GRDC ON FARM GRAIN STORAGE BENEFITS

Analysis of the Southern region

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Executive Summary

Onfarm grain storage has become an increasingly prominent feature of grain production systems across the Southern region of Australia. Structural changes in supply chains, increased seasonal variability, and growing pressure on harvest execution have all contributed to renewed interest in storage as a means of improving business outcomes. In many cases, storage decisions are justified primarily on the belief that grain prices tend to rise postharvest. While intuitive, this logic does not fully capture the commercial, operational, and risk based realities that influence storage outcomes in practice.

This report forms part of the GRDC Stored Grain Project and examines when, why, and under what conditions onfarm storage creates value in the Southern region. Rather than presenting storage as a uniform investment decision, the analysis positions storage as a decision tool that alters marketing, logistics, and quality management choices available to growers. The objective is not to determine whether storage is inherently "good" or "bad", but to clarify why outcomes differ between businesses and seasons, and why price only rules often fail.

The analysis combines two complementary approaches. A historical grain pricing analysis tests the reliability of postharvest price timing for key Southern region commodities, net of holding and carry considerations. This is supported by a series of grower case studies that provide real world context, highlighting operational, logistical, and quality factors that are not visible in price series alone.

The pricing analysis demonstrates that flat price movement between harvest and post-harvest periods is highly variable and inconsistent. While some seasons deliver price gains, others expose growers to material downside risk, with the range of outcomes overwhelming any average uplift. Median prices do not increase reliably with longer holding periods, and outcomes are often driven by rare global or seasonal events rather than the passage of time itself. As a result, price timing alone provides a weak and unstable justification for on-farm storage in the Southern region.

In contrast, the case study evidence shows that storage value is more commonly realised through grade spreads, logistics flexibility, and quality management. Storage enables growers to avoid forced selling into wide grade discounts, manage downgrades, blend or segregate grain, and maintain harvest momentum when delivery pathways are constrained. These benefits are situational and depend heavily on the capability of the business to use storage effectively, rather than on storage volume alone.

Across the case studies, operational benefits such as improved harvest timeliness, reduced exposure to receival congestion, and greater delivery flexibility are consistently identified as core drivers of storage value. These benefits often underpin storage decisions even in seasons where price outcomes are neutral or negative. The analysis also highlights that outcomes differ markedly between businesses facing similar price signals, reinforcing that storage value is context specific rather than universal.

The findings have important implications for grower decision making. Onfarm storage should be evaluated as an enabling tool that expands choice and reduces operational risk, not as a guaranteed pathway to higher prices. Effective storage decisions require consideration of price behaviour, grade spreads, logistics constraints, and business capability in combination. Universal conclusions based on price alone are unlikely to be reliable.

This Southern region analysis provides GRDC with an evidence based foundation for extension and communication that reflects how storage works in practice. It supports more nuanced conversations with growers, focused on decision quality and context rather than simple price expectations, and highlights the need for tailored approaches when assessing the role of onfarm grain storage in different farming systems.

Contents

1. Project Context and Objectives

1.1 Background

On-farm grain storage has become an increasingly prominent feature of grain production systems in southern Australia. Changes in supply chain structure, increased variability in seasonal conditions, and greater pressure on harvest execution have all contributed to an overall interest in storage as a tool to improve business and/or productivity outcomes as markets, delivery and commodities have changed over time.

In many cases, on-farm storage is justified using relatively simple price-based logic. Most commonly the belief that grain prices tend to rise postharvest and that holding grain on farm therefore delivers a price advantage. While this logic is intuitive and widely held, it does not fully reflect the range of commercial, operational, and risk management considerations that influence storage decisions in practice.

The GRDC Stored Grain Project was initiated to test this assumption. Rather than producing a generic investment model or infrastructure return analysis, the project is designed to develop a decision focused understanding of on-farm storage, examining when, why, and under what conditions storage creates value, and when it does not.

This Southern region analysis represents a core component of that work. It focuses on testing commonly held assumptions around storage value, particularly those linked to grain price timing, and situating those findings within the broader operational and market context faced by growers. It also aims to dispel that on farm storage is the only answer to capturing grain price rises post-harvest, whereas a rising market (tide) will generally lift all boats which is not on farm storage dependant totally.

1.2 Project Objectives

The objectives of this analysis are to:

- Test whether flat grain price timing, net of holding and carry costs, consistently justifies on-farm storage in the Southern region;
- Examine the relative importance of price behaviour, grade spreads, logistics, and quality outcomes in determining realised storage value;
- Identify situations where storage may enhance outcomes, as well as situations where it may introduce additional risk or cost; and
- Provide GRDC with a robust, evidence based foundation for extension and communication that avoids one size fits all conclusions.

The intent is not to determine whether on-farm storage is “good” or “bad”, but to clarify how storage works in practice, why outcomes differ between businesses, and why universal rules based on price alone often fail.

1.3 Scope and Boundaries

This report focuses on grain storage outcomes in the Southern region, using benchmark commodities that are representative of common cropping systems (wheat, barley, canola and lentils). The analysis combines historical price analysis with qualitative insights drawn from grower case studies to explore both theoretical and realised outcomes.

To ensure clarity and avoid misinterpretation, the following boundaries apply:

- The analysis is not an infrastructure investment appraisal and does not assess capital payback periods, asset depreciation, or balance sheet impacts;
- Pricing analysis is used to test assumptions and beliefs, not to generate prescribed marketing strategies;
- Case studies are used to illustrate context and decision making, rather than to imply representative or average outcomes.

