

APLIKASI OLIGO-KHITOSAN TERHADAP PERTUMBUHAN DAN HASIL PADI VARIETAS DIAH SUCI DI KARANGDOWO KABUPATEN KLATEN

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ABSTRAK

Tujuan penelitian adalah untuk mengetahui pengaruh penggunaan oligo – khitosan terhadap pertumbuhan dan hasil padi varietas Diah Suci yang dihasilkan dari iradiasi sinar gamma oleh pusat aplikasi isotop dan radiasi BATAN. Penelitian dilaksanakan di Desa Sentono, Kecamatan Karangdowo, Kabupaten Klaten, Jawa Tengah, terletak di ketinggian 100 mdpl dan jenis tanah regosol, Mei sampai Agustus 2016.

Penelitian ini disusun berdasarkan rancangan petak terpisah (*split plot design*) yang terdiri atas 2 faktor. Petak utama (main plot) adalah frekuensi pemberian oligo – khitosan terdiri atas 3 aras, F₁: frekuensi pemberian oligo – khitosan sebanyak 3 kali selama masa tanam, dan diberikan saat tanaman berumur 20 HST, 40 HST, 60 HST, F₂: frekuensi pemberian oligo – khitosan sebanyak 4 kali selama masa tanam, dan diberikan saat tanaman berumur 20 HST, 33 HST, 46 HST, 60 HST dan F₃: frekuensi pemberian oligo – khitosan sebanyak 5 kali selama masa tanam, dan diberikan saat tanaman berumur 20 HST, 30 HST, 40 HST, 50 HST, 60 HST dan anak petak (sub plot) adalah konsentrasi oligo – khitosan, K₁: 50 ppm = 5 ml/ 5 l/ 16 m², K₂: 100 ppm = 10 ml/ 5 l/ 16 m², K₃: 150 ppm = 15 ml/ 5 l/ 16 m². Parameter yang diamati adalah tinggi tanaman, jumlah daun, jumlah anakan, bobot kering akar tanaman, bobot kering tunas, jumlah malai per rumpun, panjang malai per rumpun, jumlah gabah per malai, bobot 1.000 biji, bobot gabah per rumpun, bobot gabah per petak, bobot gabah per ha.

Berdasarkan sidik ragam dengan uji lanjut *Duncan's Multiple Range Test* (DMRT) dengan taraf 5%, menunjukkan bahwa antara perlakuan frekuensi dan konsentrasi oligo – khitosan tidak terdapat interaksi, tetapi menunjukkan beda nyata terhadap parameter jumlah daun, jumlah anakan, bobot kering tunas, jumlah malai per rumpun, panjang malai per rumpun, bobot gabah per rumpun, bobot gabah isi per rumpun. Pada parameter tinggi tanaman, bobot kering akar, jumlah gabah per malai, bobot 1.000 biji, bobot kering giling per petak dan bobot kering giling per hektar menunjukkan tidak ada beda nyata.

Kata kunci : Oligo-khitosan, padi, frekuensi dan konsentrasi.

THE APPLICATION OF OLIGO – KHITOSAN TO THE GROWTH AND YIELD OF RICE VARIETY OF DIAH SUCI IN KARANGDOWO KLATEN

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ABSTRAK

The research aimed to know the effect of the usage of oligo – khitosan to the growth and yield of rice variety of Diah Suci which was yielded from gamma irradiation by BATAN. The research was conducted in Sentono Village Karangdowo Klaten District Central Java, on the 100 MASL of regosol soil, on May till August 2016.

The research was compiled based on split plot design which consist of 2 factors. The main plot sprayed with oligo – khitosan in 3 frequencies, F1: the frequency where Oligo – khitosan sprayed 3 times during the planting period to the 20 HST, 40 HST, and 60 HST plant, F2: the frequency where Oligo – khitosan sprayed 4 times during the planting period to the 20 HST, 33 HST, 46 HST and 60 HST plant, and F3: the frequency where Oligo – Khitosan sprayed 5 times during planting period to the 20 HST, 30 HST, 40 HST, 50 HST and 60 HST plant and the sub plot sprayed with Oligo – Khitosan in 3 concentrations, K1: 50 ppm = 5 ml/ 5 l/ 16 m², K2: 100 ppm = 10 ml/ 5 l/ 16 m², K3: 150 ppm = 15 ml/ 5 l/ 16 m². Parameters observed in this research were : plant height, number of leaves, number of tillers, dry weight of plant root, dry weight of shoot, number of panicle per plants, length of panicle per plants, number of grain per panicle, 1000 grains weight, number of grain per plot, number of grain per hectare.

Based on the analysis of variance using the *Duncan's Multiple Range Test* at the level 5%, the result showed that between the treatment of the frequency and concentration of Oligo – Khitosan there was no interaction, but it showed significant differences to the parameter of number of leaf, number of tiller, dry weight of shoot, number of panicle per plants, length of panicle per plants, weight of grain per plants, weight of filled grain per plants. On the parameter of plant height, dry weight of root, number of grain per panicle, 1000 grain weight, dry milled weight per plot, and dry milled weight per hectare showed no real difference.

Keywords: Oligo-khitosan, rice, frequencies and concentration.