

SEAMEO BIOTROP

The Southeast Asian Regional Centre for Tropical Biology

awards this :

Certificate of Appreciation


to

Dr. Melya Riniarti

for serving as Oral Presenter during the

National Seminar on Land Restoration for Sustainable Land Productivity

held on 26 September 2016 at SEAMEO BIOTROP, Bogor, Indonesia



Dr Irdika Mansur

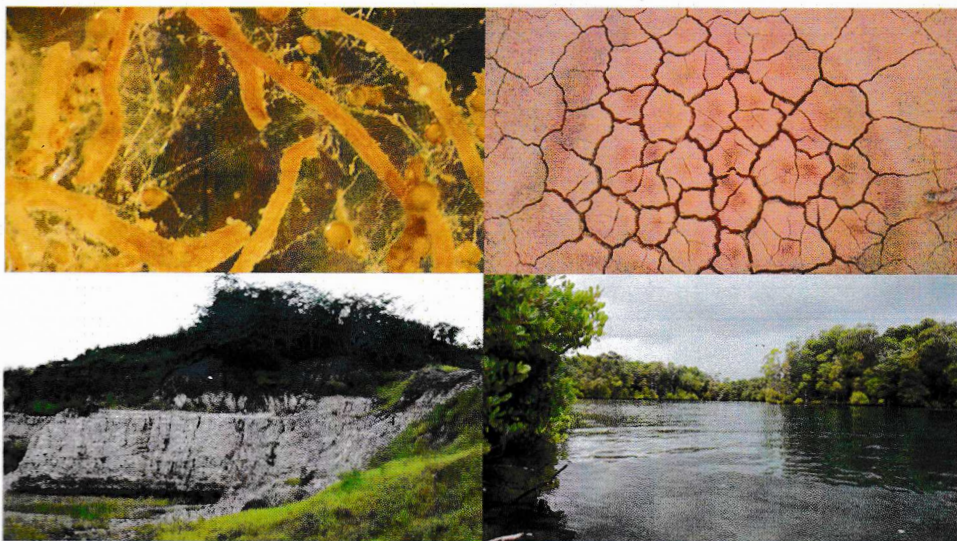
Director

SEAMEO BIOTROP **National Seminar on Land Restoration** **for Sustainable Land Productivity**

26 - 27 September 2016

Program and Abstract Book

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SEAMEO BIOTROP
Southeast Asian Regional Centre for Tropical Biology

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**Effect of heat treatment on ectomycorrhizal ability to colonize
Shorea javanica seedlings**

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Ectomycorrhizal was one of a key factor for forest regeneration after a major disturbance such as forest fire. It has been widely known that ectomycorrhizal fungi association enhance plant growth and survival. Understanding the effect of fire on the ability of ectomycorrhizal to colonize seedling would be great information to solve tree plantation problems after forest fire. The soils collected from an old mixed forest with *Shorea javanica* as the main trees, in the western Lampung Province Indonesia (known as Repong Damar). Soil samples were collected at 15 cm depth then subjected to four heat treatments of none, 40°C, 70°C and 100°C for 24 hours. *S. javanica* seedlings were used as host plant. Seedlings were harvested in four months after planting. Mycorrhizal colonization, seedlings height and diameter, leaf area, and seedlings biomass were measured as well. Heat treatments have not influenced on ectomycorrhizal ability to colonize *S. javanica* seedlings. Mycorrhizal colonization was more than 55% for all treatments. Only 70°C had a lower colonization compare with no heat treatments. There was a correlation between leaf area and roots biomass with mycorrhizal colonization. There was no relationship between mycorrhizal colonization and roots length.

Keywords: ectomycorrhiza, forest fire, heat, *Shorea javanica*



The Effect Of Heat Treatment On Ectomycorrhizal Ability To Colonize *Shorea javanica* Seedlings



Melya Riniarti
Anggraini Eka W.
Surnayanti



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- Ectomycorrhizal was one of a key factor for forest regeneration after a major disturbance such as forest fire.
- It been widely known that the ectomycorrhizal fungi association enhancing growth and improving tree survival.
- Understanding the effect of fire on the ability of ectomycorrhizal to colonize seedling would be great information to solve tree plantation problems after forest fire



Method



Inokulum tanah diambil dari
bahwa tegakan Shorea
javanica, di daerah Krui, Prov.
Lampung



Perlakuan
0°C, 40°C, 70°C, 100°C
Selama 1x24 jam



Diberikan 10
g/tanaman/perlakuan

Shorea javanica 1
bulan setelah disapih

Rancangan Acak
Lengkap

Diamati selama 4
bulan

Result

Rekapitulasi analisis sidik ragam dampak pemanasan inokulum terhadap kemampuan inokulasi ektomikoriza dan pertumbuhan damar mata kucing (*S. javanica*)