By defining these boundaries, this report positions on-farm storage as a decision problem, rather than a simple financial calculation, and sets the foundation for the analytical sections that follow.

2. Analytical Framework

2.1 Framing On-Farm Storage Decisions

On-farm grain storage is often discussed as a financial or infrastructure investment decision. In practice, however, storage is more accurately understood as a decision tool that alters the set of choices available to a grower at harvest and postharvest. Its value is therefore contingent on context, capability, and timing rather than on price movement alone.

Early discussions that informed the GRDC Stored Grain Project emphasised the need to move beyond purely market price-based justification thinking and instead assess storage through the lens of real world decision making. This report adopts that approach by framing storage as an enabling mechanism that can influence *when*, *where*, and *how* grain is sold, rather than as a passive asset that simply captures post-harvest price rises (or falls).

This framing is critical to interpreting both the pricing analysis and the case study material that follows.

2.2 The Three Lens Framework

To reflect how growers and advisors evaluate storage decisions in practice, this analysis adopts a three lens framework. These lenses are not independent; rather, they interact to determine whether storage creates value in each season and business context.

Factors that affect why a grower may choose to store grain on farm include:

Pricing environment

- Low price with a fundamental outlook
- Volatility/downside risk
- Average prices/speculation
- High prices with underpinning fundamentals
- Cost of production awareness

Quality environment

- Weather damage or downgraded
- Low test weight
- Protein/moisture or admix
- Pest and weed cleaning needs
- Blending options
- Varietal specific acceptance

Logistics environment

- Harvest timeliness
- Delivery timing and/or arbitrage
- Infrastructure constraints
- Receival site congestion (impacting timeliness)
- Blending opportuties for diferent markets
- Operational flexibility

Figure 1 - Factors that affect storage decisions

2.2.1 Price

The price lens focuses on how storage interacts with grain price behaviour, including:

- Flat price movement between harvest and postharvest periods "*Prices always go up post harvest*"
- Seasonal and cyclical price patterns "*Low prices fix low prices over time*"
- Grade spread behaviour and postharvest compression or widening *"spreads always get better post harvest"*; and
- The role of carry and holding costs in determining net outcomes "*the price isn't good enough yet*".

Price based logic is often the most visible justification for storage. However, price signals alone do not determine whether an opportunity can be captured, nor do they fully describe downside risk. For this reason, price analysis in this report is used to test assumptions, not to prescribe storage strategies.

2.2.2 Logistics

The logistics lens captures the operational role of storage in enabling or constraining harvest and delivery decisions. This includes:

- Harvest efficiency and timeliness;
- Freight availability, variability, and cost;
- Receival site congestion and access risk; and
- Flexibility in delivery timing and pathways (exfarm versus bulk handler).

In many Southern region systems, logistics constraints, rather than price alone, are a large driver for storage use. Storage can allow harvesting to continue when delivery options are limited, reduce exposure to freight bottlenecks, and provide optionality in when and where grain is delivered. These effects are central to realised outcomes but may be observed in price received from a delivered market and/or from freight arbitrage which impacts the nett price received which can be harder to quantify.

2.2.3 Quality

The quality lens considers storage as a tool for managing grain quality and grade outcomes, including:

- Moisture management and weather related risk – either managing downgrades or enhancing timeliness by getting the crop off quickly;
- Blending opportunities;
- Avoidance of forced selling into downgraded markets; and
- Managing grade spreads and buyer specifications.

Quality related value often arises in short, high-pressure windows where harvest execution and delivery timing intersect. Storage can enable access to markets that would otherwise be unavailable or uneconomic, even in seasons where flat price movement is limited.

2.3 Implications for the Analysis That Follows

This three lens framework underpins the structure of the report:

- Pricing analysis is used first to test the reliability of flat price timing and to examine spread behaviour and structural risk;
- Case study insights are then used to explain why pricing logic alone does not apply uniformly across businesses or seasons; and
- Decision making implications are drawn by integrating price, logistics, and quality considerations rather than treating them in isolation.

By adopting this framework, the report avoids universal conclusions and instead focuses on understanding why storage outcomes differ, even when growers face similar price signals.

3. Methods

This section outlines the methodological approach used in the Southern region analysis.

Two complementary methods are employed:

1. A grain price analysis designed to test commonly held assumptions about on-farm storage value based on price timing; and
2. A case study program designed to explain why realised storage outcomes differ across businesses, seasons, and systems.

The pricing analysis is presented first, as it forms the analytical foundation of the report. Case studies are then used to interpret and contextualise those findings.

3.1 Grain Price Analysis Methodology

3.1.1 Purpose of the Pricing Analysis

The grain price analysis is designed to test whether price timing, net of holding and carry costs, provides a consistent and reliable justification for on-farm grain storage in the Southern region.

Specifically, the analysis seeks to:

- Examine the frequency and magnitude of post-harvest price movements relative to harvest prices;
- Assess outcomes after accounting for realistic holding and carry assumptions;
- Identify downside risk as well as upside potential; and
- Compare flat price behaviour with the behaviour of grade spreads and longer-term structural price movements.

This analysis is intentionally diagnostic rather than prescriptive. It does not attempt to model storage infrastructure returns or recommend specific marketing strategies. Instead, it tests the validity of a commonly held belief, that price alone is a justification for storage, under realistic commercial assumptions.

3.1.2 Dataset and Scope

The pricing analysis focuses on the Southern region, using benchmark commodities representative of common cropping systems. Historical price data spanning approximately 10–15 years is used to capture a range of seasonal, cyclical, and structural market conditions.

