

## ABSTRACT

Qulsum, Umi. 2011. **Effect of Storage Temperature and Long Seed Viability Of Green Beans (*Phaseolus radiatus* L).** Thesis Department of Biology, Faculty of Science and Technology, State Islamic University Malang Maulana Malik Ibrahim. Lecture 1: Dr. Eko Budi Minarno, M.Pd. Lecture 2: Dr.Munirul Abidin, M. Ag

**Keywords:** Temperature, Long Storage, Viability, Green Beans Seed

Greenbeans are one group of legumes that are important in Indonesia, because this plant has many uses in everyday life that is as a source of food high in protein vegetable. Things to consider in seed storage is the deterioration (deterioration of quality) seeds by a factor of temperature and storage time. Save room temperature plays a role in maintaining seed viability during storage, low temperature is better than high temperatures for seed storage. The lower the storage temperature decreased seed viability can be further reduced, while higher temperatures increase the rate of decline in seed viability. This study aimed to determine the effect of temperature and storage time on viability of seeds of greenbeans (*P. radiatus* L).

The research was conducted at the Laboratory of Plant Physiology Department of Biology Faculty of Science and Technology UIN Maulana Malik Ibrahim Malang in May-July 2011. This study is an experimental study using Randomized Design Group (RAK) factorial consisting of two factors with three replications. The first factor is the temperature of the seed storage  $-70^{\circ}\text{C}$ ,  $-5^{\circ}\text{C}$ ,  $3^{\circ}\text{C}$  and  $26^{\circ}\text{C}$ . While the second factor is the treatment of storage time 0 days, 30 days, 60 days and 90 days. Data obtained from this study were analyzed by analysis of variance, and to determine the best treatment tested the *Duncan Multiple Range Test* (DMRT) with a significance level of 5%.

The results of this study indicate that there are effects of temperature and storage time on viability of seeds of green beans (*P. radiatus* L). Save room temperature significantly affect viability of green beans seeds, green beans seeds which are stored in the store room temperature  $-70^{\circ}\text{C}$  still has the highest viability than seeds stored at room temperature higher, as indicated by the variable power of germination and vigor. Storage duration significantly affect viability of green beans seeds, green beans seeds are in store for the storage of 30 days has the highest viability than seeds stored diving 90 days, as indicated by the variable power of germination, vigor, long time to germinate and sprout. There is a significant interaction effect between temperature and storage time on viability green beans seeds, which in the show by the variable germination and vigor. Storage in the store room with temperature of  $-70^{\circ}\text{C}$  and  $-5^{\circ}\text{C}$  is more capable of maintaining seed viability during the storage period of 30 days compared to seeds stored at room temperature ( $26^{\circ}\text{C}$ ) and  $3^{\circ}\text{C}$ .