

## INTISARI

### APLIKASI SILIKA UNTUK INDUKSI KETAHANAN DELAPAN HIBRIDA KELAPA SAWIT (*Elaeis guineensis* Jacq.) TERHADAP CEKAMAN SALINITAS

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Penelitian bertujuan untuk mengkaji pengaruh aplikasi silika untuk meningkatkan ketahanan terhadap cekaman salinitas pada berbagai hibrida kelapa sawit. Percobaan disusun dalam rancangan acak kelompok lengkap (RAKL) faktorial dengan tiga blok sebagai ulangan. Faktor pertama adalah hibrida kelapa sawit, yang terdiri dari: Yangambi, Avros, Langkat, PPKS 239, Simalungun, PPKS 540, PPKS 718 dan Dumpy. Faktor kedua adalah dosis silika yang terdiri dari 5 aras yaitu: 0; 2,6; 5,1; 7,7; dan 10,2 g/bibit. Pengamatan dilakukan terhadap beberapa variabel mikroklimat di lokasi penelitian, aktivitas fisiologis serta pertumbuhan bibit kelapa sawit. Data yang telah diperoleh selanjutnya dianalisis varian (ANOVA) pada taraf 5 %, dan dilanjutkan dengan uji jarak berganda Duncan (DMRT). Dosis optimal silika yang mampu meningkatkan ketahanan bibit kelapa sawit terhadap cekaman salinitas ditentukan menggunakan analisis regresi. Hasil penelitian memberikan informasi bahwa aplikasi silika pada bibit kelapa sawit mampu menginduksi ketahanan terhadap cekaman salinitas melalui peningkatan Laju Pertumbuhan Nisbi. Dosis optimal silika untuk menginduksi ketahanan hibrida kelapa sawit terhadap cekaman salinitas berkisar antara 5,1 – 10,2 g/bibit. Hibrida Dumpy, Langkat dan Simalungun mampu menghadapi cekaman salinitas lebih baik daripada Yangambi, Avros, PPKS 239, PPKS 718, dan PPKS 540.

Kata kunci: kelapa sawit, salinitas, silika

***Abstract***

**APPLICATION OF SILICA FOR INDUCTION OF RESISTANCE OF EIGHT OIL PALM (*Elaeis guineensis* Jacq.) HYBRIDS TO SALINITY STRESS**

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The objectives of research were to study the response of silica ( $\text{SiO}_2$ ) to induce the resistance of oil palm hybrid to salinity stress. The experiment was arranged in Randomized Complete Block Design (RCBD) factorial, with three blocks as replications. The first factors were the hybrids of oil palm, namely Yangambi, Avros, Langkat, PPKS 239, Simalungun, PPKS 540, PPKS 718 and Dumpy. The second factors were the silica applications, namely 0; 2,6; 5,1; 7,7; and 10,2 g/seedling. Observed variables in the study were environmental conditions, the concentration of silica in the leaf tissue, physiological activities and growth of oil palm seedlings. Data were analyzed using Analysis of Variance (ANOVA) at 5 % levels, and continued with Duncan's Multiple Range Test (DMRT) if there were significant differences among the treatments. The optimal dose of silica that able to increase the resistance of oil palm seedlings to salinity stress were determined using regression analysis. The results provide information that the applications of silica in oil palm seedlings could induce the resistance to salinity stress through increasing of Relative Growth Rate. The optimal dose of silica that able to induce the resistance of oil palm hybrids to salinity stress was at range 5.1 -10.2 g/seedling. The hybrids of Dumpy, Langkat and Simalungun were more resistant to salinity stress compared to Yangambi, Avros, PPKS 239, PPKS 718, and PPKS 540.

**Key words:** *oil palm, salinity, silica*