3.2 Case Study Methodology

3.2.1 Purpose of the Case Studies

While the pricing analysis tests whether flat price timing justifies storage, it does not explain why outcomes differ between businesses facing similar price signals. The case study program is therefore designed to:

- Capture operational, logistical, and quality related factors that are not visible in price series;
- Examine how storage decisions are made in practice;
- Identify circumstances where storage enhances outcomes, and where it does not; and
- Provide real world context to interpret pricing results.

Case studies are used as explanatory evidence, not as representative averages.

3.2.2 Case Study Selection

Case study participants are selected using a structured screening process to ensure relevance and diversity. Selection criteria include:

- Active use of on-farm storage as part of harvest or marketing decisions;
- The ability to describe both positive and negative storage experiences;
- Exposure to different storage systems, scales, and enterprise mixes; and
- Representation across the Southern region.

This approach avoids reliance on anecdotal examples and ensures that case studies reflect a range of decision contexts.

3.2.3 Data Collection Approach

Each case study is developed using a consistent interview and survey structure. Information collected includes:

- Farm and storage context;

- The primary decision triggers for using storage;
- Specific seasons where storage worked well;
- Seasons where storage did not add value or introduced additional risk;
- Counterfactual outcomes in the absence of storage; and
- Non-financial impacts such as harvest efficiency, stress, and decision confidence.

This consistency enables synthesis across cases without implying uniform outcomes.

3.2.4 Use of Case Studies in This Report

In the main body of the report, case studies are synthesised thematically to explain and interpret the pricing analysis results. Individual case narratives are not presented in full within the main text.

Complete case study write-ups are provided in the appendices for reference. This structure allows the report to maintain analytical flow while still grounding conclusions in real world experience.

3.3 Relationship Between Methods

The two methods are deliberately complementary:

- The pricing analysis establishes what flat pricing timing (purely the movement of the market) would imply in theory;
- The case studies demonstrate how storage value is realised, or not realised, in practice.

Together, they provide a robust foundation for examining why universal price-based rules fail to explain on-farm storage outcomes across different systems and seasons alone.

4. Pricing Analysis Results

4.1 The Belief Being Tested

A common justification for on-farm storage is the belief that grain prices "usually rise after harvest", implying that holding grain will deliver a reliable price uplift. In fact, if we store grain post-harvest for price alone, we are implicitly indicating that we are not happy with the current price on offer and we *expect* it to be higher later.

Does price alone however, hold strong enough justification in every environment?

4.2 Track Price Timing Outcomes

For this analysis, Pinion Advisory has maintained a strong and robust daily history of data for all major commodities. For this track price analysis (which is designed to demonstrate general market price movements for commodities), is based off Port Adelaide for wheat, barley, lentils and canola pricing for relativity to global and local influences. This analysis is high level and focus on the value of a "hold and hope strategy". It should be noted that this alone does not dictate a net storage benefit – as everyone holding grain is exposed to changes in market dynamics whether in a bulk handling system or on farm.

