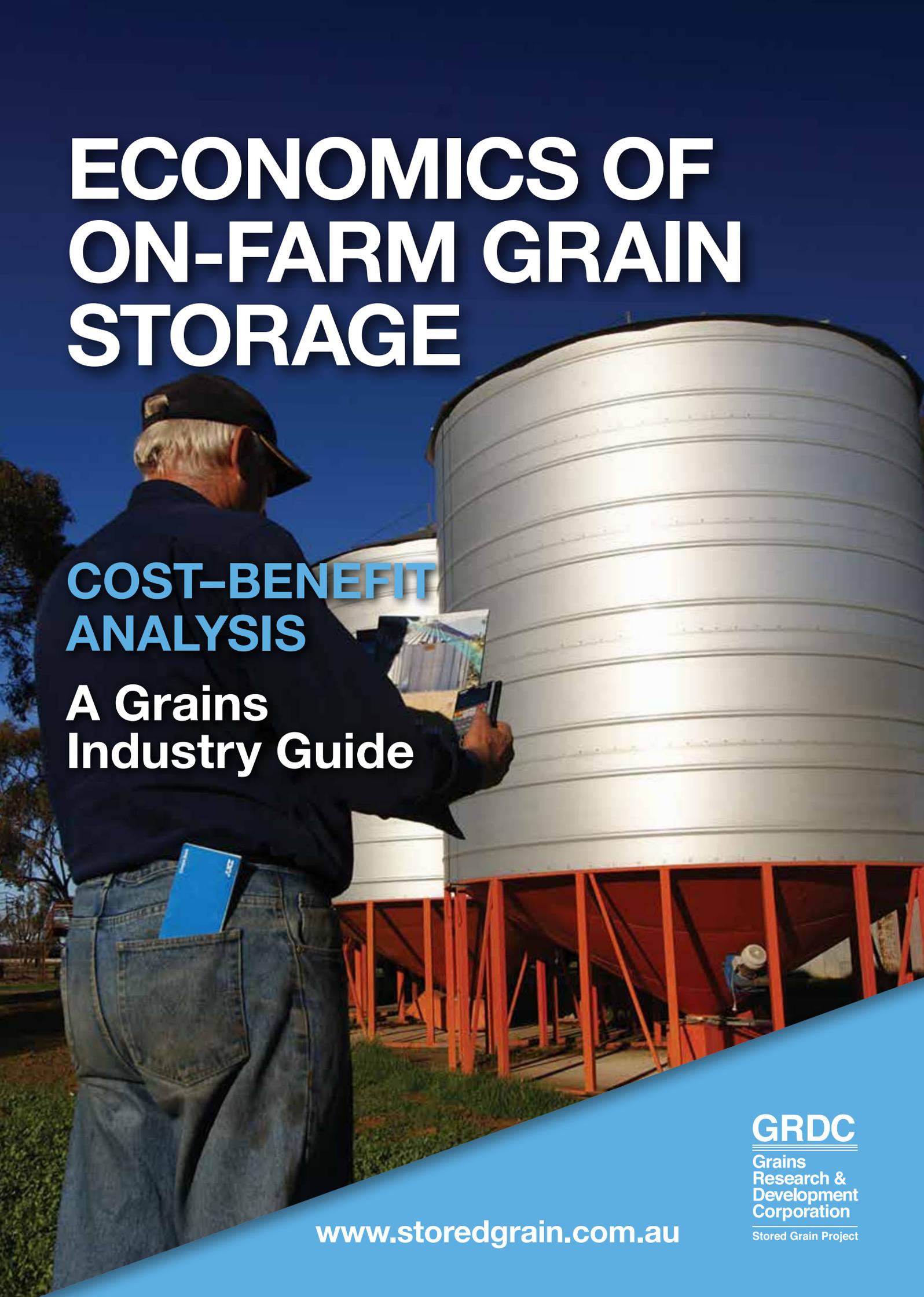


ECONOMICS OF ON-FARM GRAIN STORAGE

A man in a dark jacket and cap is standing in front of large, cylindrical grain silos. He is holding a tablet in his right hand and a brochure in his left. A blue folder is tucked into his back pocket. The silos are supported by a red metal frame. The background shows a clear blue sky and some trees.

