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GROWTH AND DEVELOPMENT OF SOYBEAN (*Glycine max* L.) TREATED WITH SODIUM AZIDE

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ABSTRACT

Soybean (*Glycine max* L.) is one of horticultural plants in Indonesia. The demand of soybean in Indonesia is about 2,2 million ton per year, however, the productivity of soybean is still relatively low. This research was aimed to induce mutation in soybean through an application of sodium azide. Soybean seed of "Argomulyo" variety was obtained from Reserach Station for Leguminosae and Tuberous plant in Malang. Seeds were soaked in sodium azide of 0 mM (control), 5 mM, 10 mM or 20 mM for 12 hours. The pH of sodium azide solution was adjusted to 3 by adding sulphuric acid. For each treatment 100 seeds (M1) were used . Seeds were washed under tap water , germinated and grown in a polybag containing soil and compost vertilizer (3 : 1, v/v). In each polybag 4 seeds were germinated. All plants were watered regularly every other day. Growth and development parameters observed were plant height, chlorophyll content, time to flowering, sillique number per plant, seed dry weight and total protein content. Data were analyzed by Analysis of Variant and followed by DMRT (Duncan's Multiple Range Test) at significant level of 5%. The results showed that sodium azide of 5 mM, 10 mM or 20 mM decreased the average of plant height 15 to 20% compared to control plants. Time to flowering, chlorophyll content, sillique number per plant, and seed dry weight were not affected by sodium azide. The average of total protein content in seeds of plant originated from seeds treated with sodium azide was 40% and this value is 5% higher compared to seeds of control plants. This seeds are potential to be further replanted and reselected for better characters.

Key words: soybean (*Glycine max* L.), sodium azide, chlorophyll contenyt, total protein

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