

ABSTRACT

This study is titled The Effect of Fruit Color and Gibberellin Soaking Concentration on Cocoa Seed (*Theobroma cacao* L.) Germination. The study aims to determine the effect of fruit ripeness level, gibberellin concentration, and a combination of both on cocoa seed germination. The study was conducted at the Agroecotechnology Laboratory of the Faculty of Agriculture, Malikussaleh University, North Aceh, from February 20 to April 20, 2026, using a factorial completely randomized design (CRD). factorial. The first factor was fruit maturity level: green (W1), yellow (W2), and orange (W3). The second factor was gibberellin concentration: 0 (G0), 1 (G1), 1.5 (G2), and 2 ml/liter of distilled water (G3). There were 12 treatment combinations with three replicates, resulting in 36 experimental units and 900 seeds. The results of the study showed that fruit maturity level and gibberellin concentration had a highly significant effect on maximum growth potential, germination rate, uniformity of growth, and vigor index. The interaction between the two factors also had a very significant effect on this parameter. The dry weight of normal seedlings showed no significant effect. Orange-colored fruit (W3) was the optimal maturity level, while gibberellin at a concentration of 1.5 ml/liter of distilled water (G2) was the optimal concentration. The W3G2 combination yielded the best results, with a maximum growth potential of 100% and a germination rate of 94.66%. Thus, the use of orange-colored cacao pods soaked in gibberellin at a concentration of 1.5 ml/liter of distilled water is the best combination for improving the viability and vigor of cocoa seeds.

Keywords: Germination capacity, physiological maturity, TSH 858, viability, vigor.