**COST-BENEFIT
ANALYSIS**

**A Grains
Industry Guide**

www.storedgrain.com.au

GRDC
Grains
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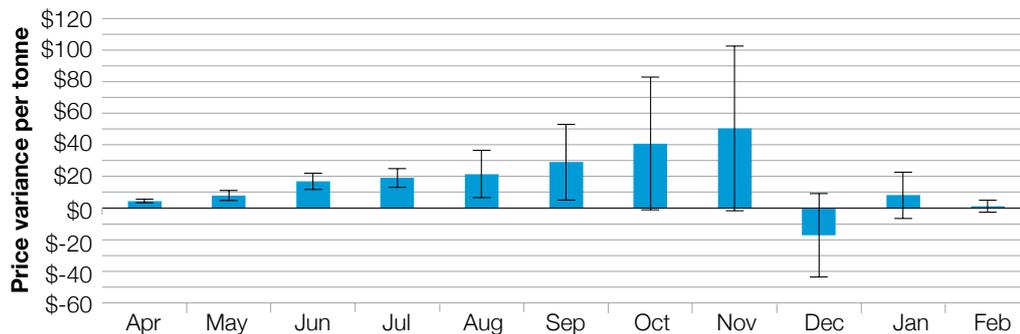
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SEASONAL PRICE VARIATIONS

Darling Downs sorghum seasonal price variation (19 year average)

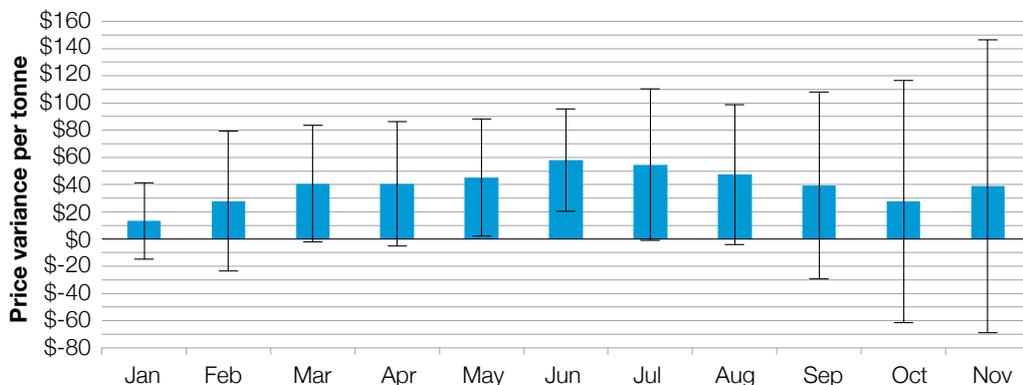
(Based on \$220/t at March, error bars to one standard deviation)



SOURCE: AG CONCEPTS UNLIMITED

ICE canola futures, seasonal price variation (9 year average)

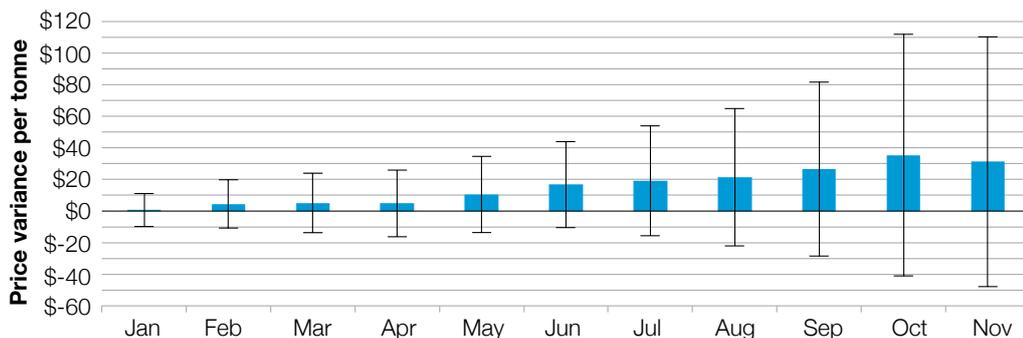
(Based on \$480/t at December, error bars to one standard deviation)



SOURCE: AG CONCEPTS UNLIMITED

Melbourne feed wheat seasonal price variation (19 year average)

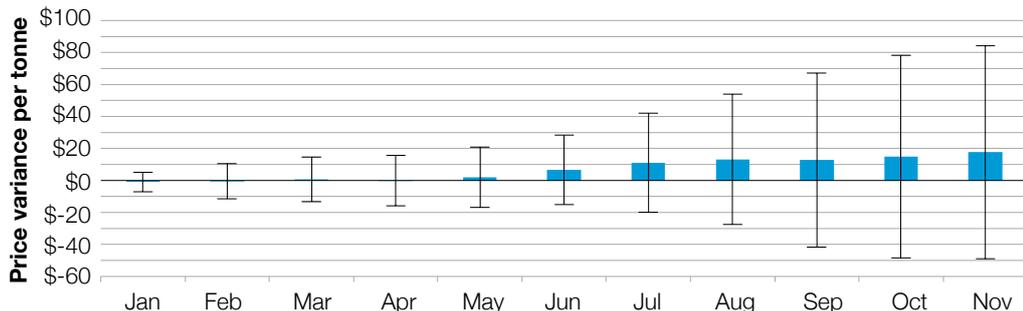
(Based on \$230/t at December, error bars to one standard deviation)



SOURCE: AG CONCEPTS UNLIMITED

Perth feed wheat seasonal price variation (19 year average)

(Based on \$230/t at December, error bars to one standard deviation)



SOURCE: AG CONCEPTS UNLIMITED, FOR EXPLANATION SEE PAGE 3.

