

Intisari

Penyakit kuning keriting pada tanaman cabai disebabkan oleh *Begomovirus*. Penyakit ini ditularkan dan disebarkan melalui serangga vektor, yaitu *Bemisia tabaci*. Pengendalian saat ini masih terfokus pada vektor virus dengan menggunakan insektisida, yang berdampak negatif dan dapat mencemari lingkungan. Alternatif pengendalian yang aman dan ramah lingkungan adalah dengan pemanfaatan agens hayati (*Plant Growth Promoting Rhizobakteria* /PGPR), salah satunya adalah *Bacillus* sp. penelitian bertujuan untuk mengetahui pengaruh *Bacillus* sp. dalam menekan intensitas penyakit kuning. Penelitian dilakukan di Desa Harjobinangun, Pakem, Sleman, Yogyakarta pada bulan November 2014 sampai Januari 2015 menggunakan cabai varietas Twist, *Bacillus* sp. dengan konsentrasi 10^6 cfu/gr koleksi dari Jurusan Mikrobiologi, Fakultas Pertanian, Universitas Gadjah Mada dengan. Hasil penelitian, menunjukkan bahwa aplikasi *Bacillus* sp. dapat menurunkan kejadian penyakit dan intensitas penyakit keriting kuning, pada fase vegetatif sebesar 67,82% dan 22,81% sedangkan pada fase generatif sebesar 42% dan 55,63%. Pada tanaman perlakuan terjadi peningkatan tinggi dan diameter batang tanaman, pada fase vegetatif sebesar 4,85% dan 11,11% sedangkan pada fase generatif sebesar 20% dan 11,71%. Pada perlakuan *Bacillus* sp. mengalami peningkatan jumlah cabang produktif, panjang akar dan volume akar sebesar 12,51%, 9,52% dan 21,82%. Aplikasi *Bacillus* sp. meingkatkan jumlah dan bobot panen sebesar 17,20% dan 37,38%. Tanaman perlakuan memiliki kualitas buah yang lebih baik, ditunjukkan dengan peningkatan panjang buah, diameter buah, dan bobot buah layak jual sebesar 10,23%, 12,83% dan 51,79%.

Kata kunci : Penyakit kuning keriting, *Bacillus* sp., intensitas penyakit, produksi tanaman.

Abstract

THE EFFECT OF *Bacillus* sp. APPLICATION TOWARDS PAPPER YELLOW LEAF CURL DISEASE, GROWTH, AND THE PRODUCTION OF CHILI PEPPER

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Papper yellow leaf curl disease is caused by *Begomovirus* and spread by vector insects called *Bemiciatabaci*Genn. The prevention action, so far, is done by using insecticide which in fact has negative impacts and high possibility to contaminate the environment. The alternative way to control the disease which is safe and eco-friendly is by applying *Plant Growth Promoting Rhizobakteria* (PGPR). One of the bacteria which can be used is *Bacillus* sp. The purpose of the research is to find out the effect of *Bacillus* sp. in suppressing Papper yellow leaf curl disease. The research was done in Harjobinangun, Pakem, Sleman, Yogyakarta from November 2014 to January 2015. The instruments of this research were chilies Twist variety, *Bacillus* sp. 10^6 cfu/gr concentration which is taken from the collection of Microbiology Department, Agricultural Faculty, University of GadjahMada. The result of the research showed that *Bacillus* sp. could decrease the level of disease insidensy and disease intensity on vetetatif phase about 67,82% and 22,81% meanwhile on generatif phase about 42% and 55,63%. The application of *Bacillus* sp. increased the growth and the development of plants height and branch on vegetatif phase about 4,85% and 11,11%, meanwhile on generatif phase about 20% and 11,71%. The application of *Bacillus* sp. increased ammount of productive branches, root lengt and rood volume about 12,51%, 9,52% and 21,82%. The application of *Bacillus* sp. increased the number and weight harvest of the plants, about 17,20 and 37,38%. In addition, the application of *Bacillus* sp. could increase the quality of the chilies with the increasing of the length of the chilies about 10.23%, the diameter about 12.83%, and the weight of the consumable chilies about 51,79%%

Keywords: Papper yellow leaf curl disease, *Bacillus* sp., disease intensity, plants production