Control
- Early and uniform planting of sorghum over large areas.
- Some midge resistant sorghum varieties/hybrids have been developed.
- If necessary can be done using Endosulfan, Ambush, Marshal or Karate.

Storage pests
Important storage pests in sorghum are weevils and warehouse moths.

i) Weevils (Maize weevil- *Sitophilus zeamais* and Rice weevil- *Sitophilus oryzae*)

Both adults and larvae feed on grain damaging it beyond use.

Figure 4. (a) Rice weevil (b) Angoumois grain moth - Larva and adult

Control
Cultural
- Early harvesting
- Proper drying
- Use of well ventilated and constructed storage structures.
- Clean and disinfect stores at least 6 weeks before harvest. Dust with storage insecticides e.g. Actellic Super, Malathion or pyrethrum dust.

Birds
Problem birds include quelea quelea, weavers and doves.

Control
- Early uniform planting of similar maturity groups in contiguous (cluster) farms.
- Use of affordable reflectors e.g. ribbons, aluminum foils, old cassette tapes.
- A network of strings stretched across loosely planted poles and supporting hanging cans with a few stones inside pulled occasionally to provide a noisy environment in the entire field.
- Timely harvesting
- Destroying roosting and breeding sites
- High tannin sorghum grain types are less damaged by birds.
Introduction
Sorghum is both a food and cash crop. It is an important crop for areas with low rainfall and low soil fertility. Research efforts have produced technologies that can be applied to increase the crop’s production and productivity. These technologies are affordable and easy to use by farmers and this flyer highlights some of them.

Seedbed preparation
Prepare seedbed to a fine tilth for better emergence and seedling development. If tractor ploughed, harrowing has to be done. In hand prepared seedbeds, break up big soil clods.

Seed Rate
Hand planting in rows and space planting (with little or no thinning) 7-8kg ha⁻¹. Machine planting, 8-10kg ha⁻¹.

Sowing
Dry plant just before rains or plant at the onset of rains, or when the rains are well established. Depth: Dry planting 5.0 – 6.0 cm; Wet planting 2.5 – 4 cm Methods: Drilling in furrows or Hill plantingospace planting (in holes) Spacing: Wetter areas: 60 x 20 cm (60 cm inter-row and 20cm intra-row) Drier areas: 75x20cm or 90 x 30 cm.

Fertilizer
To raise fertility levels, a wide range of fertilizers and manure are used.
Manure: Should be broadcasted in the field and ploughed in or spread in bands along the planting furrows and mixed with soil before sowing. Recommended rate; 5-10 ton ha⁻¹. Best if applied 1 month before sowing.

Inorganic fertilizers:
Basal application: Compound Fertilizer (DAP, 20:20:0, 23:23:0 etc) at rate of 20kg N per acre and 20kg P₂O₅ per acre, applied at planting time before placing in the seed.
Top dressing: 20kg N as straight fertilizer (Urea, CAN) applied beside the crop. Ensure there is adequate moisture to dissolve the fertilizer.

Weeding
Two weedings are necessary. First weeding should be done 2-3 weeks after seedling emergence. Pre and post-emergence chemical weed control can also be done using for example Lasso or Gesaprim (pre-emergence) and 2,4 D (post-emergence).

Drought and soils
Drought is a major constraint to rainfed sorghum and it can occur before or after flowering. This can be addressed through early planting and use of early maturing drought tolerant cultivars and water conservation.

Major insect pests
Foliage/Stem feeders:
Shoot fly (Antherigona soccata)
Damage normally occurs from 7 to 30 days after emergence. The larva feeds on the central leaf which causes deadheart symptom. Late sowing increases the likelihood of attack.

Stemborers (Chilo partellus)
This is the most important of the stem borers that affect sorghum. Symptoms appear as small windows in young whorl leaves. Larvae then bore into the stem. Young plants develop deadhearts.

Head/Panicle feeders
i) Sorghum midge (Contarina sorghicola)
Damage is caused by larvae feeding on the ovary, preventing normal grain development and resulting in a “blasted panicle”.

Figure 1. Adult shootfly and damaged seedling
Figure 2. Stem borer damage and larva