INTRODUCTION

As growers continue to expand on-farm grain storage, the question of economic viability gains significance. There are many examples of growers investing in on-farm grain storage and paying for it in one or two years because they struck the market at the right time, but are these examples enough to justify greater expansion of on-farm grain storage?

To make a sound financial decision, we need to compare the expected returns from grain storage vs expected returns from other farm business investments, such as more land, a chaser bin, a wider boomspray, a second truck or paying off debt. Calculating the costs and benefits of on-farm storage will enable a return-on-investment (ROI) figure, which can be compared with other investment choices.

Using the template on page 6 a cost-benefit calculation can be done to compare different storage types or varying storage scenarios. For example, the four option columns could be used to compare silos to bunkers or compare varying combinations of planned benefits. More templates can be downloaded and printed by visiting www.storedgrain.com.au

The key to a useful cost-benefit analysis is identifying which financial benefits to plan for and costing an appropriate storage to suit that plan. To compare the benefits and costs in the same form, work everything out on a basis of dollars per tonne (\$/t). It is also helpful to reality check each figure as we go – ask ourselves if the number we're entering is realistic. Don't get caught up on figures that need to be estimated – we could debate all day on what the grain market is going to do. A more productive approach is to use averages based on medium-term to long-term trends.

IN SUMMARY

- ▶ Estimated benefits and appropriate costs
- ▶ Work on \$/t
- ▶ Reality check figures along the way
- ▶ Use averages of trends



PHOTO: CHRIS WARRICK, PROADVISE



PHOTO: CHRIS WARRICK, PROADVISE

Money in money out: A planned approach to grain storage greatly increases the chance of making money out of it, rather than hoping for the best and expecting it to be profitable.

FINANCIAL BENEFITS

NOTES

The examples used are not necessarily all related to the same situation.

When entering percentage figures into a calculator, first divide by 100. For example, enter 35% into the calculator as 0.35 and enter 8% as 0.08.

When doing calculations with multiple operations (for example x, ÷, +, - and brackets) follow 'BOMDAS' which is an acronym for Brackets of Multiplication, Division, Addition, Subtraction. This means calculate anything in brackets first, then do the calculation in order of multiplication then division then addition then subtraction. If unsure, follow an example to check you get the same answer.

The following colour-coded letters and text correspond to each of the coloured lines in the *Grain Storage Cost-Benefit Template* lift-out featured on pages 6 and 7.

A Harvest logistics

One financial benefit almost every grower can gain from through on-farm storage is harvest logistics or timeliness — aiming to reduce the amount of time the harvester is stopped because trucks can't keep up carting the grain away. If this is the case, ensure the planned grain storage has capacity for fast and efficient inloading during harvest.

Calculation: grain price x reduction in value after weather damage x probability of weather damage %.

Example: \$270/t x 30% x 20% = \$16.20/t

Market opportunity can provide a return for storing grain to sell after harvest. In the short term, storing on-farm might give us time to market the grain to the best receival site. Delving a little deeper into longer term marketing — are we aiming to capture a seasonal price trend for the commodity, or is there a specific, local market that will pay a premium for us to store grain?

B Seasonal market trend

Research done by Ag Concepts Unlimited shows there are some commodities with seasonal trends that demand a premium for selling after harvest. As an example, during the past 14 years, on average, the CME wheat futures price has peaked during September at a premium of 10 per cent above the December harvest price (see Figure 1 and other graphs on page one showing average price movements). If this is a benefit we're aiming for in our grain storage plan, we need to maintain grain quality for nine months and secure an out-of-season delivery point.

C Local market

If we are aiming for a local market, such as a feedlot or dairy, how long are we likely to need to store the grain and what premium is the local market likely to pay for storage? Whether we aim for a seasonal price trend or a local market trend, the benefit calculation is the same.

Calculation: post-harvest grain price - harvest grain price

Example: \$297/t - \$270/t = \$27/t

D Freight

In some regions, freight at harvest is charged at a premium due to high demand and long queues at receival sites. Holding grain on farm to cart after harvest can create a financial benefit by getting cheaper freight rates to the local receival site, or having time to cart directly to port and bypass local bulk handler charges.