Wheat market statistics

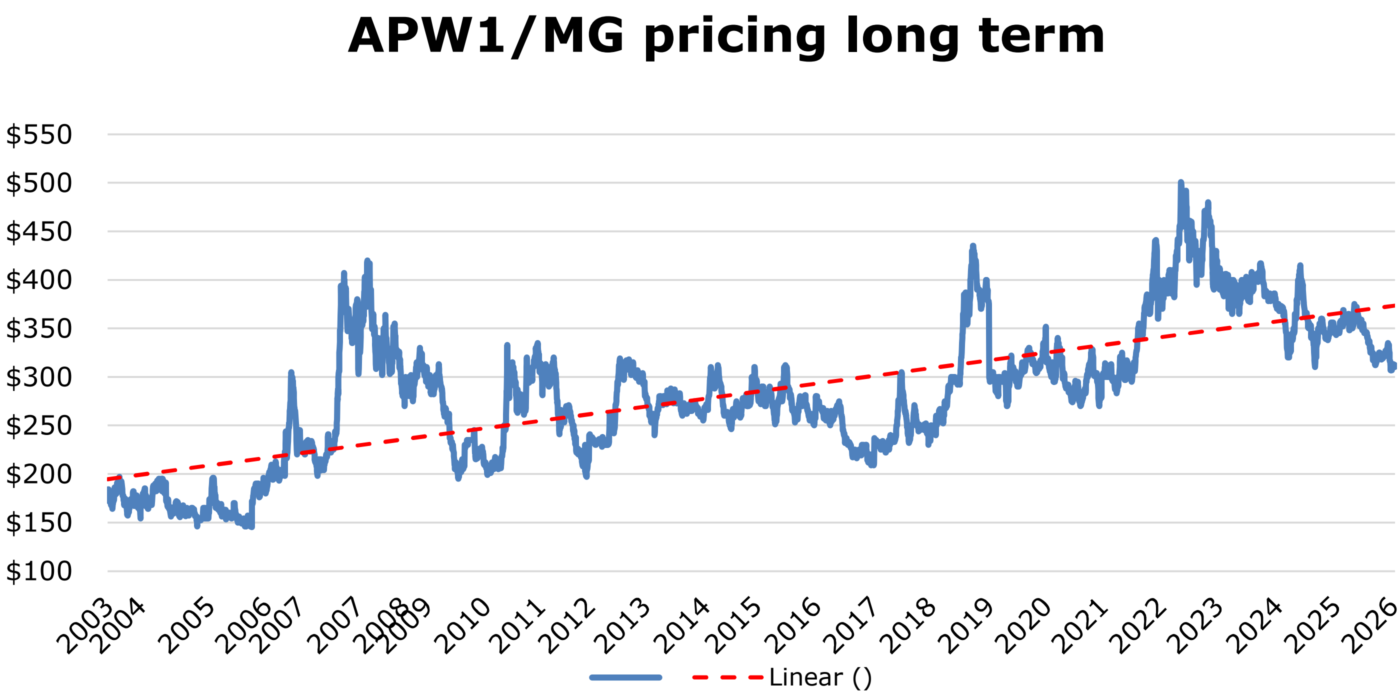

Figure 2 - APW Wheat track price Adelaide

Hold period	Year by year comparison	Median outcome	Outcome range (visible on chart)	Dispersion interpretation	Correlation implication
Harvest (baseline)	Harvest price each year	~$334/t	~$180 to ~$385	Very wide natural variation	Baseline volatility is high
3month hold (+90 days)	Harvest → ~3 months post-harvest (same year)	≈ $337/t	Similar ~$180–$385 range	Range overwhelms any average uplift	No meaningful correlation
6month hold (+180 days)	Harvest → ~6 months post-harvest (same year)	$346/t	Still ~$180–$385+	Upside and downside both increase	Weak, unstable correlation
Interyear hold	Harvest → following season/year	Median does not shift materially	Widest range (includes extreme spikes)	Rare events dominate outcomes	Event driven, not time driven
Across all periods	Harvest → 3 → 6 → interyear	No monotonic increase	Full $200+/t spread persists	Variance ≫ signal	Time explains little

Figure 3 - Wheat statistical analysis by period

Canola track market statistics

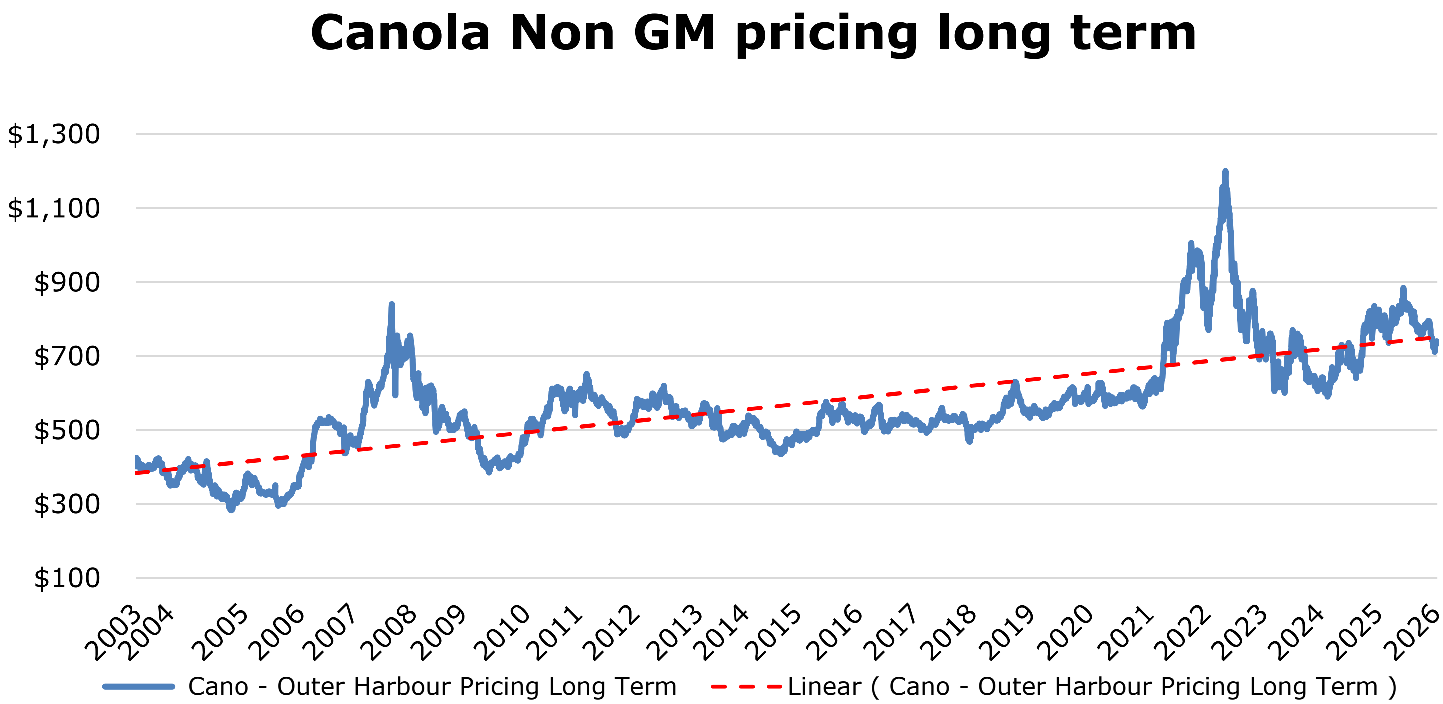

Figure 4 - Canola (non-GM) track price Adelaide

Hold period	Year by year comparison	Median outcome	Outcome range (visible on chart)	Dispersion interpretation	Correlation implication
Harvest (baseline)	Harvest price each year	~$629/t	~$400 to ~$775	Very wide inherent volatility	Baseline dispersion is high
3month hold (+90 days)	Harvest → ~3 months post-harvest (same year)	$627/t	Still ~$400–$800	Upside occurs, but downside remains material	Conditional correlation only
6month hold (+180 days)	Harvest → ~6 months post-harvest (same year)	$627/t	Range widens further (~$400–$900+)	Variance increases with time	Weak, unstable correlation
Interyear hold	Harvest → following season/year	Median does not consistently rise	Widest range (includes extreme spikes)	Rare oilseed driven events dominate	Event driven, not time driven
Across all periods	Harvest → 3 → 6 → interyear	No monotonic progression	Full $400+/t spread persists	Variance ≫ signal	Time explains little

