TELOMERE LENGTH DETERMINATION BASED ON DIFFERENT SEX AND LEAF DEVELOPMENT OF CARICA PAPAYA REVEALED BY POLYMERASE CHAIN REACTION

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Abstract - Telomere has special roles at the ends of eukaryotic chromosomes that consisting of repeated DNA sequences. It protects chromosomes and DNA from damage. Telomeres will be progressively shortened with each of DNA replication until they reach a limited replicative capacity and a critical length that cause the cell to die. The plant sex and the leaf development may change in telomere length. Papaya (*Carica papaya*) is dioecious plants that have female and male organs on separate plants. The aim of this research is to determine the telomere length of papaya from different plant sex and the leaf development. In this research, we observed telomere length in papaya (female and male plants) using Polymerase Chain Reaction (PCR) procedure. The results from this study showed that telomere lengths of male papaya are shorter than female ones. Telomere lengths in the leaf development showed that younger leaves of both male and female papaya leaves are longer compared to older and dried leaves. This research support the hypothesis that the plant sex can change in telomere length and telomeres will be progressively shortened in line with the leaf development from young to dried.

Keywords - Telomere, Papaya, Length