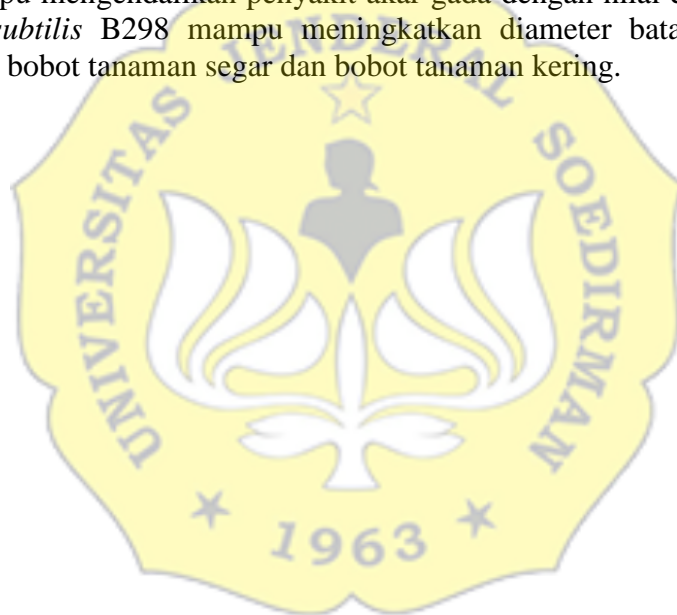


## RINGKASAN

Penelitian bertujuan untuk mengkaji pengaruh antagonis *B. subtilis* dalam mengendalikan penyakit akar gada dan mendapatkan antagonis *B. subtilis* terbaik dalam meningkatkan pertumbuhan tanaman kubis. Penelitian dilaksanakan pada bulan November 2015 sampai Januari 2016, di Laboratorium dan *Green House* Perlindungan Tanaman Fakultas Pertanian, Universitas Jenderal Soedirman. Penelitian ini menggunakan Rancangan Acak Kelompok (RAK) dengan 5 perlakuan dan 6 ulangan. Perlakuan yang diberikan meliputi: kontrol, *B. subtilis* B1, *B. subtilis* B298, campuran *B. subtilis* B1 dan B298 dan fungisida. Variabel yang diamati adalah keparahan penyakit, bobot akar gada, diameter akar gada terbesar, jumlah daun, diameter batang, panjang akar terpanjang, bobot tanaman segar dan bobot tanaman kering. Data dianalisis dengan uji F dilanjutkan dengan BNT 5%. Hasil penelitian menunjukkan bahwa campuran isolat *B. subtilis* B1 dan B298 mampu mengendalikan penyakit akar gada dengan nilai efektifitas 20,41%. Isolat *B. subtilis* B298 mampu meningkatkan diameter batang, panjang akar terpanjang, bobot tanaman segar dan bobot tanaman kering.



## SUMMARY

*The objectives of the research were to assess the effect of *Bacillus subtilis* antagonist to controlling clubroot and get the best antagonist in improving cabbage plant growth. The research was conducted from November 2015 to January 2016, in the Laboratory and Green house of Plant Protection, Faculty of Agriculture, Jenderal Soedirman University. Randomized block design was used with 5 treatments and 6 replicates. The treatments included: control, *B. subtilis* B1, *B. subtilis* B298, a mixture of *B. subtilis* B1 and B298 and fungicides. Variables observed were disease severity, weight of clubroot, greatest of clubroot diameter, number of leaves, stem diameter, length of the longest root, fresh and dry weight of plants. Data were analyzed by F test, then tested further by BNT at the level of 5% error. The result showed that a mixture isolate of *B. subtilis* B1 and B298 can suppress clubroot diseases with the effectiveness value as 20,41%. Isolates of *B. subtilis* B298 can increase stem diameter, length of the longest root, fresh weight of the plant and the dry weight of the plant.*

