

**RESPON PERTUMBUHAN DAN HASIL TANAMAN JAGUNG MANIS  
(*Zea mays Saccharata*) TERHADAP APLIKASI *Plant Growth Promoting  
Rhizobacteria* (PGPR) DAN SISTEM JARAK TANAM**

Oleh : Andre Semuri Fanggidae

Dibimbing Oleh : Dr. Ir. Rukmowati Brotodjojo, M.Agr. dan Dr. Bambang  
Supriyanta, SP.,M.P.

Jagung manis (*Zea mays Saccharata*) merupakan salah satu komoditas yang bernilai ekonomis dan banyak digemari masyarakat Indonesia. Rasa manis pada jagung manis terjadi karena karbohidrat dalam biji jagung mengandung gula reduksi (glukosa dan fruktosa), sukrosa, polysakarida dan pati. Untuk meningkatkan produktivitas dan hasil tanaman jagung manis diperlukan pemberian PGPR serta pengaturan sistem jarak tanam yang tepat. Penelitian ini bertujuan untuk mengetahui takaran PGPR dan sistem jarak tanam yang tepat untuk pertumbuhan tanaman jagung. Penelitian ini telah dilaksanakan pada bulan September 2019 – November 2019 di Kebun Percobaan Fakultas Pertanian UPN Veteran Yogyakarta di dusun Sempu, Desa Wedomartani, Kecamatan Ngemplak, Kabupaten Sleman, Provinsi Yogyakarta. Metode penelitian yang digunakan adalah metode percobaan lapangan yang disusun dengan Rancangan Acak Kelompok Lengkap (RAKL) dengan dua faktor. Faktor pertama yaitu takaran PGPR terdiri atas 3 aras :  $P_1 = 7,5$  ml,  $P_2 = 12,5$  ml,  $P_3 = 17,5$  ml. Faktor kedua dengan perlakuan jarak tanam yang terdiri atas 3 aras :  $J_1 = 70$  cm x 35 cm,  $J_2 = 70$  cm x 40 cm,  $J_3 = 70$  cm x 45 cm. Data pengamatan di analisis secara statistik menggunakan uji *Analysis of Varians* (ANOVA) pada jenjang nyata 5% dan yang terdapat beda nyata dilanjutkan dengan *Duncan Multiple Range Test* (DMRT) pada taraf 5%. Hasil penelitian menunjukkan bahwa perlakuan jarak tanam  $J_2$ , pertumbuhan yang paling baik ditunjukkan pada parameter pengamatan tinggi tanaman umur 8 mst. Perlakuan aplikasi PGPR,  $P_1: 7,5$  mL menunjukkan tidak ada pengaruh nyata terhadap parameter pertumbuhan dan hasil tanaman jagung dan tidak terdapat interaksi nyata antara perlakuan jarak tanam dan aplikasi PGPR.

**Kata Kunci :** Jagung Manis, PGPR, Jarak Tanam

**SWEET CORN (*Zea mays Saccharata*) GROWTH AND YIELD  
RESPONSE ON THE APPLICATION OF PLANT Growth Promoting  
Rhizobacteria (PGPR) AND PLANT SPACING SYSTEM**

By: Andre Semuri Fanggidae

Supervised by: Dr. Ir. Rukmowati Brotodjojo, M.Agr. and Dr. Bambang  
Supriyanta, SP., M.P.

Sweet corn (*Zea mays Saccharata*) is one of the commodities that has economic value and is well-liked by the people of Indonesia. The sweet taste in sweet corn occurs because the carbohydrates in corn kernels contain reducing sugars (glucose and fructose), sucrose, polysaccharides and starches. It is necessary to provide PGPR as well as set the appropriate plant spacing system to increase the productivity and yield of sweet corn plants. This research aimed to find out the exact PGPR dose and plant spacing system for the growth of corn plants. This research was carried out in September 2019 - November 2019 in the Experimental Garden of the Agriculture Faculty, UPN Veterans Yogyakarta in the Sempu Hamlet, Wedomartani Village, Ngemplak District, Sleman Regency, Yogyakarta Province. The research method used was a field trial method that was designed with a Randomized Complete Block Design (RCBD) of two factors. The first factor was the PGPR dose consisting of 3 levels: P1 = 7.5 ml, P2 = 12.5 ml, P3 = 17.5 ml. The second factor was the treatment of plant spacing consisting of 3 levels: J1 = 70 cm x 35 cm, J2 = 70 cm x 40 cm, J3 = 70 cm x 45 cm. The observational data were analyzed statistically using the Analysis of Variance (ANOVA) test at 5% significance level and those that were significantly different were then tested by Duncan Multiple Range Test (DMRT) at 5% level. The results showed that the best growth on the J2 spacing was shown in the observation parameters of plant height at 8 mst. The treatment application of PGPR, P1: 7.5 mL showed no significant effect on the growth parameters and yield of corn and there was no real interaction between the treatment of spacing and PGPR application.

**Keywords:** Sweet Corn, PGPR, Plant Spacing