

EFFECT OF PACKAGING MATERIAL ON THE VIABILITY
AND VIGOUR OF CHILLI (Capsicum annum L.)
SEED STORED IN SRI LANKA

By

SAM GAMINI RANJITH DE SILVA

Thesis

Submitted in partial fulfilment of the requirements

for the degree of

MASTER OF PHILOSOPHY

in the

POSTGRADUATE INSTITUTE OF AGRICULTURE

of the

UNIVERSITY OF PERADENIYA

SRI LANKA

July 1994.

456680/

C 633.84
D27.



456680

AGRICULTURE LIBRARY
UNIVERSITY OF PERADENIYA

ABSTRACT

Climatic adversities in the tropical and sub tropical regions necessitate the provision of facilities for safe storage of seeds. Particular emphasis is needed to prevent seed damage due to high temperature and relative humidity in the pre and post harvest environments. Chilli seeds deteriorate rapidly in the tropical climate of Sri Lanka and it is important to improve the storage environment by providing controlled conditions using moisture resistant packaging. This study was carried out to determine the factors influencing the storability of chilli seed. These were packaging material, storage condition and initial moisture content of the seed.

Extracted chilli seed of cultivar MI 2 of known germination (81.0%), were dried to 9.7%, 5.9%, and packed in three different packaging materials; aluminium foil, 500 gauge polythene and woven polypropylene sacks. The seeds were stored at ambient condition at Pelwehera, Rahangala and in a cold room at 20 C and 65% RH at Gannoruwa. Initial seed quality was tested. Seed germination, field emergence, seedling length and seed moisture content of the stored seed were tested at 3 months intervals during the 12 month study period. Chilli seed with low initial moisture content (5.9%) maintained its germinability better than seeds with high moisture content (9.7%) seed in all locations. Triple laminated aluminium foil was the best packaging material on the other two materials as far as the moisture barrier properties are concerned. Polysack packaging displayed free moisture

movement from early stages of the study in all locations. Polythene (500 gu) was better than polysack and similar to aluminum foil to store chilli seed for one year at Rahangala and in cold room. Cold room was the best to store chilli seed without losing its viability below 75% for a period of one year.

Considering all these facts, well dried extracted chilli seed packed in aluminium foil or in polythene (500 gu) and storing in a cold room (20 C, 65% RH) could be recommended for long term storage.