Calculation to local site:

peak freight rate - post-harvest freight rate

Example to local site: \$20/t - \$15/t = \$5/t

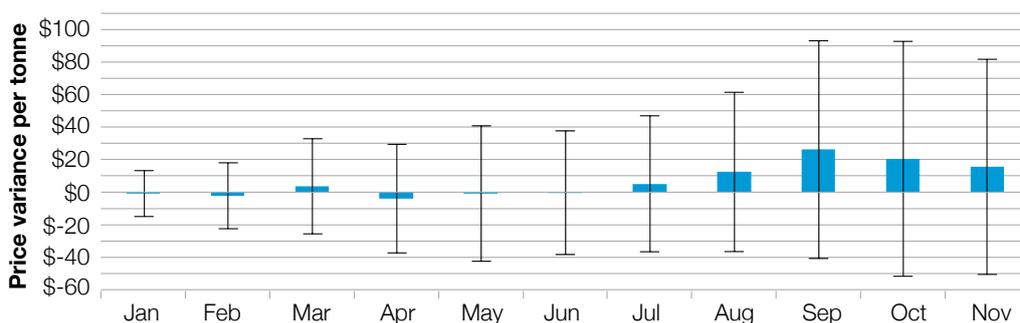
Or

Calculation to port: port price post harvest - freight farm to port post harvest - local receival price at harvest + freight farm to local site at harvest

Example to port: \$300/t - \$30/t - \$270/t + \$20/t = \$20/t

FIGURE 1 CME wheat futures, seasonal price variation (14 year average)

(Based on \$270/t at December, error bars to one standard deviation)



SOURCE: AG CONCEPTS UNLIMITED



PHOTO: PHILIP BURRILL, DAFF QLD

E Cleaning

Growers with access to a grain cleaner may be able to achieve a benefit from cleaning grain to meet the criteria of a higher grade. In most cases, this involves storing grain on farm to clean after harvest, or on a wet day, when the pressure is off. The calculation requires a cleaning cost, which can be based on a contract rate or by totalling the cost of owning and running a cleaner. The following example demonstrates one way to calculate the cost of using our own cleaner.

Calculation of cleaner cost:

(depreciation + opportunity cost of capital + repairs and maintenance) ÷ average throughput tonnes per year + fuel + labour.

Example of own cleaner costs:

$(\$500 + \$700 + \$200) \div 200t + \$0.15 + \$1.50 = \$8.65/t$

Calculation of cleaning benefit: clean grain price – original grain price – cleaning costs - shrinkage

Example of cleaning benefit:

$\$270/t - \$240/t - \$8.65/t - (\$240/t \times 5\%) = \$9.35/t$

F Blending

In some cases, grain of varying qualities can be blended to lift the overall grade. This can provide a financial benefit if a small portion of higher-grade grain can be blended to lift the larger portion of lower-grade grain and the price difference for the grade is significant.

Calculation: blended price - ((low grade price x % of mix) + (high grade price x % of mix))

Example:

$\$270/t - ((\$240/t \times 70\%) + (300 \times 30\%)) = \$12/t$



On air: Purpose built silos for aeration drying can provide a financial benefit by extending the harvest window.

G Drying

Where grain drying facilities are available grain can be harvested earlier in the season or harvesting can start earlier each day and extend later each evening. This can potentially lead to a financial benefit if more grain can be harvested and stored to reduce the amount lost from a weather event during harvest. Practically there is a limit to the volume of grain that can be harvested early or at higher moisture content so the benefit may only be applicable to a portion of the storage facility's total capacity. If using drying for early harvest in our calculation, remember to include the cost of drying the grain and include aeration cooling and drying in the capital cost.

The probability part of the calculation refers to how often a weather event damages grain. For example if rain damages ripe crops on average twice every 10 years then the probability is 20%.

Calculation: grain price x reduction in value after weather damage x probability of damage.

Example: $\$270 \times 30\% \times 20\% = \$24.30/t$

H Other benefits

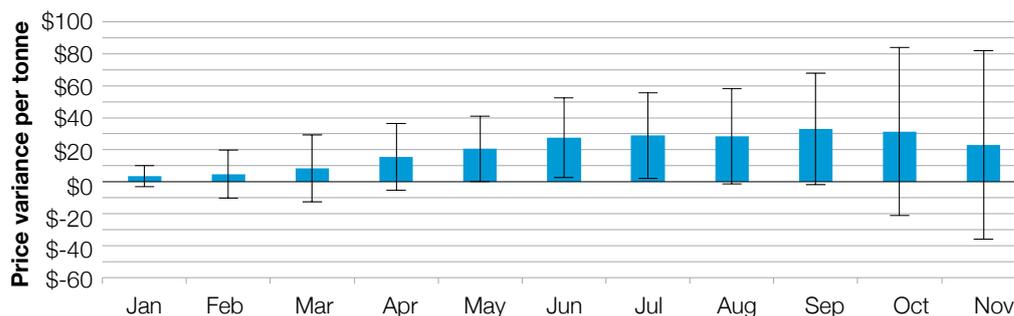
In addition to the benefits already covered, there may be location-specific benefits or opportunities to value add to grain after storing it on farm. One example of limited quantity would be stored planting seed, the benefit being the difference in the price to buy in seed less the price grain could be sold for at harvest, less cleaning and treatment costs. Calculate any other benefits in the same way; on a dollar-per-tonne basis and remember to account for any associated fixed or variable costs.

