



## Effect of different storage temperatures on the germination behaviour of *Jatropha curcas* L. seeds

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### ABSTRACT

Seeds of *Jatropha curcas* L. were stored under three different temperatures viz., room temperatures (26.33 °C), 20°C and 10° C. Initially the data were recorded after 1 month of storage i.e. in February 2008 at different storage temperature thereafter; the germination and moisture content were recorded at 1, 3, 6, 9 and 12 months of storage duration. The temperature 10°C significantly influenced the germination percentage and other germination parameters of *Jatropha* seeds when germination test was carried out in 1<sup>st</sup> month which was followed by 20°C and room temperature, there after a steep decline in the germination percentage till the termination of the experiment after 12 months of storage under all temperatures.

**KEY WORDS :** *Jatropha* seeds, Storage temperature, Germination per cent, Germination speed, Germination energy, Moisture content

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### INTRODUCTION

*Jatropha curcas*, also known as the “Physic Nut” originated in the Caribbean. It’s a drought-resistant perennial, growing well in marginal soil. Easy to establish, grows relatively quickly and lives, producing seeds for 50 years. *Jatropha* plant produces seeds with an oil content of 35%.. Recently bio-diesel has gained higher importance in India. For a country reeling under the burden of a large oil import bill and spiralling oil prices, seventy per cent of petroleum used in India is imported, mostly, from the volatile Persian Gulf region at the cost of more than Rs. 1,00,000 crores. This has compelled us to explore alternatives and tap the traditional wisdom. Considering the seriousness of cost of petroleum products and the pollution caused by the use of these products, many developed countries particularly Germany, Australia have ventured in to the use of vegetable oils as a better alternative to diesel. Several other western countries have invested huge sums of money in research and development to promote the

use of bio diesel on a commercial scale. Fortunately, suitable initiatives have also been made by Indian government agencies, universities, research institutions and automobile industries (Anonymous, 2004), for finding out and promoting suitable bio diesel crop. Storage may be defined as the preservation of viable seeds from the time of collection until they are required for sowing. The main factors affecting on the choice are the seed characteristics of the species, the period for which it is to be stored and the cost. If more than one method is suitable to maintain viability for the required period, the simplest and cheapest will normally be chosen. Some form of container is necessary for most seed storage, to facilitate access to, and handling of, individual seed lots while keeping them separate, to make the best possible use of storage space, to provide protection against animal and insect pests and, for some seeds, to prevent passage of moisture and gases between the enclosed and the outside atmosphere.

### MATERIALS AND METHODS

The present investigation was under taken during the year 2008 -2009 at Department of Forestry and Biotechnology Laboratory, ASPEE College Horticulture and Forestry, Navsari Agriculture University, Navsari (Gujarat). The seeds used in the investigation were harvested from experimental Farm of Department of forestry ASPEE College of Horticulture and Forestry

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