CARE POINTS FOR SAFE SEED STORAGE

S.C. VIMAL AND H. P. SINGH

Department of Seed Science and Technology, N.D. University of Agriculture and Technology, Kumarganj, FAIZABAD(U.P.) INDIA

Quality seed is a critical input for the agricultural growth of a country. Healthy and viable seed is the foremost per-requisite for obtaining desirable plant stand thus laying the foundation for higher productivity. The purpose of safe seed storage is to maintain the seed in good physical and physiological conditions from the time they are harvested until the time they are sowned. During storage, various factors and insects, pests, mites and molds deteriorate the seed qualities. However, the process of deterioration and damage be minimized by taking proper care of the following aspects of seed storage.

Pre storage care:

– Seed crop should be harvested at full maturity and during dry weather.

– Trash should be removed by rough cleaning as this trash harbours the insects and fungi.

– Always store high quality seed.

– The moisture content of raw seed should be around 12 per cent or less. Since this varied crop to crop. This proper moisture content will minimize mechanical damage during seed processing.

– Always store the seed after required drying for instance at seed moisture around 9 *per cent*.

– The seed storage should be thoroughly repaired to make it moisture proof.

– Level the store surface properly before filling them with seeds. Problems of insect-pests coupled with moisture condensation created moulds in seed.

– After cleaning and repairing seed storage and its structures, recommended insecticides like Malathion 50 EC, 1 part in 100 parts of water should be sprayed outside and inside of store.

– Empty godowns infested with insects especially Khapra, should be fumigated with Aluminium phosphide tablets @ 7tablets (3gm each)/1000 cubic feet area.

– Chemicals, feeds, fertilizers etc. should not be stored along with the seeds.

During storage care:

– The seed bags should be stacked on wooden pallets after proper labeling of cultivars variety/crops.

– For proper inspection the ventilations at a distance of at least 30cm between the stacks and also the wall should be kept.

– There should be a gap of at least 60 cm between the top of the stack and the ceiling.

– The stack size should not exceed beyond 9m x 6m for proper management.

– The height of the stack should not be more then 3 meters to avoid seed damage due to weight and pressure.

– Ventilators should only be used the ambient relative humidity is low outside the seed store.

– Seed storage should be dry and cool to minimize the damage by insects and fungi.

– Seed moisture content below 9 per cent and storage temperature below 25^{0}C help in maintaining the seed quality.

– The seed should be checked regularly for germination, insect and mould damage etc.

The amount of moisture in the seeds is probably the most important factor influencing seed viability during storage. Over most of the moisture range, the rate of deterioration increases as the moisture content increases. The effects of moisture content on seed storability are

Table 1 : The effect of moisture content on seed storability

Seed moisture content (%)	Seed storability
11-13	½
10-12	One year
9-11	Two years
8-10	Four years
<4	Damage seeds or hard-seededness

sown in Table 1.

Fumigation of seeds:

If insect infestation occurs inspite of precautionary measures, fumigation of seed becomes necessary. Disinfest the store with Aluminium phosphide @ 1 tablet/metric ton or 7 tablets (3gm)/ 1000 cubic feet area. Never keep the tablets at the bottom of the floor of store as the gas is heavier and travels downwards. Since the gas can penetrate downwards also up to 8 feet, the tablets should be placed accordingly. Thus mix Malathion 5 per cent dust @ 250 gm/quintal by weight with grain meant for seed only.


Seed storage in corn and soybeans

Precautions:

– Fumigations are to be done cautiously.

– It should be ensured that fumigated structure is air tight.

– It must be borne in mind that fumigation, particularly repeated fumigation, may seriously reduce the seed vigour and even the germination capacity of seeds.

– Never use EDB (Ethyl Di Bromide) in seed storage as it adversely affects the seed viability under higher moisture levels and longer exposure periods.

– It is, therefore advisable to inspect the seed storage at 3 or 4 week intervals.

– During monsoon period, inspection should be done at an interval of 15 days.

– During the inspection, be alert to the presence of odours, caking and crushing, as these are the clear cut indicators of moisture and insect problems.