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Expression Level of Dehydration-Responsive Element Binding/DREB Gene of Some Local Corn Cultivars from Kisar Island-Maluku Indonesia Using Quantitative Real-Time PCR

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Abstract : The research objective was to determine the expression level of dehydration responsive element binding/DREB gene of local corn cultivars from Kisar Island Maluku. The study design was a randomized block design with single factor consist of six local corn cultivars obtained from farmers in Kisar Island and one reference varieties wich has been released by the government as a drought-tolerant varieties and obtained from Cereal Crops Research Institute (ICERI) Maros South Sulawesi. Leaf samples were taken is the second leaf after the flag leaf at the 65 days after planting. Isolation of total RNA from leaf samples was carried out according to the protocols of the R & A-BlueTM Total RNA Extraction Kit and was used as a template for cDNA synthesis. The making of cDNA from total RNA was carried out according to the protocol of One-Step Reverse Transcriptase PCR Premix Kit. Real Time-PCR was performed on cDNA from reverse transcription followed the procedures of Real MODTM Green Real-Time PCR Master Mix Kit. Data obtained from the real time-PCR results were analyzed using relative quantification method based on the critical point / Cycle Threshold (CP / CT). The results of gene expression analysis of DREB gene showed that the expression level of the gene was highest obtained at Deep Yellow local corn cultivar, and the lowest one was obtained at the Rubby Brown Cob cultivar. It can be concluded that the expression level of DREB gene of Deep Yellow local corn cultivar was highest than other local corn cultivars and Srikandi variety as a reference variety.

Keywords : expression, level, DREB gene, local corn cultivars, Kisar Island, Maluku
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