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Response of germination rate and seed moisture contents to storage temperature and frequency of seed banking on seed soybean (*Glycine max*) for storage period

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Abstract

The seeds of soybean (*Glycine max*) were treated with different storage temperature for this study. The seeds of 3 accessions of soybean varieties in aluminum foil pack were used as materials. Storage temperature applied were -18 °C and room temperature and seed banking (input after 3 days from output) frequencies were every 1, 6, and 12 month respectively for 9 years of storage period. As results seed banking frequency no affected to germination rate and seed moisture contents at -18 °C storage room for seeds of soybean after 9 years. Germination rate of soybean seeds was changed from 96.2 % to 95.6 % averagely after 9 years of freezing (-18 °C) storage period. There were no differences in decreasing rate by number of seed banking frequency in soybean seeds. On the other hand, at room temperature germination rate of soybean seeds was decreased from 96.2 % to 27.3 % after 9 years which was decreased sharply to 55 % of initial viability after 6 years. The average rate of annual decrease of germination rate in soybean seeds was 38 % of initial viability at room temperature. Initial moisture contents of soybean seeds were 7.3 % and changed to 7.1 % at -18 °C while it changed from 7.4 % to 7.0 % at room temperature after 9 years of storage period.

Keywords: seed, banking, germination, storage

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