

Peningkatan Keragaman Genetik Tanaman melalui Keragaman Somaklonal

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Abstrak

Improvement of Plant Genetic Variability through Soma-clonal Variations. Sri Hutami, Ika Mariska, and Yati Supriati. High genetic variability's are important factors in the development of new crop varieties. In vitro techniques are applicable for development of crop variability that is not found in the gene pool. One of the in vitro techniques that can be used for this purpose is the somaclonal variation technique. Somaclonal variation may be derived from genetic variations in explants and genetic variations in tissue cultures. Variations in the explant may be obtained from cell mutations or polysomic mutations of a certain tissue. Genetic variations in tissue culture may be caused by ploidy of chromosomes (endomitosis fusion), changes of chromosom structures (crossings), as well as changes of genes and cytoplasm. Changes of genetic characters may be improved if anorganic compound was added into the medium. To improve the plant tolerances to biotic or abiotic factors, selection components may also be added to the medium. Research results showed that somaclonal variation in tissue culture can improve genetic variations in plants. The variation produced in tissue culture provide chances to develop new plant genotypes. Many selection components, such as Gamma-ray irradiation, Al contents and low pH, pure toxin or filtrate, polyethylene glycol (PEG), and plant growth regulators can be used to improve somaclonal variations in many plants to produce new genotypes.