I Total benefits

In many cases, we need to aim for more than one benefit to make storage pay. For example, relying on seasonal market trends alone in many cases won't cover the costs of storage, but when combined with avoiding peak freight rates it might be feasible. At the same time, it would be unrealistic to expect to get all the possible benefits in any one year. Select the most locally relevant and reliable benefits for your operation and add them up to get the total benefit in dollars per tonne.

Darling Downs feed wheat seasonal price variation (19 year average)

(Based on \$230/t at December, error bars to one standard deviation)



SOURCE: AG CONCEPTS UNLIMITED

GRAIN STORAGE COST-BENEFIT TEMPLATE

Pull-out section

5

ECONOMICS OF ON-FARM GRAIN STORAGE
A Grains Industry Guide



GRAIN STORAGE COST–BENEFIT TEMPLATE

Financial gains from storage

A	Harvest logistics/timeliness	Grain price x reduction in value after damage % x probability of damage %
B	Seasonal trends in market	Post harvest grain price – harvest grain price
C	Local market gain (feed to feedlot)	Post harvest grain price – harvest grain price
D	Freight (peak vs out-of-season rate)	Peak rate \$/t – post harvest rate \$/t
E	Cleaning to improve the grade	Clean grain price – original grain price – cleaning costs – shrinkage
F	Blending to lift average grade	Blended price – ((low grade price x %mix) + (high grade price x %mix))
G	Drying for early harvest	Grain price x reduction in value after damage % x probability of damage %
H	Other benefits	
I	Total benefits	Sum of benefits

J	Capital cost	Infrastructure cost ÷ storage capacity
----------	--------------	--

Fixed costs

K	Annualised depreciation cost	Capital cost \$/t ÷ expected life of storage eg 25yrs
L	Opportunity cost on capital	Capital cost \$/t x opportunity or interest rate eg 8% ÷ 2
M	Total fixed costs	Sum of fixed costs

Variable costs

N	Storage hygiene	(Labour rate \$/hr x time to clean hrs ÷ storage capacity) + structural treatment
O	Aeration cooling	Indicatively 23c for the first 8 days then 18c per month /t
P	Repairs and maintenance	Estimate eg. capital cost \$/t x 1%
Q	Inload/outload time and fuel	Labour rate \$/hr ÷ 60 minutes ÷ auger rate t/m x 3
R	Time to monitor and manage	Labour rate \$/hr x total time to manage hrs ÷ storage capacity
S	Opportunity cost of stored grain	Grain price x opportunity or interest rate eg 8% ÷ 12 months x No. months stored
T	Insect treatment cost	Treatment cost \$/t x No. of treatments
U	Cost of bags or bunker tarp	Price of bag ÷ bag capacity tonne
V	Shrinkage (spilt/lost grain)	Grain price \$/t x percentage lost eg 0.2%
W	Drying costs (optional)	Total drying costs ÷ total tonne dried
X	Total variable costs	Sum of variable costs

Y	Total cost of storage	Total fixed costs + total variable costs
----------	------------------------------	--

Z	Profit/Loss on storage	Total benefits - total costs of storage
----------	-------------------------------	---

	Return on investment	Profit or loss ÷ capital cost x 100
--	-----------------------------	-------------------------------------

	Payback period years	Capital cost ÷ profit or loss on storage
--	-----------------------------	--



PHOTO: ALAN MORROW



Matching storage to commodity: Storing oilseeds or pulses requires a higher level of storage management to maintain quality.





FIXED COSTS OF ON-FARM STORAGE

The costs of grain storage can be allocated into two groups – fixed costs and variable costs.

Let's start with fixed costs. These are the costs that don't vary from year to year and are the same whether the storage is used or not.

There are vast variances in fixed costs between different types of on-farm grain storage, from bunkers at about \$5-10/t to segregated cone-bottom silos at about \$15-25/t. It is important to match the storage type to the storage plan. For example, if planning to hold grain for several months to capture a market trend, we need to be able to control insects and maintain grain quality during that period. If phosphine or another fumigant is part of our insect control strategy, then we need gas-tight sealable storage.

