

Target Yield Concept

INSECT-PESTS OF STORE GRAINS

Crop	Preventive/Curative measures
Insect-pests of store grains	
<p>Stored grain insect-pests attack the stored grain products as a result of which the grains lose their nutritive value and germinating capacity. Important insect-pests of these grains are hapra beetle, lesser grain borer, rice weevil, red rust flour beetle and grain moth.</p>	<ol style="list-style-type: none"> 1. Store the grains in a clean godown 2. Fill cracks, crevices and holes with cement. 3. Use brand new gunny bags. Old gunny bags. Old gunny bags if used, must be disinfected by dipping in 1 part malathion (Cythion 50 EC) in 500 parts water for 10 minutes and dried in shade before filling the grains. 4. Disinfect empty godown in April-May by spraying 1 part malathion (Cythion 50 EC) in 100 parts water on floor, walls and ceiling or by using 25 tablets of Celphos/Phostoxin or 35 L EDCT mixture per 100 cu m (36000 ft.) 5. Mix 5% malathion (Cythion) dust @ 2.5 kg/metric tonne or 250 g/quintal grains meant for seed only. <p>Caution :</p> <ol style="list-style-type: none"> 1. Where there is infestation of khapra, fumigation of godown with Celphos Phostoxin is essential by using double the recommended doses. 2. Do not mix BHC with grains meant for consumption. 3. Fumigate only in air tight stores. Do not use them in houses.
Pulses	
Gram dhora, mung dhora	<ol style="list-style-type: none"> 1. Phostoxin, Delicia or Celphos @ one tablet of 3 g/metric tonne or 25 tablets/100 cu metre space. Exposure 7 days. 2. EDCT mixture (Kiloptera) 1 L for 20 quintals of grains or 35 L for 100 cubic metre space. Exposure 4 days. <p>Caution : The fumigants should be used only in airtight stores by especially trained persons because they are deadly poisonous.</p>
Non-insect pests and their control	
<p>Root-knot nematodes : Leaves of affected tomato, brinjal and bhindi plants become discoloured after the invasion of their roots by the larvae. Occasionally, leaves dry up and plant height is affected. On the roots, distinct galls or knots develop and in case of severe infestation, side roots develop profusely which gradually weaken the plants.</p>	<ol style="list-style-type: none"> 1. In case of nursery crops, apply Albicarb or Carbofuran @ 1 kg a.i./ha at the time of seed sowing/transplanting. 2. Crop rotation with non-host crops like maize and paddy should be practised. Growing of these vegetable crops on the same piece of land year after year helps higher population build up of this nematode and causes heavy damage to the crops. 3. Chemical application on large scale (under field conditions) is not normally recommended, as it is very costly. If necessary, the same doseages of nematicides as mentioned for nursery treatment should be applied under field conditions in nematode infested patches only.

	4. Grow resistant varieties if available.
Snails and slugs : Snails and slugs eat the emerging radicle and plumule. They also feed on the bran leaves of younger plants and cause severe damage.	Sprinkle Snailkill 5% granules in the field or bait containing metaldehyde 2.5% with moist or 900 g of metaldehyde in 31 kg of moist bran/ha. Best results are achieved when broadcasted on the soil during a moist warm evening a few days after a dry weather.
Field rats and house rats : They cause heavy losses and destroy the stored grain and other products by consuming, contaminating with their excreta, urine, hair and extraneous matter. They also spoil storage bags, clothes, etc.	1. Close all burrows in the evening and fumigate reopened burrows of field rats with Phostoxin or Celphos or Delicia using 1/2 part of 3 tablets/burrow in clay and sandy soils. 2. Bait with zinc phosphide : smear 19.5 kg wheat, gram, maize or bajara grains with sarson oil and mix with it 500 g zinc phosphide. Put one table spoon on these poisoned grains in or outside burrows.
Jackals and porcupines : They are generally active at night and damage sugarcane, maize, jowar, green vegetables, watermelon, sweet potato and plant nurseries.	Spot burrows of porcupines and fumigate with Celphos/Phostoxin tablets.
Birds : Some birds such as sparrows, parrots, crows, etc. are harmful to many grain crops, vegetables and fruits.	1. Scare them away by means of mechanical bird scarer. 2. Sparrows can be killed by feeding them soaked wheat grains containing 2% fenthion (Lebaycid 50 EC). 3. Crows can be killed by feeding them on chapatis soaked in water containing 2% fenthion (Lebaycid 50 EC). Caution :Soak 1 kg wheat grains in 1/2 L water containing 4-5 ml Lebaycid 50 EC for 6 hours. Dry under shade, These grains should be spread on cloth late in the evening so that sparrows may eat them early the morning. Pets, cattle and children should be kept away from bait.

NOTE : The quality of water recommended for different sprays in insect control is according to the conventional high volume sprayers that are in general use. If motorised knapsack sprayers is used, then the amount of water would be 40-125 L per hectare. However, the quantity of the insecticide would remain the same in both the cases.