. Decomposition of organic matter is performed by microorganisms, especially cellulolytic fungi. Small amount product of decomposition is used by the fungi to form their tissue and the remaining improves soil fertility. This study aims to determine the abundance of cellulolytic fungi on cultivated land of King grass in compartment 17, Forest Education Wanagama I, Gunung Kidul.

Samples used in this experiment were collected from 5 locations, namely 1 and 5 years cultivation land of King grass as monoculture, 10 years under the stand of *Eucalyptus urophylla* ST. Blake, fallow agricultural land, and under the stands of *E. urophylla*. Three observation plots sized 1 x 1 m were made in each location, then samples of litter, top soils (0 - 5 cm) and 10 - 15 cm soil layer were taken from each plot. Cellulolytic fungi was counted using Plate Count method in Laboratory of Tree Physiology. Organic carbon content was analyzed using Walkley and Black method and nitrogen content using Kjeldahl method in Laboratory of Forest Soil Science, Faculty of Forestry, UGM.

The result showed that the longer land used for growing King grass had higher value for organic carbon content and C/N ratio. Organic carbon content and C/N ratio in soil depth of 0 - 5 cm and 10 - 15 cm were relatively equal due to land cultivation. The number of cellulolytic fungi in litter on cultivation land of King grass 1 year, 5 years, 10 years under the stand of *E. urophylla* and under the stand of *E. urophylla* were statistically similar and so did the soil surface (0-5 cm). The highest number of cellulolytic fungi in underneath soil (10-15 cm) was found on cultivation land of King grass 1 year followed by cultivation land of King grass 10 years under the stands of *E. urophylla*, while cultivation land of King grass 5 years, fallow agriculture land, and under the stands of *E. urophylla* were similarly the lowest.

Keywords: King grass, organic carbon, C/N ratio, cellulolytic fungi