

**EFFECT OF PACKING MATERIAL
ON QUALITY OF STORED SEED OF
DIFFERENT FOOD LEGUMES**

BY

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ABSTRACT

The experiment was carried out at the Eastern University, Vantharumoolai; located in the Eastern region; during the period of January 1992 to July 1992 to study the effect of packaging material on quality of stored seeds of food legumes and to find out the safe storage life of seed of these food legumes under different storage conditions. The experiment include sealed polyethylene (guage 100 mil) and cloth containers as packaging material, for the seeds of four food legumes blackgram cv. MI 1, cowpea cv. MI 35, greengram cv. MI 5 and soybean cv. Pb 1, stored for a period of six months under ambient conditions. Seed viability in terms of germination percentages and the seed vigour in terms emergence rate were determined at monthly intervals over the period of storage.

Viability and vigour of soybean packed in sealed polyethylene was 79% at the end of fourth month of storage, the acceptable level and at the sixth month it attained 40.6% which is well below the acceptable level, However, in the case of cloth container viability dropped to 69.9% at the end of fourth months of storage which is below the acceptable level.

Cowpea seed packed in both containers showed a significant loss in viability after fifth month of storage and the viability dropped to almost 30% after six months of storage, probably due to the damage caused by the storage

pest Callosobruchus maculatus. Seeds of blackgram and greengram stored in both containers maintained a high level of viability and vigour for six months, the study period in the experiment. They showed a germination of 83.3% and 89.6% in polyethylene and 85.3% and 90.3% in cloth containers in the field germination test. The gradual decline of seed vigour over the storage period also was evident and it coincided well with the decline in seed viability.

It was also observed that the storage seeds of all food legumes were infected with storage fungi namely Aspergillus spp. and bacteria Bacillus spp. The extent of infestation by these pathogenic microorganisms was estimated to be 68.3% in polyethylene and 64.9% in cloth containers at the end of the storage period.

The results suggest that the duration of successful storage varied with the crop cultivars, which may be attributed to the inherent characteristics of seeds. It was apparent that the packaging material used in this study have no significant influence on the quality of storing seeds. However, a higher fluctuation in moisture content of legume seed was observed when stored in cloth containers and virtually the loss in viability and vigour, determining the seed quality, was in concurrence with moisture fluctuation. No doubt that sealed polyethylene containers which minimize moisture fluctuation in stored seeds may be the appropriate container for storing seeds of legumes

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