

OSMOCONDITIONING BENIH KEDELAI HITAM SIMPANAN DENGAN BERBAGAI BERAT MOLEKUL DAN KONSENTRASI POLIETILEN GLIKOL (PEG) TERHADAP MUTU BENIH KEDELAI HITAM (*Glycine max* L. Merr.)

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ABSTRAK

Kedelai (*Glycine max* L. Merr.) merupakan salah satu komoditi pangan yang penting di Indonesia. Tahun 2018 produksi kedelai nasional sebesar 982.598 ton sedangkan impor kedelai mencapai 2,5 juta ton. Salah satu faktor pembatas produksi kedelai di daerah tropis adalah cepatnya kemunduran benih selama penyimpanan. Salah satu solusi untuk mengatasi hal ini adalah dengan teknik invigorasi. Penelitian ini dilaksanakan pada bulan Juni sampai dengan Juli 2020, di Desa Baledono, Purworejo, Jawa Tengah. Penelitian dilakukan menggunakan benih kedelai hitam varietas Detam 1 yang telah disimpan selama 28 bulan. Percobaan dilakukan menggunakan metode RAL 1 faktor dan diulang sebanyak 3 kali. Terdapat 9 perlakuan yang meliputi P1 : PEG-4000 konsentrasi 30%, P2 : PEG-4000 konsentrasi 40%, P3 : PEG-4000 konsentrasi 50%, P4 : PEG-6000 konsentrasi 20%, P5 : PEG-6000 konsentrasi 30%, P6 : PEG-6000 konsentrasi 40%, P7 : PEG-8000 konsentrasi 20%, P8 : PEG-8000 konsentrasi 30%, P9 : PEG-8000 konsentrasi 40%, dan kontrol. Data hasil pengamatan dianalisis keragamannya pada $\alpha = 5\%$. Untuk mengetahui beda nyata perlakuan dilakukan uji *Duncan Multiple Range Test* (DMRT) pada taraf 5%. Hasil penelitian menunjukkan bahwa penggunaan PEG berpengaruh pada parameter potensi tumbuh maksimum, *first count*, tinggi tanaman, dan bobot kering. PEG-8000 dengan konsentrasi 30% cenderung memberikan hasil potensi tumbuh maksimum benih, *first count*, tinggi tanaman dan berat kering yang paling baik dibandingkan perlakuan lain.

Kata kunci: kedelai hitam, benih simpanan, invigorasi, PEG

**OSMOCONDITIONING OF STORED BLACK SOYBEAN SEED USING
VARIOUS MOLECULAR WEIGHT AND CONCENTRATION OF
POLYETYLEN GYLICOL (PEG) ON THE QUALITY OF BLACK
SOYBEAN SEED (*Glycine max* L. Merr.)**

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ABSTRACT

Soybean (*Glycine max* L. Merr.) Is one of the important food commodities in Indonesia. In 2018, the national soybean production was 982,598 tons, while soybean imports reached 2.5 million tons. One limiting factor for soybean production in the tropics is the rapid decline of seeds during storage. One of the solutions to overcome this problem is by means of invigoration techniques. This research was conducted in June until July 2020, in Baledono Village, Purworejo, Central Java. The research was conducted using black soybean seeds Detam 1 variety that had been stored for 28 months. The experiment was carried out using the 1-factor RAL method and was repeated 3 times. There are 9 treatments which include P1: PEG-4000 with 30% concentration, P2: PEG-4000 with 40% concentration, P3: PEG-4000 with 50% concentration, P4: PEG-6000 with 20% concentration, P5: PEG-6000 with 30% concentration, P6: PEG-6000 concentration 40%, P7: PEG-8000 concentration 20%, P8: PEG-8000 concentration 30%, P9: PEG-8000 concentration 40%, and control. The data from the observations were analyzed for the diversity at $\alpha = 5\%$. To determine the significant difference in treatment, the Duncan Multiple Range Test (DMRT) was carried out at the 5% level. The results showed that the use of PEG affected the parameters of the maximum growth potential, first count, plant height, and dry weight. PEG-8000 with a concentration of 30% tends to have the best effect compared to other treatments..

Key words: black soybean, stored seed, invigoration, PEG