Figure 5 - Canola statistical analysis by period

Barley market statistics

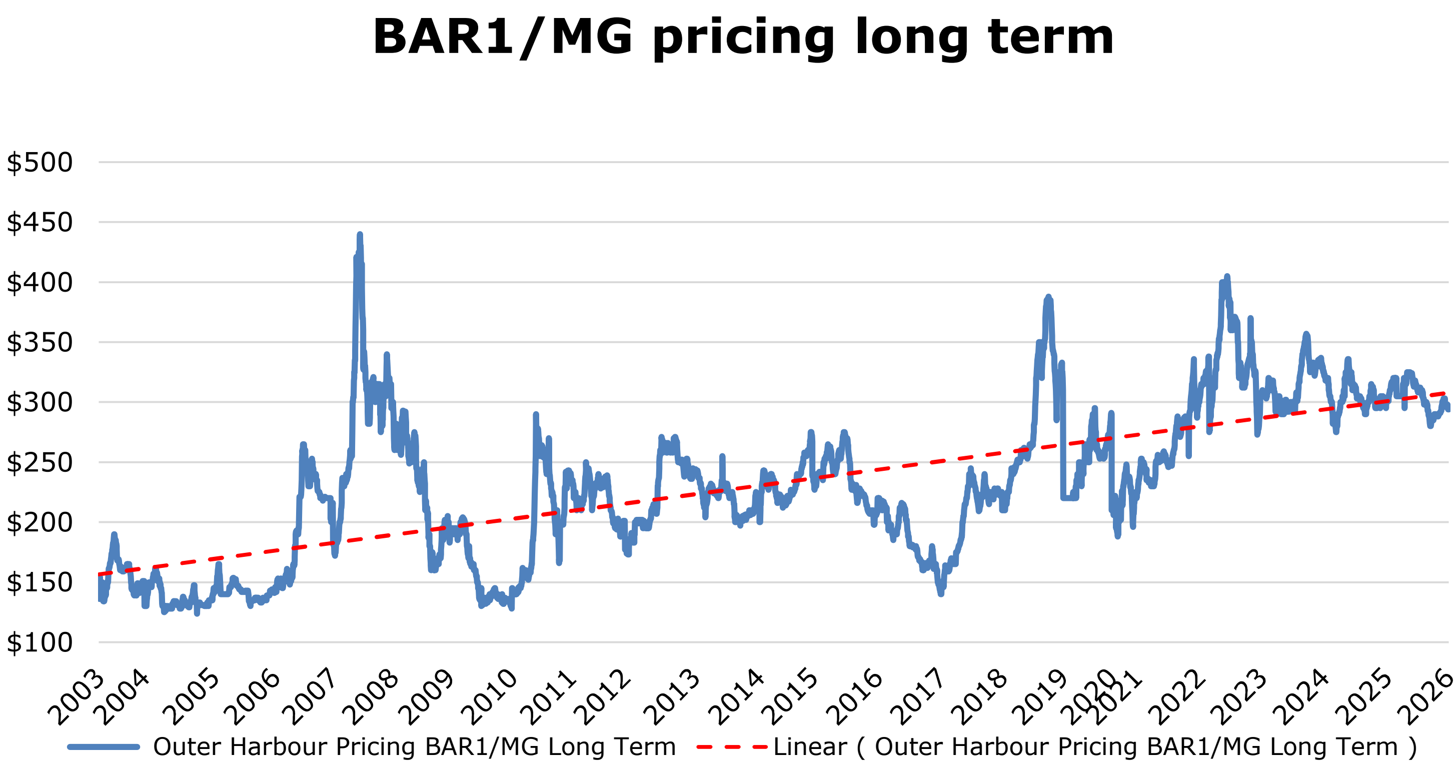

Figure 6 - Barley (Bar1) track market Adelaide

Hold period	Year by year comparison	Median outcome	Outcome range (visible on chart)	Dispersion interpretation	Correlation implication
Harvest (baseline)	Harvest price each year	~$280/t	~$145 to ~$317	Wide natural volatility at harvest	Baseline risk already high
3month hold (+90 days)	Harvest → ~3 months post-harvest (same year)	≈ harvest median	Similar ~$145–$320	Little visual separation from harvest	No meaningful correlation
6month hold (+180 days)	Harvest → ~6 months post-harvest (same year)	Occasionally higher in some years	Still ~$145–$330	Upside and downside both persist	Weak, unstable correlation
Interyear hold	Harvest → following season/year	Median does not shift materially	Range widens slightly in spike years	Rare demand/supply events dominate	Event driven, not time driven
Across all periods	Harvest → 3 → 6 → interyear	No monotonic increase	$170+/t spread persists	Variance ≫ signal	Time explains little