J Capital cost

To determine the fixed costs of storage, first calculate the capital cost, that is all the infrastructure, site works, concrete, equipment and labour to set up the storage. Dividing the capital costs by the storage capacity will give a capital cost per tonne. In the case of grain bags and bunkers, the capital costs are significantly less as they consist of the inloading and outloading machines, permanent site works and any other associated equipment required. Always match the storage type with the storage plan.

For storages that can be used multiple times per year, such as silos used for winter and summer crops, or filled twice a season to aid harvest logistics, the fixed costs per tonne could potentially be halved because the cost is spread over twice the volume of grain each year.

Calculation: infrastructure costs ÷ storage capacity

Example for silos: (silos \$110,000 + ground works and concrete \$10,000 + aeration controller installed \$10,000 + auger \$25,000) ÷ storage capacity 1000t = \$155/t

Example for grain bags: (inloading machine \$20,000 + outloading machine \$25,000 + permanent site preparation \$1000) ÷ storage capacity 1000t = \$46/t

The most significant fixed costs for grain bags are the inloading and outloading machines, so the more grain they are used to store each year, the lower the fixed costs

on a per tonne basis. If we don't have a lot of grain to store in bags, we can reduce the capital cost by owning half the machinery in partnership with a neighbour, or hiring the machinery so it becomes a variable cost.

K Depreciation

When the capital costs have been established, the first fixed cost can be determined. Annualised depreciation is the capital cost spread across the expected life of the storage. The expected life of a storage is the period of time during which it will function reliably without needing major repairs. For gas-tight silos the estimate is 25 years, for machinery it would be less and will depend on the usage.

Calculation: capital cost ÷ expected life of the storage

Example for silos: \$155/t ÷ 25 years = \$6.20/t

Example for grain bags: \$46/t ÷ 15 years = \$3.07/t

L Opportunity cost on capital

Opportunity cost on capital is an allowance for what the capital could be earning or saving if it was used elsewhere. If an alternative use of the funds is to invest in the share market you might use 10-15%, but if the alternative is to pay off debt then we might use the finance interest rate. We then divide the opportunity cost by two to account for the fact that the storage will hopefully be paid off over time so the interest payable will also reduce over time. It is important to remember to use the same opportunity cost rate and method between the various investments we compare.

Calculation: capital cost x opportunity cost or interest rate ÷ 2

Example for silos: \$155/t x 8% ÷ 2 = \$6.20/t

Example for grain bags: \$46/t x 8% ÷ 2 = \$1.84/t

M Total fixed costs

The annualised depreciation and the opportunity cost of capital added together give the total fixed costs of storage. This is the cost of on-farm storage every year before it is even used. It is the cost of the privilege of having storage on site whether it's used or not.



Cost categories: Bunkers may have lower fixed costs than other storage options but often have higher variable costs and limited flexibility.

VARIABLE COSTS OF ON-FARM STORAGE

The remaining costs of on-farm storage are grouped as variable costs — those that vary by the amount of grain stored each year and some by how long grain is held in storage. Some of these costs vary according to the type of storage used, while others will be the same for any storage type. For example, inload and outload time as well as shrinkage will be different for a cone-bottom silo compared with a bunker that requires tarps and a front-end loader. Time to monitor and manage will be different for a silo compared with grain bags that require more frequent checking and patching.

Always be realistic with calculations. If we're planning to store grain in bags for a few months and deliver the same quality grain, we must account for enough time to check and repair the bags at least weekly. The opportunity cost of stored grain on the other hand will be the same for any storage type if the grain is held for the same length of time.

N Hygiene

Storage hygiene is a minor cost relative to other costs. However it is worth calculating to highlight how little extra it costs for such a significant benefit in having a pest-free storage to start with and not having grain laying around that will attract pests to the site.

Calculation: (labour rate x time to clean ÷ storage capacity) + structural treatment cost

Example: (\$30/hr x 5 hrs ÷ 1,000t) + \$0.08/t = \$0.23/t

O Aeration cooling

Aeration cooling is another variable cost that is trivial in the economic outcome of storing grain, but has a significant effect on grain quality and insect activity. This calculation highlights how little it costs for a substantial benefit. Indicatively, aeration cooling fans delivering 2–3 litres per second per tonne will cost about \$0.23/t for the first eight days in storage while the grain temperature is reduced, then \$0.18/t per month to maintain a cool grain temperature. This is based on an automatic aeration controller running the fans continuously for the first three days, then 12 hours per day for five days, then 100 hours per month for maintenance. An example calculation is shown below, but the indicative cost of \$0.23/t plus \$0.18/t/month is accurate enough for most scenarios.

