

Title	Physiological Maturity and Effect of Seed Priming on Germination Ability of Vegetable Soybean [<i>Glycine max</i> (L.) Merrill]
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ABSTRACT

Physiological maturity and effect of seed priming on seed quality of two vegetable soybean varieties (AGS 292 and No.75) were conducted in this study that aimed to observe physiological maturity, improvement of germination rate and uniformity of vegetable soybean and, to determine vegetable soybean seed production by means of seed technology. This experiment on physiological maturity was carried out at Maejo University (Samsai, Chiang Mai) for two types of environment: dry season and rainy season, of 2010. Pods and seeds from each variety were sampled at 5-day interval after flowering until harvesting time. Results showed that vegetable soybean seed varieties, AGS 292 and No.75, reached physiological maturity stage at 69 days and 71 days after planting in dry season, and at 68 days and 69 days after planting in rainy season, respectively. The seed priming experiment was conducted in a 4 x 4 factorial in CRD with 3 replications consisting of 4 polyethylene glycol (PEG) concentrations (0, 2.4, 4.7, and 6.5 g per 100 ml of distilled water) and 4 levels of soaking time duration (3, 6, 9 and 12 hours) on vegetable soybean var. AGS 292 and No.75. Results showed that vegetable soybean var. AGS 292 treated with PEG had significantly affected the germination percentage. However, in vegetable soybean var. No.75, there was no significant effect of priming treatments on germination percentage and seedling growth rate. The 12-hour soaking time for seeds in both varieties, proved deleterious. Seeds treated with longer soaking time duration were shown to increase electrical conductivity. However, lowest value of electrical conductivity was observed in seeds treated with PEG. Similar result was found in combined analysis of vegetable soybean var. AGS 292 and No.75.

Keywords: vegetable soybean, physiological maturity, seed priming, PEG