

# SOUTHERN AUSTRALIA

## FOCUS

COVERING CROPPING SYSTEMS OF SOUTHERN NSW, VICTORIA, TASMANIA, SOUTH AUSTRALIA & WESTERN AUSTRALIA

### THE RESEARCHER'S VIEW

## Keeping the marketing wheels on when storing grain

By Peter Botta, DPI Victoria

Increasingly, end-users are being asked questions by their markets about the safety and integrity of the grain products they buy. To ensure that they can do this, end-users are in turn looking to their suppliers to quality assure the product they buy.

Growers need to understand that the grain they store will eventually end up in some way in the food chain, either for milling purposes, malting or as a feed source for animals. Food safety is becoming more and more common place at the farm gate.

End-users want to know what grain has been treated with, how it has been stored, and that what they have paid for is what they are getting.

Currently the majority of milk factories require feed suppliers to supply a vendor declaration to dairy farmers, to give a level of confidence that any treatments used meet the label obligations. This is a minimum control, which will require more robust quality assurance in the future.

Bulk handlers are increasingly being asked questions by their markets regard-  
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Peter Botta.



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## &lt;i&gt;...ON-FARM GRAIN STORAGE

ing quality assurance, not only of their systems but back through the supply chain. This level of scrutiny will also be required of growers who choose to store and market their grain.

Storing and marketing grain requires skills beyond just growing grain and filling a silo. One of the operations overlooked when growers store and market their grain is the 'service factor'. Once grain is put in storage for marketing, growers enter a whole new area and become a part of the service industry. This is often the hardest part of marketing grain and is often where the wheels fall off.

Storing grain requires a set of skills to ensure a quality product can be delivered on request. Actually making the sale and delivering or outloading grain for an end-user requires different skills. Dealing with customers, late deliveries or pick ups, last minute changes and failures within the system can make or break a marketing enterprise. But as with many operations in farming there are affordable opportunities when things are done well.

**What can you do?**

To ensure you minimise the problems with on-farm storage and marketing, storages which are both easy to use and easy to control quality in, are essential. The following points should be considered:

- Always know your end-users' requirements;
- Ease of inloading and outloading;

## IN BRIEF...

The increase in on-farm grain storage on the eastern seaboard continues at a great rate. It is estimated that at least 25 per cent of stored grain can be stored on-farm. Harvest logistics, access to receival sites, increasing on-farm use of grain and marketing opportunities are changing the way grain is handled and stored.

Growers are also looking at how they can manage their price and delivery risk. Events of the 2007–08 season have highlighted the need to manage both.

The growth of intensive livestock industries offers growers opportunities to store and market their grain directly to end-users. While this gives growers the potential to maximise returns and manage their harvest, there are many things to consider to ensure market requirements can be met now and into the future.

- A site which is easy to keep clean;
- Ease of insect control;
- Correct application of any protectants/fumigants used;
- Know your length of storage or have a system which allows you to be flexible (such as, gas-tight and aerated); and,
- Keep good records to ensure regulatory and marketing requirements are met.

Insect and quality control is essential for successful grain storage and marketing. Good preparation and planning are essential to ensure grain hygiene, grain treatments and quality can be met and quality grain can be marketed to the end-user.

Ease of access, inspection and cleaning are features to look for in grain storage.

It is preferable to store grain in gas-tight sealed storage and fumigate using phosphine. If grain is treated with contact insecticides it is essential grain is not stored longer than the stated protection period and is stored in cool clean structures. Heat adversely affects chemical activity, lessening the period you expect a treatment to last for.

The main aim for a grain storage and marketing enterprise is to ensure quality is maintained during storage and done as efficiently and as easily as possible.

The best system to use is a gas-tight sealed system with aeration. Gas-tight storages are effective in killing insects, are easier to use and allow the grower to market their grain as chemical residue free when done correctly.

Aeration cools grain to maintain quality, and is essential for long term storage.

**Future risks to on-farm storage and marketing**

The biggest single risk for on-farm storage (and the wider storage industry) is dealing with insect resistance. Both contact insecticides and phosphine are under pressure from insect resistance. The contact protectants have resistance in one or more insect species, and the only knock-down treatment suitable for unsealed storages – dichlorvos – is less and less effective against the lesser grain borer.

This is particularly a concern if a grower only has unsealed storage, as they have no means to kill an infestation if it arises.

Of even greater concern is the rising occurrence of weak and strong resistance to phosphine. The bulk storage system relies almost 100 per cent on phosphine as a treatment, and the on-farm systems are using phosphine more and more. Resistance to phosphine is selected when it is used in unsealed storage.

This practice is one which is known not to work and yet is still done without considering the consequences.

As mentioned before, phosphine used in gas-tight sealed storage will kill all insect stages and enable the marketer to sell their grain as chemical-residue free.

**Dealing with insect resistance**

The challenge facing growers in grain storage is the few treatments registered for protecting or fumigating grain. The ability to use different chemical 'families' is not available.

Using an integrated pest management



**Harvest logistics, decreasing access to bulk storages and attractive marketing opportunities are changing the method and capacities of on-farm grain storage.**

strategy will help, but the availability of new or emerging products is nearly non-existent. The challenge is to ensure the longevity of the treatments we have – particularly phosphine.