Calculation: fan motor size x electricity cost ÷ storage capacity x run time

Example: 0.37kw x \$0.23/kw/h ÷ 50t x (72hrs + 60hrs + (100hrs/month x 4 months)) = \$0.91/t

P Repairs and maintenance

Repairs and maintenance vary with each storage type. **Grain bags** require machinery maintenance to the inloading and outloading machines, **silos** require maintenance to seals to ensure they remain gas-tight sealable, **bunkers** require repairs to tarps and walls and **augers** take a small amount of upkeep to increase their working life. If we have existing storage we can check financial records to find repairs and maintenance costs on average each year, otherwise we can use a percentage of capital cost to estimate an allowance. As with hygiene, maintenance is a relatively small cost with significant benefits, enabling smooth operation and maintaining grain quality.

Calculation: capital cost x 1%

Example: \$151/t x 1% = \$1.51/t

Q Inload and outloading

Inload and outload time accounts for the labour required to fill and empty the storage. There is a tendency for farmer owners to overlook the cost time, but it needs to be accounted for because it is time that could be used to earn money doing something else. As a minimum, use a labour rate we would have to pay a worker to do the job at that time of the year. If we know how long it takes to fill and empty the storage then we can simply divide that time by the storage capacity and multiply it by the labour rate. The calculation below is one way to estimate the time and associated cost, accounting for time to line up the auger and truck and the small amount of fuel to run the auger.

Calculation: labour rate ÷ 60 minutes ÷ auger rate x 3

Example: \$35/hr ÷ 60 minutes ÷ 2t/min x 3 = \$0.88/t



PHOTO: CHRIS WARRICK, PROADVISE

Insect control: If the plan is to store grain for longer than a couple of months, an insect control option will be required at some stage.



PHOTO: ALAN MORCOM



PHOTO: BEN WHITE, KONDINI GROUP

Small cost, big benefit: Hygiene and structural treatments are a very small cost but have considerable benefits in deterring pests.

R Monitoring and management

The time to monitor and manage grain in storage varies with the type of storage and length of time grain is stored. Grain in silos requires fortnightly monitoring during the warmer months and monthly monitoring during the cooler seasons to ensure issues are dealt with quickly to keep damage to a minimum. Grain stored in bags or bunkers needs to be monitored more frequently. There is a higher risk of holes forming and exposing grain to water, leading to mould growth and insect infestation. Monitoring is another relatively small cost, but has potentially disastrous consequences if not done regularly.

Calculation: labour rate x total time to manage ÷ storage capacity

Example: \$30/hr x 2hr per month x 4 months ÷ 1000t = \$0.24/t

S Opportunity cost of stored grain

The opportunity cost of stored grain is an allowance for what the value of the grain could be earning or saving if it was used elsewhere. Like the opportunity cost of capital, the rate could be based on an alternative investment or the debt finance rate during the same period grain is stored. For example, if the grain was sold at harvest the funds could be used to pay off debt rather than waiting for the grain payment some months after it has been stored. The rate used needs to be consistent for the opportunity cost of capital and the opportunity cost of the stored grain as well as the rate used for comparing grain storage with other farm investment options.

Calculation: grain price at harvest x opportunity cost or interest rate ÷ 12 months to get a monthly rate x number of months grain is stored.

Example: \$270/t x 8% ÷ 12months x 4 months = \$7.20/t

T Insect treatment

While strict hygiene and aeration cooling can reduce the need for insect pest treatments, it would be optimistic budgeting not to include a treatment cost for grain stored longer than a couple of months. The treatment cost will vary according to the length of time grain is stored and the product that can be used in each type of storage. If budgeting on using phosphine then a gas-tight silo is required for reliable fumigation that prevents resistant pest species.

Calculation: treatment cost x number of treatments

Example: \$0.35 x 1 treatment = \$0.35/t

U Bags and bunker tarps

The cost of grain bags is a simple calculation as they are a single-use item with a known storage capacity. Bunker tarps may require some estimation to account for tarps that can be used more than once.

Calculation: price of bag ÷ bag capacity

Example for bags: \$800 ÷ 200t = \$4/t

Example for bunker tarps:

\$4500 ÷ 1000t ÷ 3 uses = \$1.50/t

V Shrinkage

Shrinkage is an allowance for grain spilt or lost during storage. The amount lost depends entirely on the type of storage infrastructure and care taken by the operator. For example, bunkers have more losses than cone bottom silos.

Calculation: grain price x percentage lost

Example: \$270/t x 0.2% = \$0.54/t

W Drying

If one of the aims of on-farm storage is drying for early harvest then a drying cost needs to be accounted for. There will be several ways to calculate drying cost depending on the drying method, the amount of moisture being removed from the grain and the ambient conditions at the time. In-storage aeration drying requires airflow rates of at least 15–25l/s/t, usually delivered by large fans with 7.5kw, three-phase electric motors. Ambient relative humidity and fan airflow will vary the fan hours required, so the cost of aeration drying will vary, but an example has been provided below.

