

## ABSTRACT

This research aimed to evaluate the effects of type and soaking duration of natural plant growth regulators (PGRs) on the viability and vigor of red chili seeds (*Capsicum annum* L.). The natural PGRs used were shallot extract (50%), young coconut water (40%), bamboo shoot extract (100%), and a control (distilled water). A completely randomized design with two factors—PGR type and soaking duration (0, 4, 6, and 8 hours)—was applied with three replications. Parameters observed included germination percentage, vigor index, germination speed, uniformity, fresh and dry weight of seedlings, root length, and seedling height. The results showed that PGR type had a significant effect on germination and seed vigor. The highest germination rate (94.16%) and vigor index (89.16%) were obtained from seeds treated with 40% young coconut water, while bamboo shoot extract resulted in the lowest performance. Soaking duration alone did not consistently affect seed performance. However, the combination of 40% coconut water and 6 hours of soaking [K2L2] produced the best outcomes. In conclusion, young coconut water is an effective natural PGR that can improve the physiological quality of red chili seeds, particularly when applied through 6-hour [soaking]. This suggests that coconut water can serve as a practical and eco-friendly alternative to synthetic growth stimulants in seed germination practices.

**Keywords:** *Bamboo shoot, coconut water, seed vigor, seed viability, shallot.*