The key to any successful grain storage – and to maximising marketing opportunities – is excellent grain hygiene. Limiting the number of insects to begin with and manipulating the storage environment so that insects don't like it, greatly assist in managing storage.

If using contact protectants, ensure they are used at correct label rates, application equipment is calibrated correctly and the storage is monitored regularly to detect any insect infestations.

If insects are infesting the grain before the protection period has elapsed then alarm bells should start to ring. It may be that the insects are resistant, or that the storage environment has affected the activity of the chemical. High moisture and high temperatures will reduce the efficacy of the chemical protectant, which is why storage fitted with aeration is far superior to storage without it.

It is not uncommon for grain to be stored at temperatures above 30°C, which will affect chemical activity and hence the expected protection period.

To use a fumigant successfully, a gas-tight sealed storage must be used. Fumigants work by having a particular concentration of gas for a specific time period. If these two parameters are not met then they will simply not control all stages of the insect lifecycle.

Gas-tight sealed storage must be gas-tight – nearly is not good enough. It is a bit like pregnancy, you either are or you are not pregnant, there is no in between.

Gas-tight sealed storages must meet the standard pressure test – if they fail this there is a leak which will mean you cannot expect the system to work. Gas-tight storage must be good quality and growers need to be sure that they buy quality storages which will maintain their gas-tightness under normal working and maintenance conditions.

Resistance to phosphine is increasing yearly and can be attributed to its use in unsealed storages and not being used at proper label rates and exposure periods.

With the resistance problems the contact protectants are facing, it is essential that growers have a proportion of their storage system as gas-tight to enable them to kill insects.

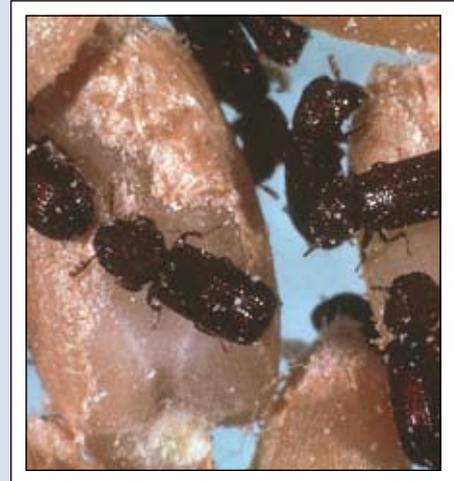
### What should you consider now?

In most cases it would be impractical to replace all storage with new sealed storage. Where storage is to be increased, good quality sealed storage should be purchased. Existing unsealed storage can be fitted with aeration.

Grain fumigated in sealed storage can be transferred to aerated storage, monitored and confidently stored until needed.

Careful planning, understanding your market's needs, and investing in good quality storage will allow growers to have a quality product. When growers can manage their on-farm system in this way, on-farm storage can be a valuable marketing tool.

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**The lesser grain borer is becoming increasingly difficult to control.**

## COMMENTS FROM THE INDUSTRY...

Grain growers in the Riverina region of New South Wales and the Victorian Mallee have taken matters into their own hands and significantly reduced their capital costs by forming local cooperatives which provide storage and handling services.

Tony Bellinger, chief executive for the Moulamein Grain Cooperative, said there was considerable demand for their services in response to limited capacity and segregations on offer in the regions, and due to more and more growers realising how storing grain could enhance their marketing flexibility.

"Growers in the Moulamein area were having to drive up to 100 km away to deliver their grain because the local receival site had limited capacity," Tony said. "In 2001, 26 of them got together and put up capital for their own site.

"Another group of growers joined them in 2003 to build a site at Burraboai for the same reason."

The cooperative now employs two full-time staff in addition to a casual workforce at harvest and provides a range of segregations depending on the requirements of each season. The Moulamein site boasts a capacity of 80,000 tonnes, while Burraboai has a capacity of 30,000 tonnes.

The cooperative has more recently expanded its operations into Victoria's Mallee region, partly due to reduced production in the Riverina resulting from a scarcity of irrigation water. Growers in Berriwillock formed their own cooperative, put up the capital to fund their own site last year, and contracted the Moulamein Grain Cooperative to operate it. The site has a capacity of 80,000 tonnes and has been in operation for 12 months.

Another cooperative has formed at Nandaly for the same purpose, and the growing operation is currently in negotiations with two other groups. It has developed storage and handling agreements with a range of grain buyers and end-users, and has been seeking interest from growers to further expand its operations.

In some ways it mirrors the beginnings of grain bulk handling in parts of Australia where groups of growers formed cooperatives to fund the development of the first storage and handling networks, which now dominate the landscape of grain growing regions.

### Back to the future

"In a way, we're reinventing the wheel and continuing what our grandfathers started," Tony said. "There has been a rise in demand for on-farm storage over the past five years, but it's a significant investment for an individual grower. This structure is a cost-effective alternative for growers, providing quality storage and handling services in a convenient location for a cost that is much lower for the individual.

"Any grower can deliver grain to our sites, but members of the cooperatives receive a discount for their investment. We provide a return on their investments, but we also take pride in being a service provider. Our operation is about farmers storing grain for farmers, and giving them more of a say in how it's done."

**For more information contact Tony on Ph: 03 5033 0734 Mob: 0427 331 881.**