Diversity analysis of mangosteen (garcinia mangostana l.) irradiated by gamma-ray based on morphological and anatomical characteristics

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Abstrak

Widiastuti A, Sobir, Suhartanto MR. 2010. Diversity analysis of mangosteen (Garcinia mangostana L.) irradiated by gammaray
based on morphological and anatomical characteristics. Nusantara Bioscience 2: 23-33. The aim of this research was to increase
genetic variability of mangosteen (Garcinia mangostana L.) irradiated by gamma rays dosage of 0 Gy, 20 Gy, 25 Gy, 30 Gy,35 Gy and
40 Gy. Plant materials used were seeds collected from Cegal Sub-village, Karacak Village, Leuwiliang Sub-district, Bogor District,
West Java. Data was generated from morphological and anatomical characteristics. The result indicated that increasing of gamma ray
dosage had inhibited ability of seed to growth, which needed longer time and decreased seed viability. Morphologically, it also
decreased plant heigh, stem diameter, leaf seizure, and amount of leaf. Anatomically, stomatal density had positive correlation with plant height by correlation was 90% and 74%. Gamma rays irradiation successfully increase morphological variability until 30%. Seed
creavage after irradiation increased variability and survival rate of mangosteen.