UNIVERSITI PUTRA MALAYSIA

EFFECT OF SILVICULTURAL TREATMENTS ON BULUHMADU (*GIGANTOCHLOA ALBOCILIATA (MUNRO) KURZ)* FOR SHOOT PRODUCTION

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MASTER OF SCIENCE
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By

JOHAR BIN MOHAMED

Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia, in Fulfilment of the Requirement for Degree of Master of Science

November 2012

Special dedicated to

My Mother and Father

My Brothers and Sisters

My Beloved Wife

Abstract of thesis to the Senate of Universiti Putra Malaysia in fulfilment of the requirement for the degree of Master of Science

EFFECT OF SILVICULTURAL TREATMENTS ON BULUH MADU (*GIGANTOCHLOA ALBOCILIATA (MUNRO) KURZ*) FOR SHOOT PRODUCTION

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November 2012

Chairman : Associate Professor Azmy Bin Hj. Mohamed, Phd

Faculty : Forestry

Bamboo recources in Malaysia are limited and usually acquired from forest wildly and also small scale bamboo plantation. It has high potential and demand in the local market and worldwide. Most of the bamboo shoots in the local market are still being imported from other countries, especially China, Taiwan and Thailand. Therefore, this study was carried out to determine the best Silviculture treatment (planting technique, fertilizer regime, harvesting method) and their interaction for commercial shoot production. 480 seedlings were arranged using Split-Split-Plot design while the data was analyzed using SPSS 12.0. The parameters were number of culm, heigh of culm, number of shoot, height of shoot and weight of shoot. There are significant difference p at ≤0.05 level for fertilizer regime; which chicken dung give highest of all parameters compared to NPK. Harvesting method showed significant difference at p ≤0.05 with 51%-75 % harvesting method for number of culm and height of clump, but no significant for number of shoot, height of shoot and weight of shoot. Planting technique also showed significant difference at p ≤0.05 level for height of clump but no significant different

for other parameter. However, there was significant difference at $p \leq 0.05$ level for interaction between harvesting method and planting technique for number of culm and height of clump. The significant difference also showed for interaction between fertilizer regime and planting technique for shoots parameters. Rainfall have high effect to bamboo shoot production. Commercial bamboo plantation for shoot production need a good irrigation system for water supply, using chicken dung (organic fertilizer), control harvesting method with range 51 % - 75 % harvesting for sustainable yield and maintained residues.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Master Sains

KESAN RAWATAN SILVIKULTUR TERHADAP BULUH MADU (*GIGANTOCHLOA ALBOCILIATA (MUNRO) KURZ*) UNTUK PENGELUARAN REBUNG

Oleh

JOHAR BIN MOHAMED

November 2012

Pengerusi : Profesor Madya Azmy Bin Hj. Mohamed, Phd

Fakulti : Perhutanan

Sumber buluh di Malaysia adalah terhad dan biasanya diperolehi daripada buluh yang tumbuh liar di hutan dan juga dari ladang buluh berskala kecil. Ia mempunyai potensi dan permintaan dalam pasaran tempatan dan antarabangsa. Kebanyakan rebung di pasaran tempatan masih diimport dari negara-negara lain terutamanya dari China, Taiwan dan Thailand. Sehubungan itu, kajian ini telah dijalankan untuk menilai rawatan silvikultur yang terbaik (teknik penanaman, regim baja dan kaedah penuaian) dan interaksi diantara rawatan-rawatan silvikultur tersebut untuk penghasulan rebung secara komersial. 480 anak benih telah disusun menggunakan rekabentuk *Split Split-Plot* dan kemudian data dinalisis menggunakan perisian SPSS 12.0. Parameter yang di gunakan ialah bilangan batang, tinggi batang, bilangan rebung, tinggi rebung dan berat rebung. Terdapat perbezaan yang ketara pada aras $p \leq 0.05$ untuk rejim baja; tahi ayam memberikan hasil tertinggi terhadap semua parameter berbanding NPK. Kaedah penuaian menunjukkan perbezaan yang ketara pada aras $p \leq 0.05$ dengan kaedah penuaian 51 % -75 % untuk bilangan batang buluh dan ketinggian rumpun, tetapi tidak ketara

untuk bilangan rebung, ketinggian rebung, dan berat rebung. Teknik penanaman juga menunjukkan perbezaan yang jelas pada aras $p \leq 0.05$ untuk ketinggian rumpun tetapi tiada perbezaan yang ketara bagi parameter lain. Walau bagaimanapun, terdapat perbezaan yang ketara pada aras $p \leq 0.05$ untuk interaksi antara kaedah penuaian dan teknik menanam terhadap bilanagan batang buluh dan ketinggian rumpun buluh. Perbezaan yang ketara juga didapati daripada interaksi antara rejim baja dan teknik penanaman bagi parameter-parameter rebung. Jumlah hujan memberi kesan yang tinggi kepada pengeluaran rebung. Perladangan komersial buluh untuk pengeluaran rebung memerlukan sistem pengairan yang baik untuk bekalan air, dengan menggunakan tahi ayam (baja organik), kaedah kawalan penuaian dengan julat 51% - 75% penuaian untuk pengeluaran yang berterusan dan mampan serta untuk dirian tinggal.

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APPROVAL

I certify that a Thesis Examination Committee has met on 20 November 2012 to conduct the final examination of Johar Bin Mohamed on his thesis entitled "Effect of Silvicultural Treatments on Buluh Madu (*Gigantochloa albociliata*) for Shoot Production" in accordance with the Universities and Univerty Colleges Act 1971 and the Constitution of the Universiti Putra Malaysia [P.U (A) 106] 15 Mac 1998. The Committee recommends that the student be award the Master of Science.

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This thesis submitted to the Senate of Universiti Putra Malaysia and has been accepted as fulfilment of the requirement for the degree of Master of Science. The members of the Supervisory Committee were as follows:

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DECLARATION

I declare that the thesis is my original work except for quotation and citation which have been duly acknowledged. I also declare that it has no previously, or concurrently for any degree at Universiti Putra Malaysia or other institutions.

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JOHAR BIN MOHAMED

Date: 20th November 2012

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