Figure 7 - Barley statistical analysis

Lentils market statistics

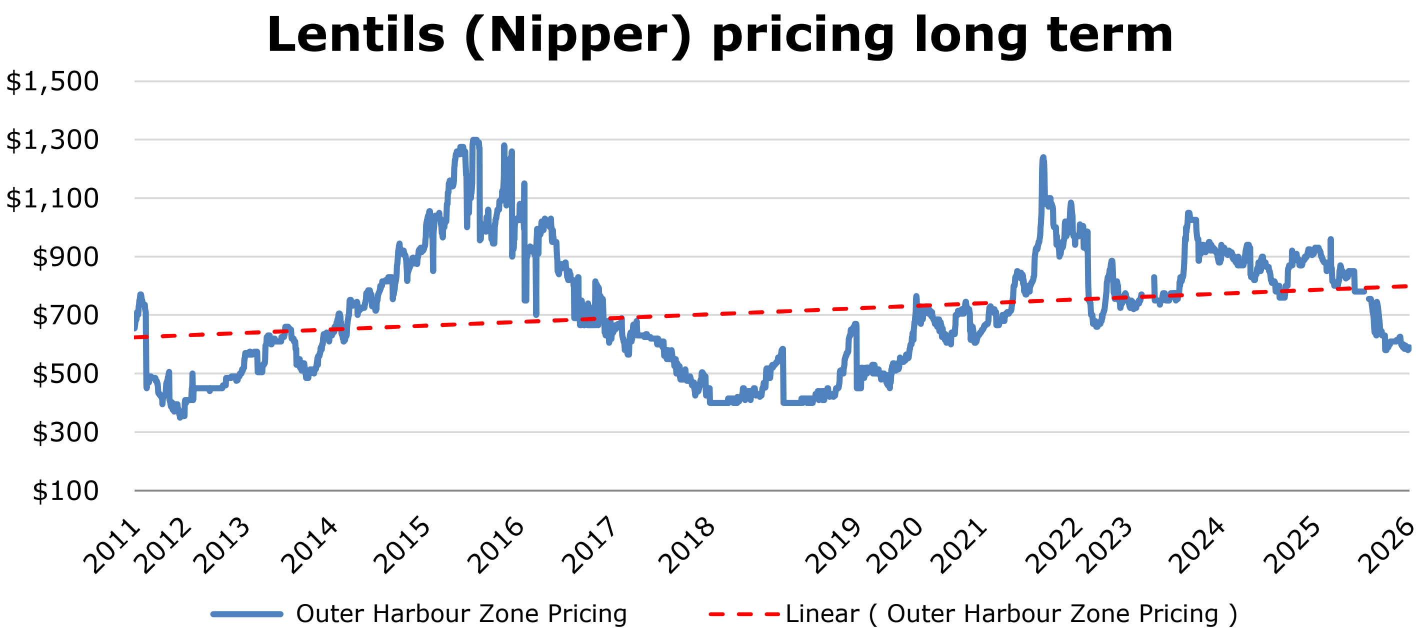

Figure 8 - NIPT1 Lentils track price Adelaide

Hold period	**Year by year comparison**	**Median outcome (NIPT)**	**Outcome range (NIPT)**	**Dispersion interpretation**	**Correlation implication**
Harvest (baseline)	Lentil price at harvest each year	~$700/t	~$350 to ~$1,300/t	Extremely wide inherent volatility	Baseline dispersion already very large
3month hold (+90 days)	Harvest → ~3 months postharvest (same year)	Similar to harvest median	~$350–$1,300/t	Strong overlap with harvest outcomes	No reliable correlation
6month hold (+180 days)	Harvest → ~6 months postharvest (same year)	Occasionally higher in some years	Range remains ~$350–$1,300+	Variance dominates any uplift	Weak, unstable relationship
Interyear hold	Harvest → following season/year	Median does not systematically rise	Widest dispersion; spike years dominate	Rare demand/supply shocks drive outcomes	Event driven, not time driven
Across all periods	Harvest → 3 → 6 → interyear	No monotonic progression	~$950+/t full spread	Variance ≫ signal	Time explains little

Figure 9 - Lentil statistical analysis

How does the time and capex value of holding grain impact the overall outcome?

