

ABSTRAK

Suarna Samai. 15013008004. 2008. Karakterisasi dan Asosiasi Beberapa Spesies *Mucuna* Sebagai *Legum Cover Crop* (LCC) di Perkebunan Kelapa Sawit PTPN VIII Wangunreja Subang Jawa Barat Disertasi Doktor, Program Pascasarjana Universitas Padjadjaran Bandung, di bawah bimbingan Amir Hamzah Soeminpoera, Oktap Ramlan Madkar dan Agung Karuniawan.

Penelitian telah dilaksanakan dengan tujuan untuk mengetahui karakteristik dan asosiasi beberapa spesies *Mucuna* spp asli Indonesia dan *Mucuna brahteata* asal India dengan gulma di perkebunan kelapa sawit. Percobaan lapangan dilaksanakan dua tahap penelitian. Penelitian tahap pertama untuk mengetahui karakter morfologi dan agronomi *Mucuna* spp sebagai *legum cover crop* (LCC), dilakukan di Kebun Percobaan Ciparanje selama dua musim tanam mulai November 2008 s.d. Pebruari 2010. Percobaan disusun dalam rancangan acak kelompok yang terdiri dari 28 spesies *Mucuna* sebagai perlakuan dan diulang dua kali. Variabel yang diamati adalah karakter morfologi dan agronomi. Analisis statistik meliputi analisis klaster, Tinggi *Mucuna* dan Indeks Luas Daun. Penelitian tahap kedua bertujuan untuk mengetahui asosiasi gulma dengan LCC di perkebunan Sawit dilakukan di perkebunan kelapa sawit PTPN VIII Subang mulai bulan Maret 2010 s.d. November 2011. Percobaan tahap kedua disusun dalam rancangan kelompok terdiri dari 16 perlakuan kombinasi beberapa jenis LCC yang dilakukan pada dua lahan yaitu lahan yang diberi perlakuan herbisida dan tanpa herbisida. Variabel yang diamati meliputi Bobot Kering Gulma, Persentase Luas Penutupan LCC, Asosiasi Gulma dan Keanekaragaman Gulma. Data dianalisis dengan menggunakan analisis varians, Indeks Asosiasi, indeks simpson dan indeks shannon, Uji Scott-Knott dan uji t. Hasil penelitian menunjukkan bahwa *Mucuna* asli Indonesia yang berpotensi sebagai LCC adalah *Mucuna pruriens* var. *utilis* asal Papua yaitu MP1, MP2 dan MP3. Jenis Gulma tertinggi pada lahan tanpa herbisida gulma adalah *Digitaria ciliaris* (Restz) dan pada lahan herbisida *Ageratum conyzoides*. LCC campuran MP2+MP3, MP1+MP2, MP1+MP3 berpengaruh nyata terhadap penekanan gulma berdasarkan luas persentase penutupan gulma dan bobot kering gulma. Asosiasi antara *Digitaria ciliaris* (Restz) dengan LCC: *Mucuna* dan *Kudzu* yang tertinggi berbentuk asosiasi tidak jelas (*), dan dengan *Mucuna bracteata* dan LCC campuran berbentuk asosiasi negatif (-). Pada lahan tanpa Herbisida asosiasi antara gulma *Ageratum conyzoides* dengan *Mucuna*, *Kudzu* dan LCC campuran tertinggi berbentuk asosiasi positif (+) dan dengan *Mucuna bracteata* berbentuk asosiasi tidak jelas (*). Hasil analisis keanekaragaman gulma berdasarkan uji t indeks simpson dan indeks shannon lahan diberi perlakuan herbisida dan herbisida tidak berbeda nyata.

Kata kunci : *Mucuna*, *Legum Cover Crop*, Asosiasi, Gulma, Kelapa Sawit

ABSTRACT

The objectives of these studies were to characterise and to analyze the association between *Mucuna* and weeds at the oil palm plantation. Field trials were conducted in two phases. The first phase was conducted within two different seasons from November 2008 to February 2010 at Ciparanje. In this first field experiment, 28 accessions of *Mucuna* as legume cover crops (LCC) were employed as treatment and were repeated twice. *Mucuna* sp agronomical and morphological characteristics were measured. The statistical analysis were clustering pattern, height and leaf area indices. The second stage, the field experiment, conducted between March 2010 and November 2011 in a palm plantation to investigate the association between LCC and weeds. The field experiment used were randomized Block design with 16 levels of LCC treatment combinations and were conducted in 2 types of soil plots (with or without applying herbicide). The experiments were repeated twice. The observed traits were dried weight of the weeds, percentages of area covered by LCC, association between weeds and LCC as well as weed varieties. Data analysis utilized ANOVA, Scott Knott test, vegetation analysis, cluster analysis, Index association and t test. The results showed that among indigenous Indonesian *Mucunas*, *Mucuna pruriens* var. *utilis* from Papua i.e. MP1, MP2 and MP3 can potentially be used as LCC. The highest Weeds species within plot without herbicide was *Digitaria ciliaris* (Restz) while that in plot with herbicide was *Ageratum conyzoides*. Based on the observed dried weight of the weeds and percentages of area covered by LCC, combination of MP2+MP3, MP1+MP2 and MP1+MP3 were statistically significant in controlling weeds. The type of association between *Digitaria ciliaris* (Restz) and LCC: *Mucuna* and *Kudzu* in plot with herbicide was dominated by unclear (*) association and the one between *Digitaria ciliaris* (Restz) and *Mucuna bracteata* dan mixed LCC was dominated by negative (-) association. For plot without herbicide, relationship between weed (*Ageratum conyzoides*) and *Mucuna*, *Kudzu* and mixed LCC was dominated by positive (+) association and the one between weed (*Ageratum conyzoides*) and *Mucuna bracteata* was dominated by unclear(*) association. Based on *t-test*, Simpson and Shannon's tests, weed varieties in plots with and without herbicide were not significantly different.

Key words : *Mucuna*, Legum Cover Crops, Association, Weeds, Palm Plantation