

ABSTRACT

Soybean is one of the most important food commodities in Indonesia after rice and corn because it has a high protein content. This study aims to determine the effect of EMS on morphological and agronomic diversity in M.1.1.3 strains. This research was conducted in Pulo Rungkom Village, Dewantara Subdistrict, North Aceh District and at the Agroecotechnology Laboratory. This research was conducted from July to October 2023. This study used the F test using SAS software. This research was conducted using a single-factor Randomized *complete* Group Design (RCBD) research method. The concentration of EMS tested was 4 treatments, namely 0% (D0 - control), 0.1% (D1), 0.2% (D2), 0.3% (D3) with 6 hours immersion time. The variables observed were morphological and agronomic changes. Agronomic changes included plant height, number of leaves, number of productive branches, age at flowering, age at harvest, number of pods per plant, 100 seed weight, dry seed weight per plant, dry seed weight per plot, ton/ha production, number and length of leaves and stomatal width. The results showed that the application of EMS (Ethyl Methane Sulfonate) mutagen affected agronomic parameters, namely variables in plant height, number of leaves, number of productive branches, flowering age, harvesting age, number of pods per plant, 100 seed weight per plant, seed weight per plant, seed weight per plot, and ton/h production. In addition, there were changes in morphological characteristics such as stem color, leaf shape, leaf size, full sterility plants, and undeveloped flowers in Line M.1.1.3. From this study it is concluded that the higher the concentration of EMS mutagen given, the more changes that occur and the growth is slower.

Keywords : Agronomic Diversity, ethyl Methane Sulfonate, galur M.1.1.3, mutation breeding, soybean