UJI DAYA SIMPAN BENIH JAGUNG (*Zea mays* L.) PADA BERBAGAI KEMASAN DAN UJI CEPAT VIABILITAS MENGGUNAKAN METODE USAP (*URINE SUGAR ANALYSIS PAPER)*

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ABSTRAK

Jagung *(Zea mays* L.) merupakan komoditas pangan penting sekaligus bahan baku industri pakan dan pangan olahan. Penurunan mutu benih selama penyimpanan dapat diidentifikasi melalui viabilitas dan vigor benih. Penelitian ini bertujuan mengembangkan metode uji cepat viabilitas benih jagung varietas bisma menggunakan *Urine Sugar Analysis Paper* (USAP). Penelitian ini dilakukan dalam dua tahap. Tahap pertama yaitu menentukan lot benih dengan viabilitas yang berbeda-beda. Rancangan percobaan yang digunakan yaitu Rancangan Acak Lengkap (RAL) satu faktor berupa kemasan yaitu alumunium foil, plastik PP, plastik PE, kertas buram, tanpa kemasan dengan 5 ulangan. Tahap kedua yaitu pengembangan metode USAP melalui kombinasi perlakuan menggunakan RAL dua faktor berupa ukuran pemotongan dan lama perendaman dengan 4 ulangan. Data hasil pengamatan dianalisis menggunakan uji F, apabila berpengaruh signifikan dilanjutkan dengan uji *Duncan's Multiple Range Test* (DMRT) taraf 5%. Hasil penelitian diperoleh kemasan alumunium foil, plastik PP, dan plastik PE memberikan hasil terbaik pada parameter kadar air, daya berkecambah, dan potensi tumbuh maksimum selama penyimpanan benih. Metode USAP dengan benih dihancurkan dan direndam selama 12 jam mampu mendeteksi kebocoran glukosa pada benih.

Kata kunci: daya hantar listrik, jagung, kebocoran membran, penyimpanan benih

TESTING THE STORAGE LIFE OF CORN SEEDS (*Zea mays* L.) IN VARIOUS PACKAGING AND A RAPID VIABILITY TEST USING THE USAP (*URINE SUGAR ANALYSIS PAPER*) METHOD

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ABSTRACT

Corn (*Zea mays* L.) is an important food commodity as well as a raw material for the feed and processed food industries. A decline in seed quality during storage can be identified through seed viability and vigor. This study aimed to develop a rapid test method for the viability of Bisma corn seeds using *Urine Sugar Analysis Paper* (USAP). The study was conducted in two stages. The first stage involved determining seed lots with varying levels of viability. The experimental design used was a one-factor completely randomized design (CRD) with treatments including aluminum foil, PP plastic, PE plastic, opaque paper, and no packaging, with 5 replicates. The second stage involved developing the USAP method through a combination of cutting size and soaking duration treatments using a two-factor CRD with 4 replicates. The observed data were analyzed using the F-test; if significant effects were found, the analysis was continued with *Duncan's Multiple Range Test* (DMRT) at the 5% level. The results showed that aluminum foil, PP plastic, and PE plastic packaging provided the best results for moisture content, germination rate, and maximum growth potential during seed storage. The USAP method, in which seeds were crushed and soaked for 12 hours, was able to detect glucose leakage in the seeds.

Keywords: electrical conductivity, corn, membrane leakage, seed storage