

## RINGKASAN

**RIA PUSPITANINGTYAS. H2C 099 166. 2006.** Analisis Pertumbuhan pada Sistem Tanam Tumpangsari Sorghum (*Sorghum bicolor* (L) Moench) dan Berbagai Jenis Legum dengan Waktu Tanam yang Berbeda (Pembimbing : **SYAIFUL ANWAR** dan **FLORENTINA KUSMIYATI**)

Penelitian dilaksanakan di kebun percobaan Laboratorium Ilmu Tanaman Makanan Ternak Fakultas Peternakan, Universitas Diponegoro, Semarang, pada bulan September 2003 sampai bulan Januari 2004. Penelitian bertujuan untuk mengetahui jenis legum pakan dan waktu tanam yang sesuai ditumpangsarikan dengan sorghum.

Materi yang digunakan meliputi media tanam berupa lahan sejumlah 30 petak masing-masing berukuran 3x2 m<sup>2</sup>, pupuk kandang, urea, KCl dan SP-36. Benih sorghum, centro, calopo dan puero. Alat yang digunakan yaitu gunting, tali rafia, cangkul, meteran, kertas HVS, timbangan analitik, botol timbang, oven dan eksikator. Penelitian menggunakan rancangan acak kelompok (RAK) berpola faktorial 3 x 2 dengan 3 kelompok. Faktor yang diteliti ada 2 yaitu : (1) Sistem tanam tumpangsari terdiri atas S<sub>1</sub> (Sorghum+Centro), S<sub>2</sub> (Sorghum+Calopo), S<sub>3</sub> (Sorghum+Puero), (2) Waktu tanam sorghum terdiri atas W<sub>1</sub>(4 minggu setelah legum), W<sub>2</sub> (6 minggu setelah legum). Parameter yang diukur adalah penambahan tinggi tanaman, penambahan daun, laju asimilasi bersih dan laju pertumbuhan relatif. Data diolah menggunakan sidik ragam yang dilanjutkan dengan Uji Beda Wilayah Ganda Duncan.

Hasil analisis ragam menunjukkan bahwa sistem tanam tumpangsari berpengaruh nyata ( $P < 0,05$ ) terhadap penambahan tinggi (PTT), penambahan daun (PD), laju asimilasi bersih (LAB) dan laju pertumbuhan relatif (LPR) sorghum dan legum. Waktu tanam sorghum tidak berpengaruh nyata, kecuali pada PTT legum. Interaksi keduanya tidak berpengaruh nyata, kecuali pada PTT sorghum. Berdasarkan uji beda wilayah ganda Duncan menunjukkan bahwa pada sistem tanam tumpangsari terdapat perbedaan nyata ( $P < 0,05$ ) terhadap PTT, PD, LAB dan LPR. Waktu tanam dan respon sistem tanam dengan waktu tanam tidak terdapat perbedaan yang nyata.

Kesimpulan dari penelitian ini adalah pada sistem tumpangsari puero-sorghum menghasilkan PTT dan PD sorghum maupun legum tertinggi. LAB dan LPR total tertinggi dicapai pada sistem tanam tumpangsari centro-sorghum dan puero-sorghum. Waktu tanam sorghum 4 minggu dan 6 minggu setelah legum menghasilkan PTT, PD, LAB dan LPR yang sama. Respon sistem tanaman tumpangsari sorghum dengan puero pada waktu tanam sorghum 6 minggu setelah legum menghasilkan PTT, PD, LAB dan LPR terbaik.

Kata kunci : analisis pertumbuhan, legum, sistem tanam tumpangsari, sorghum dan waktu tanam

## ABSTRACT

**RIA PUSPITANINGTYAS. H2C 099 166. 2006.** The Growth Analysis at The Sorghum (*Sorghum bicolor (L) Moench*) Intercropping Plant System from and Legume Variety of Different Plant Period (Tutor : **SYAIFUL ANWAR** and **FLORENTINA KUSMIYATI**)

The research was implemented in experimental garden Laboratory of Ilmu Tanaman Makanan Ternak, Faculty of Animal Agriculture, Diponegoro University, Semarang, from September 2003 until January 2004. The aim of the research is to study about variety of legume and plant period according to intercropping plant system of sorghum.

The used materials include planting media formed to the amount of 30 squares in 3 x 2 m<sup>2</sup> of each, manure, urea, KCl and SP-36. Sorghum, centro, calopo and puero seeds. The used instrument were a pair of scissors, rope, broad hoe, metre, HVS paper, analytical scale, bottle, oven and exicator. The research used design random group of factorial pattern 3 x 2 in 3 groups. There were 2 factors included (1) intercropping plant system, there were S<sub>1</sub> (sorghum + centro), S<sub>2</sub> (sorghum + calopo), S<sub>3</sub> (sorghum + puero); (2) sorghum plant period were W<sub>1</sub> (4 week after legume), W<sub>2</sub> (6 week after legume). The parameter was plant height increase, leaf increase, net assimilation rate and relative growth rate. The effect of treatment was analyzed according to various examinations and continued with the Test of Duncan Double Area.

The result indicated intercropping plant system effecting the plant height increase, leaf increase, net assimilation rate and relative growth rate of sorghum and legume. The plant period of sorghum was not effecting, except the plant height increase of legume. Both interactions was not effecting, except the plant height increase of sorghum. According to the test of Duncan Double Area, it indicated intercropping plant system was different from the Plant Height Increase, Leaf Increase, Net Assimilation Rate and Relative Growth Rate. Plant period and plant system respon were not different from plant period.

The conclusion of the research was intercropping plant system of puero-sorghum to producing the highest sorghum and legume Plant Height Increase and Leaf Increase. Highest total Net Assimilation Rate and Relative Growth Rate produced by intercropping plant system of centro-sorghum and puero-sorghum. The plant period sorghum was 4 and 6 weeks after legume produced the same product of the Plant Height Increase, Leaf Increase, Net Assimilation Rate and Relative Growth Rate. The respon of intercropping plant system of sorghum on puero in 6 weeks plant period after legume produced the best Plant Height Increase, Leaf Increase, Net Assimilation Rate and Relative Growth Rate.

Key word : The growth analysis, legume, intercropping plant system, sorghum and plant period.