Perlakuan	T	D	D	LD	BKP	BKA	BKT	PA	%K
Pemanasan									
Inokulum Tanah	**	tn	*	**	tn	*	tn	*	**

T : pertambahan tinggi tanaman

D : pertambahan diameter tanaman

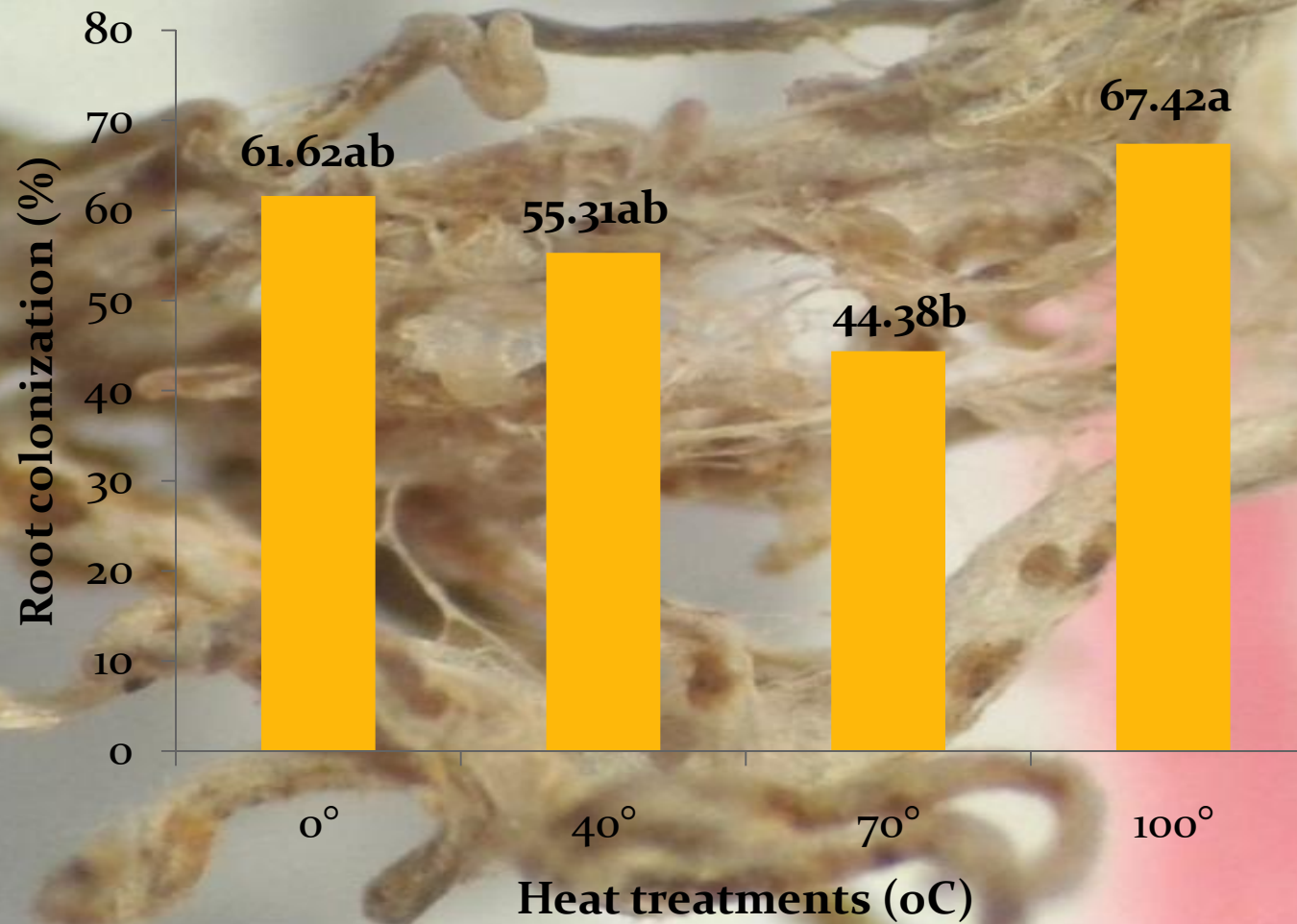
D : jumlah daun pada bulan keempat

