ABSTRACT

EFFECT OF PLASMA RADIATION ON GERMINATION AND GROWTH OF ONION (*Allium ascolonicum* L. Var. Sanren F1) ORIGIN OF TRUE SHALLOT SEED (TSS)

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Sanren F1 shallots are a type of True Shallot Seed (TSS) with low seed viability and vigor. The use of plasma radiation can increase the growth and growth of plant seeds. This study aims to analyze the effect of plasma radiation periods on the germination and growth of TSS Sanren F1 shallots. The research design used was a single-factor Completely Randomized Design (CRD). The factors used were the radiation period with 6 levels, namely: No radiation (control), radiation 5, 10, 15, 20, and 25 minutes. The research parameters observed included germination power, germination rate, vigor index, seed homogeneity, seed death, sprout length, plant height, and number of leaves. The data obtained were analyzed using Analysis of Variance (Anova), followed by Duncan's Multiple Range Test (DMRT) at a confidence level of 95%. The results showed that 15-25 minutes of plasma radiation was able to increase germination power by 96%, germination rate by 0.358%/day, seed homogeneity by 94%, vigor index by 88%, sprout length by 39.94 mm, reduce seed mortality by 0.20 seeds, plant height by 23.80 cm, and leaf number by 3.60 strands. The 15-25 minute plasma radiation period was proven to be able to increase seed germination and TSS growth of Sanren F1.

Keywords: Shallots, Germination, Growth, Plasma Radiation, TSS.