Calculation for contract dryer: total drying cost or hire cost ÷ total tonnes dried = cost \$/t

Example for contract dryer:

\$20,000 ÷ 1000t = \$20/t

Calculation for batch dryer: ((annual depreciation and repairs and maintenance + opportunity cost of capital) ÷ annual tonne throughput) + ((fuel cost/hr + labour rate/hr) ÷ throughput t/hr)

Example batch dryer:

Step one: ((((\$110,000 x 7%) + (\$110,000 x 8%)) ÷ 1000t/yr) + ((\$95/hr + \$30/hr) ÷ 20t/hr)

Step two:

(((\$7700 + \$8800) ÷ 1000t/yr) + (\$125/hr ÷ 20t/hr)

Step three: (\$16,500 ÷ 1000t/yr) + \$6.25/t

Step four: \$16.50/t + \$6.25/t = \$22.75/t

Calculation for aeration drying: ((fan motor size x electricity cost x run time) + (labour rate x time to manage drying process)) ÷ storage capacity

Example for aeration drying:

((7.5kw x \$0.23/kwh x 238hrs) + (\$30/hr x 15hrs)) ÷ 50t = \$17.21/t

X Total variable costs

Adding up all the variable costs determines the cost of storing each tonne of grain on farm. If the storage already exists, then knowing the variable costs can help with the decision at harvest time whether to store on-farm or deliver straight to the bulk handler. Any positive difference between the benefits and the variable costs essentially goes towards paying the fixed costs which we spent when the storage was purchased.

Y Total cost of storage

Adding the fixed costs and variable costs together gives the total cost of the on-farm storage facility. This reveals how much we would have to make by storing grain to cover all the associated costs of on-farm storage.

Z Profit or loss on storage

The budgeted gain or loss of storing grain on farm can be determined by subtracting the total costs from the total benefits. A positive figure is profit, a negative figure means storing grain on farm is likely to cost money rather than make money. This profit/loss figure can also be used to compare on-farm storage with the benefits vs costs of marketing options such as warehousing.



PHOTO: TIM SATT



THE ANALYSIS

Return on investment

Providing storage is profitable, the margin (\$/t) divided by the capital cost of the storage (\$/t) multiplied by 100 is the percentage return on investment. A return on investment is simply the return or income as a percentage of the capital invested so is a practical way to compare like with like. This figure can be used to compare grain storage to other investment options.

Calculation:

profit on storage ÷ capital cost of storage x 100

Example: \$14/t ÷ \$155/t x 100 = 9% ROI

Payback period

An alternative to using return on investment is to calculate the payback period. That is, assuming we achieve the budgeted figures, how many years will it take for the storage to pay for itself.

Calculation: capital cost ÷ profit on storage

Example: \$155/t ÷ \$14/t = 11 years

If the calculation doesn't produce the answer we you were expecting, we can try following this checklist:

- 1 Do a reality check on the assumptions/ estimates used.
- 2 Check each of the benefits and costs have been calculated correctly making sure they yield a benefit or cost **per tonne**.
- 3 Check the costs and benefits have been totalled then subtracted correctly.
- 4 Check the return on investment calculation has been done following the example provided.
- 5 Ensure we are looking at the investment objectively, putting aside preconceived expectations (and pride if the investment has already been made).
- 6 Try varying the cost and/or benefits to see what effect they have on the outcome. A useful one to start with is the length of time in storage, which affects the opportunity cost of grain in storage. Remember to alter the benefits in line with the time held in storage.
- 7 Do the calculation on a different storage type for a comparison.
- 8 Contact someone for assistance. (Chris Warrick, ProAdvice cwarrick@proadvice.com.au)



Summing up: Considering grain storage is usually a 25 plus year investment, taking a few minutes to do the numbers is time well spent.

The big decision

While it's difficult to put an exact dollar value on each of the potential benefits and costs, a calculated estimate will determine if it's worth more thorough investigation. If we compare the investment of on-farm grain storage to other investments and the result is similar, then we can revisit the numbers and work on increasing their accuracy. If the return is not even in the ball park, we've potentially avoided a costly mistake. On the contrary, if the return is favourable, we can proceed with the investment confidently.

Evidently the financial implications are not the only factor to consider in deciding between investment options. Labour availability, knowledge and area of interest will also play a part in the success or otherwise of the storage. If the figures do add up to be the best financial investment option, the ultimate test is to consider if on-farm storage is going to get the business closer to achieving its strategic goals.

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USEFUL RESOURCES

GRDC Grain storage extension project

www.storedgrain.com.au

Excel cost-benefit template

Grain Trade Australia

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