Accumulated Cost of storage per month at 6% interest and $2/mt per month													
		Months held											
		1	2	3	4	5	6	7	8	9	10	11	12
	$ 300	$ 3.50	$ 7.00	$ 10.50	$ 14.00	$ 17.50	$ 21.00	$ 24.50	$ 28.00	$ 31.50	$ 35.00	$ 38.50	$ 42.00
	$ 350	$ 3.75	$ 7.50	$ 11.25	$ 15.00	$ 18.75	$ 22.50	$ 26.25	$ 30.00	$ 33.75	$ 37.50	$ 41.25	$ 45.00
	$ 400	$ 4.00	$ 8.00	$ 12.00	$ 16.00	$ 20.00	$ 24.00	$ 28.00	$ 32.00	$ 36.00	$ 40.00	$ 44.00	$ 48.00
	$ 450	$ 4.25	$ 8.50	$ 12.75	$ 17.00	$ 21.25	$ 25.50	$ 29.75	$ 34.00	$ 38.25	$ 42.50	$ 46.75	$ 51.00
	$ 500	$ 4.50	$ 9.00	$ 13.50	$ 18.00	$ 22.50	$ 27.00	$ 31.50	$ 36.00	$ 40.50	$ 45.00	$ 49.50	$ 54.00
	$ 550	$ 4.75	$ 9.50	$ 14.25	$ 19.00	$ 23.75	$ 28.50	$ 33.25	$ 38.00	$ 42.75	$ 47.50	$ 52.25	$ 57.00
	$ 600	$ 5.00	$ 10.00	$ 15.00	$ 20.00	$ 25.00	$ 30.00	$ 35.00	$ 40.00	$ 45.00	$ 50.00	$ 55.00	$ 60.00
$ per MT	$ 650	$ 5.25	$ 10.50	$ 15.75	$ 21.00	$ 26.25	$ 31.50	$ 36.75	$ 42.00	$ 47.25	$ 52.50	$ 57.75	$ 63.00
	$ 700	$ 5.50	$ 11.00	$ 16.50	$ 22.00	$ 27.50	$ 33.00	$ 38.50	$ 44.00	$ 49.50	$ 55.00	$ 60.50	$ 66.00
	$ 750	$ 5.75	$ 11.50	$ 17.25	$ 23.00	$ 28.75	$ 34.50	$ 40.25	$ 46.00	$ 51.75	$ 57.50	$ 63.25	$ 69.00
	$ 800	$ 6.00	$ 12.00	$ 18.00	$ 24.00	$ 30.00	$ 36.00	$ 42.00	$ 48.00	$ 54.00	$ 60.00	$ 66.00	$ 72.00
	$ 850	$ 6.25	$ 12.50	$ 18.75	$ 25.00	$ 31.25	$ 37.50	$ 43.75	$ 50.00	$ 56.25	$ 62.50	$ 68.75	$ 75.00
	$ 900	$ 6.50	$ 13.00	$ 19.50	$ 26.00	$ 32.50	$ 39.00	$ 45.50	$ 52.00	$ 58.50	$ 65.00	$ 71.50	$ 78.00
	$ 950	$ 6.75	$ 13.50	$ 20.25	$ 27.00	$ 33.75	$ 40.50	$ 47.25	$ 54.00	$ 60.75	$ 67.50	$ 74.25	$ 81.00
	$ 1,000	$ 7.00	$ 14.00	$ 21.00	$ 28.00	$ 35.00	$ 42.00	$ 49.00	$ 56.00	$ 63.00	$ 70.00	$ 77.00	$ 84.00

Figure 10 - Accumulated cost of carry at 6% interest and $2/mt per month storage fee (whether Bulk handler or capex driven)

When holding grain, we are intrinsically suggesting that the price now is not good enough to sell some or all the grain on hand (for unpriced grain in storage). Whilst track market forces suggest there is great volatility and no set reasoning to hold grain reliably seeking an increase every year, the time costs of money as well as capital costs (capex or warehousing fees) also need to be considered.

This varies by months held, interest rates and the value of grain, but growers must hold a firm view (with a plan) around the ability of unsold grain to gain more than the costs of carry over that timeframe. Using 6% interest and $2/tonne per month warehousing, we can see some of these costs rapidly increase. This suggests that grain held without a plan or outlook can materially erode the potential of sales pricing.

Summary insights of track price timing as a reliable business case for on farm storage

The commodity level track price analysis undertaken for the Southern region demonstrates that track price movements alone do not provide a sufficiently reliable business case for on-farm grain storage when assessed across seasons and considering the cost of carry.

Across benchmark commodities, post-harvest track prices exhibit high variability, with outcomes ranging from positive to materially negative once realistic holding and carry costs are applied. While some seasons deliver favourable post-harvest price movements, these outcomes are inconsistent and are offset by years where prices stagnate or decline, exposing stored grain to downside risk.

Importantly, the analysis shows that average price outcomes mask meaningful risk. Median results, the proportion of positive years, and worst case outcomes provide a more accurate representation of decision risk than headline averages. From this perspective, track price timing performs poorly as a universal or standalone decision rule for storage.

The findings also highlight a key limitation of track price analysis: market driven price movements alone do not guarantee that value can be realised at the farm level. Track prices reflect broader supply–demand dynamics, but do not account for delivery constraints, freight availability, quality specifications, or the operational capability required to defer selling grain without disrupting harvest.

As a result, while track price movements can contribute to storage value in specific seasons, they are not, by themselves, a robust or defensible justification for storage investment or use. This finding reinforces the need to consider grade spreads, logistics, quality management, and structural market conditions when evaluating on-farm storage decisions.

4.3 Beyond Flat Price Timing: More Reliable Sources of Storage Value

The analysis of track price movements highlights an important limitation: while track price timing can contribute to storage value in some seasons, it is not consistent and exposes growers to material downside risk when relied upon in isolation. This raises a critical question for storage decision making: are there elements of grain markets and farm operations that provide more reliable or repeatable sources of value than flat price movements alone?

Two such elements emerge clearly from both the pricing analysis and grower experience:

- grade spreads, which reflect quality differentiation and buyer demand rather than absolute price direction; and
- logistics, which influence whether and when grain can be harvested, stored, and delivered to different points or managed if needed.

Unlike track price timing, both grade spreads and logistics are closely linked to operational control and capability at the farm level, making them potentially more dependable contributors to realised storage value.

Example – Volatility of price

Whist this is not a recommendation or akin to on-farm storage as such, it should be noted that volatility in price from a low base cycle can offer some potential advantages to selectively hold some commodities and where storage in this environment could offer a better overall business case to holding grain from a price point alone. Whilst this is speculative in nature, some commodities do not make overall sense to try and execute at harvest.

Examples of these include niche crops or heavily supply and demand orientated commodities. Feed oats and lupins for example in the southern region are a reasonable example of this. Small seeds like vetch can also show strong net benefit to price alone where immediate delivery is not possible or the market is very reactive to supply.

Likewise, commodities that have high price volatility from a low base (such as lentils) could offer better overall price capture than relatively lower volatility crops (such as cereals), although this is much more speculative in nature.

