

Pengaruh Penambahan *Trichoderma* dan Pupuk Lambat Tersedia terhadap Perkembangan Gejala Kerusakan Daun Semai Tusam (*Pinus merkusii* Jungh. et de Vriese)

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INTISARI

Teknologi *single tube* dikenalkan pada persemaian tusam untuk meningkatkan efisiensi dalam penyediaan bahan tanaman. Teknologi ini di lapangan menghadapi banyak masalah, seperti semai tumbuh di bawah standar. Penggunaan bahan kimia tidak sepenuhnya memecahkan masalah dan penggunaan bahan kimia sendiri mempunyai banyak kerugian terhadap kesehatan lingkungan. Pendekatan baru menggunakan agen biologi dan manipulasi lingkungan telah banyak digunakan pada produksi tanaman.

Penelitian ini bertujuan untuk menguji pengaruh pemberian agen pengendali hayati *Trichoderma* spp. dan pupuk lambat tersedia terhadap perkembangan gejala pada semai tusam. Penelitian dilakukan di persemaian tusam Linggoasri, KPH Pekalongan Timur dan di Laboratorium Perlindungan Hutan, Fakultas Kehutanan, UGM. Penelitian menggunakan 960 semai tusam umur 4 bulan yang menunjukkan gejala kerusakan diseleksi dan diperlakukan dengan pemberian *Trichoderma* sebagai agen biologi dan pupuk lambat tersedia. Perlakuan diatur menggunakan rancangan acak lengkap (RAL) menggunakan 960 satuan percobaan. Pengaruh perlakuan yang diamati adalah pemulihan kesehatan dan pertumbuhan semai.

Hasil penelitian menunjukkan bahwa perlakuan kombinasi antara *Trichoderma* dan pupuk lambat tersedia mempunyai pengaruh lebih baik dibandingkan tanpa perlakuan. Perlakuan mempunyai pengaruh terhadap perkembangan pemulihan kondisi kesehatan semai sebesar 55,83% dan mampu menekan kematian semai sampai 24,17%. Perlakuan juga berpengaruh paling baik terhadap pertumbuhan dan kekokohan semai.

Kata kunci : semai tusam, *single tube*, kerusakan daun, *Trichoderma*, pupuk lambat tersedia

EFFECT OF INCREMENT *TRICHODERMA* AND SLOW RELEASE FERTILIZER AGAINST IMPROVING SYMPTOM OF PINE (*Pinus merkusii* Jugh. et de Vriese) SEEDLING LEAF DISEASE

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ABSTRACT

Single tube technology was introduced into pine nursery to provide efficient process in producing planting stock. The technology is full facing problems in the field as indicated by occurrence of seedling growing under growth standard. The use of chemicals on the problem is not fully solved and the use of chemical itself has many drawbacks from environmental safety. New approach using biological agent and environment manipulation has been developed in many plant production.

This experiment aimed to examine the effect of application of *Trichoderma* spp. dan slow release fertilizer recover the existing symptom of pine seedling. The experiment was set up at Linggoasri pine nursery, East Pekalongan forest district and Laboratory of Forest Protection, Faculty of Forestry, Gadjah Mada University. 960 of four month old seedlings suffering disease symptom were selected and subjected to recovery treatment by application of *Trichoderma* as biological agent and slow release fertilizer. The treatments were arranged in complete randomized design using 960 seedlings as unit sampling. Respon treatment was measured bud on health and growth recovery.

The result showed that combined application of biological agent and fertilizer gave better recovery effect compare to without application. The application had effect to seedling healthy recovery 55.83 percent and be able to reduce seedling death until 24,17 percent. The treatment also showed the best effect to growth and seedling strength.

Key word : pine seedling, single tube, leaf disease, *Trichoderma*, slow release fertilizer