LD : luas permukaan daun

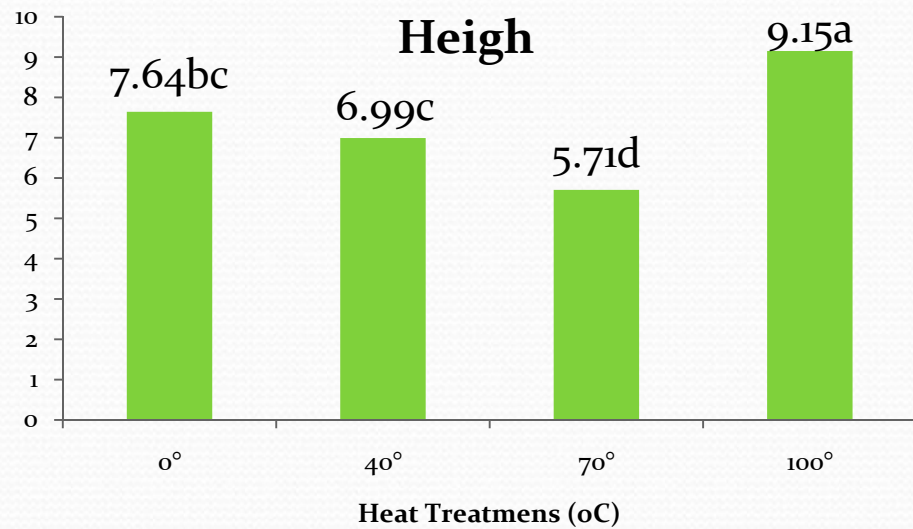
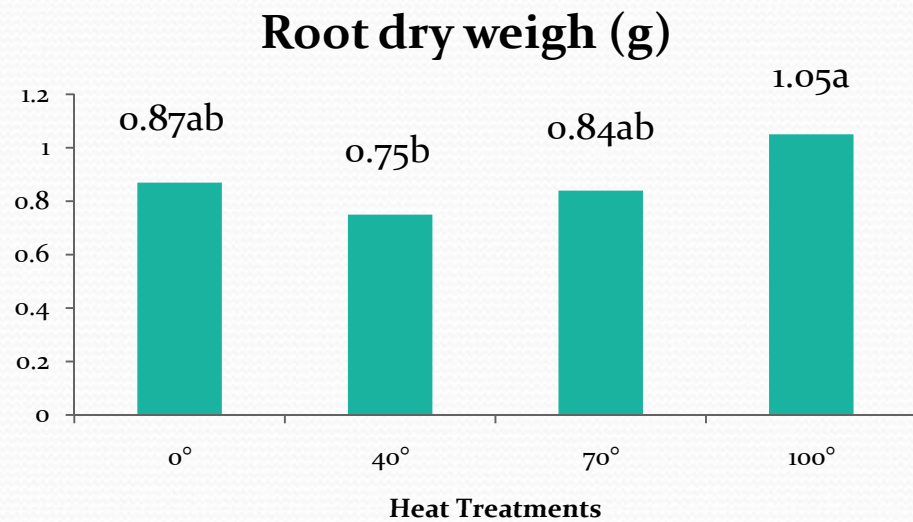
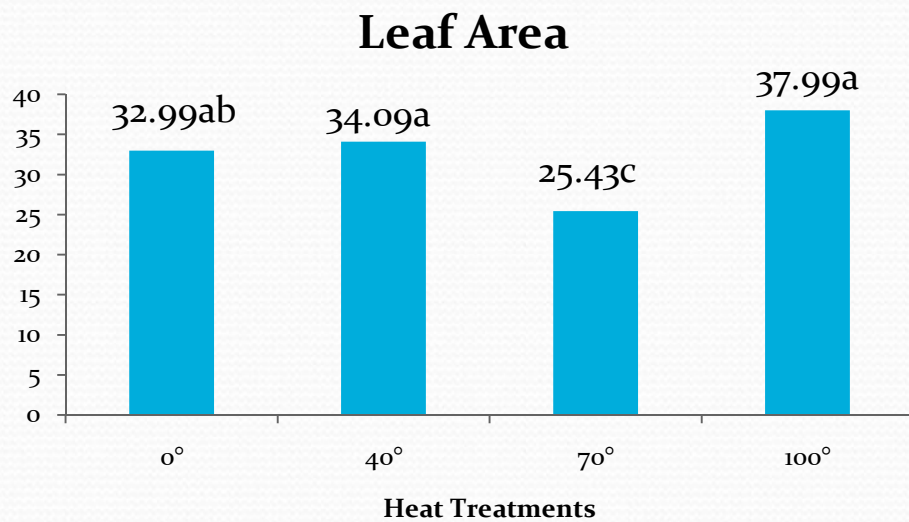
BKP : berat kering pucuk

BKA : berat kering akar

Root Colonization (%)



Growth Response





Thank you