A grain *storage* planner

CSIRO Stored Grain Research Laboratory

GRDC Grains Research & Development Corporation

ACTIONS NEEDED TO ENSURE THAT YOUR GRAIN IS INSECT FREE AT THE TIME OF SALE OR USE

DON'T TREAT YOUR GRAIN JUST BEFORE SALE OR USE.

Grain that has been well stored, adequately inspected, and appropriately treated should be ready for immediate delivery.

If you find insects just before delivery, **DON'T**:

- Attempt rapid fumigation on the back of the truck. It will not work and is dangerous.
- "Bomb" the infestation with fumigant or pesticide in the storage. Again this will not work and is dangerous, and may seriously affect the market for your grain.

There are no universally recommended quick fixes if insects are found. The best course may be to tell the customer about the infestation. The customer may accept the insects and be able to deal with them. They may also recommend a treatment course, or offer a discounted price.

6 months after harvest

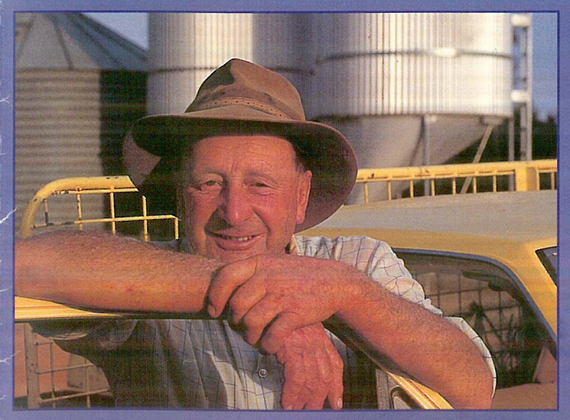
- Refumigate sealed bins.

Every 4 weeks after 12 weeks

- Repeat the 4 week inspection procedure.

Most grains at the correct moment of harvesting are as good as they will ever be. They should be:

- largely free of storage insects;
- free of active storage fungi;
- free of foreign material;
- free of chemical contamination; and



Some months before harvest

- Decide if on-farm storage will be the best option for the harvest.
- Consider how much storage is required.
- Inspect existing storage for physical condition and serious faults.
- Think about the most likely end use of the grain to be stored, as this will influence future storage requirements or treatment options.
- Consult as early as possible with potential suppliers, if more storage or modification of existing storage is required.
- Be prepared to tell the supplier or modifier of equipment what commodities are likely to be stored and handled—the amount, likely end use, plus any factors that might complicate storage requirements, e.g. malting barley, slightly wet sorghum, etc.

- at prime quality.

Planning is essential to ensure that postharvest procedures, handling equipment, and storage structures keep the grain as good as it is at harvest.

About 12 weeks after harvest

Any infestation introduced when the grain entered the storage should have become apparent by this time.

- Repeat the 4-week inspection procedure.

About 8 weeks after harvest

Infestation is unlikely but is more likely than at 4 weeks.

- Repeat the 4-week inspection procedure for all storages.

About 4 weeks after harvest

- In a sealed and fumigated storage do nothing.
- In an unsealed storage:
  - inspect the grain for surface water damage and obvious infestation. Inspect from outside the bin — **do not** get into it.
  - If the storage is a silo bin, run a small amount out the bottom. It should be dry, free running, and free of insects.
  - If aeration is installed, ensure that it is functioning correctly.

Within 3 weeks after harvest

- Start phosphine fumigation if this is the preferred treatment method and the facilities are adequate; i.e. sealed structure or SIROFLO® installation.
- Clean up all grain spillage.
- Remove grain residues from harvesting and handling equipment.
- Insert insect monitoring traps if these are used.

Your storage calender

Fill in the appropriate dates for your harvest:

Some months before harvest	_____
About 3 weeks before harvest	_____
Harvest	_____
Within 3 weeks of harvest	_____
About 4 weeks after harvest	_____
About 8 weeks after harvest	_____
About 12 weeks after harvest	_____
Every 4 weeks after 12 weeks	_____
	_____
	_____
	_____

At harvest

- Ensure commodity is dry enough for your storage set-up.
- If you have aeration, turn it on as soon as you have any grain in the bin.
- If possible, segregate early loads from the later ones, early loads might have picked up residual infestation as they passed through harvesting, handling, and storage equipment.
- If a grain protectant chemical is used it should be applied before the grain enters its final on-farm storage structure. Note: Use only materials suited to the end-use of the grain, if in doubt ask potential customers.

About 3 weeks before harvest

- Inspect existing storages for obvious water leaks.
- If possible, empty storages to be used for the coming harvest.
- Ensure that empty storages are free of all grain residues, dust, and other foreign matter.
- Check aeration fans and ducts.
- Check sealed silos for leakage, with special attention to rubber seals at the inloading and outloading hatches. Check pressure relief valve, and service if needed.
- Check, repair, and clean all harvesting, transport, handling, and temporary storage facilities. Pay special attention to the removal of grain residues.
- Fumigate or otherwise disinfest any grain carried over from previous harvests.
- Clean-up spilt grain and weeds around the storage site.
- Decide on a contingency plan if there is a risk of harvesting more grain than your storage capacity.
- Make a firmer assessment of the potential end-use of the grain, as this will affect treatment and storage options.
- Determine if the buyer has any requirements concerning treatment for insects and maintenance of quality.
- Decide what insect control strategy will be applied.