4.3.1 Grade Spreads vs Track Price Movement

Grade spreads represent the price difference between grain of differing quality specifications and are shaped by market demand, supply composition, and buyer requirements. Importantly, grade spreads often behave differently to flat prices, particularly around harvest when quality uncertainty, delivery pressure, and receival constraints are greatest.

Storage can create value by allowing growers to:

- avoid selling grain into temporarily wide or unfavourable spreads at harvest;
- hold grain until postharvest spread compression occurs; and
- manage or improve grade outcomes through segregation, blending, or targeted marketing.

From a risk perspective, grade spread opportunities differ from track price timing in two important ways. First, spread movements are frequently driven by local and short term factors (such as quality variability and buyer demand), rather than broad market cycles. Second, storage enables growers to respond selectively, holding grain where spreads are punitive, while selling immediately where spreads are favourable.

As a result, grade spreads can provide a more targeted and situational justification for storage, particularly in seasons where flat price movement is limited or uncertain. This distinction is explored further through the pricing analysis of spread behaviour and supported by the case study evidence presented later in this report.

Example – SFW1 Wheat to APW price spreads

A common analogy with wheat is that "wheat eventually becomes wheat". SFW to APW (or lower grade wheats below ASW quality) are a good example of this interaction. This is especially true when the market is not expecting large volumes of that product or grade.

Grades like SFW wheat generally arise from environmentally impacted conditions. Heavy- or on-going harvest rainfall is a common occurrence for grades like SFW. Where these conditions occur, the market typically favours better qualities first as it takes time to reassess the market demand and blending capabilities of lower grades.

Figure 11 shows the clear interaction between spread interaction and rainfall. Through higher rainfall years or years with harvest rainfall, spreads widen from APW to SFW. Conversely, spreads show tightening under market supply and demand fundamentals, with 2018/19 showing a negligible difference as the market just looks for product.

Figure 12 shows that spreads to SFW are typically at their widest during harvest (October to January) and reducing through the year.

This example shows a clear example where a considered marketing strategy around quality, logistics and blending can create a commercial different net outcome. It is technically true that this would be the same regardless of on farm or warehoused grain. This is dependant though on domestic markets and the difference being realised domestically.

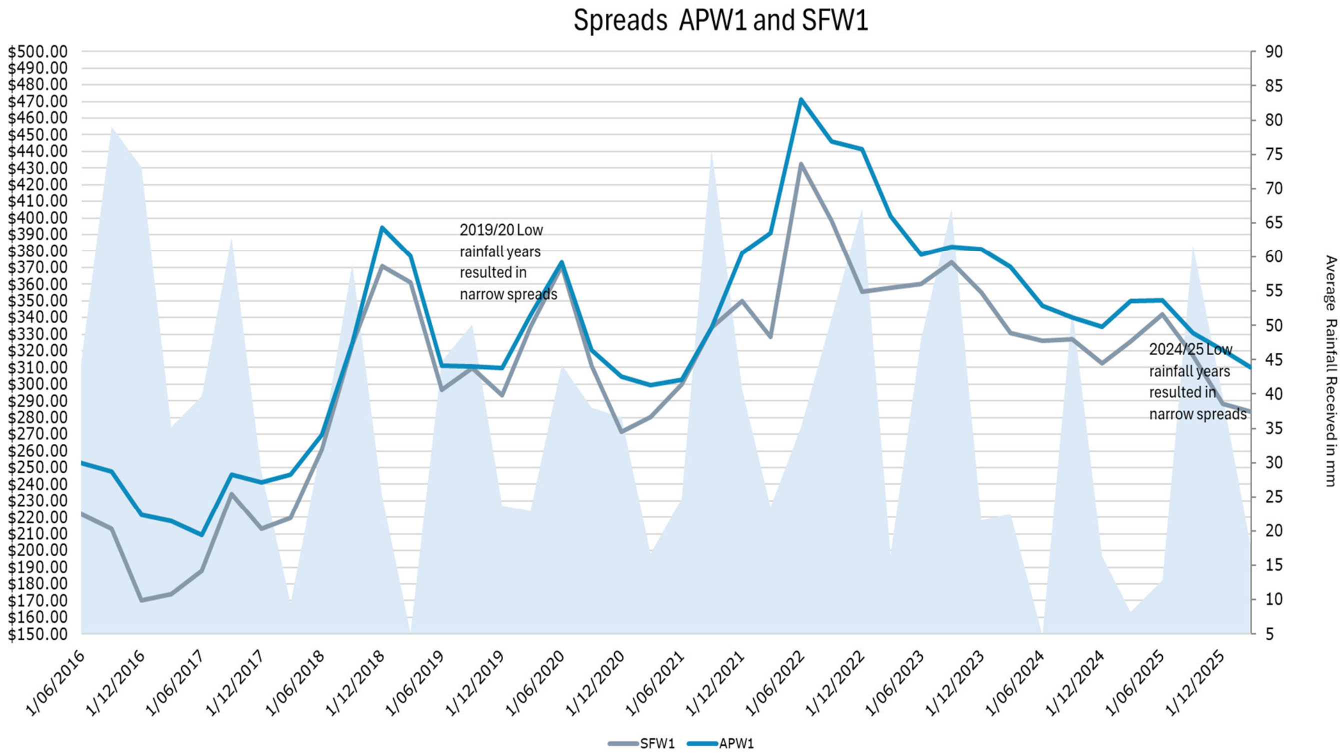

Figure 11 - SFW1 to APW1 spread with rainfall overlay

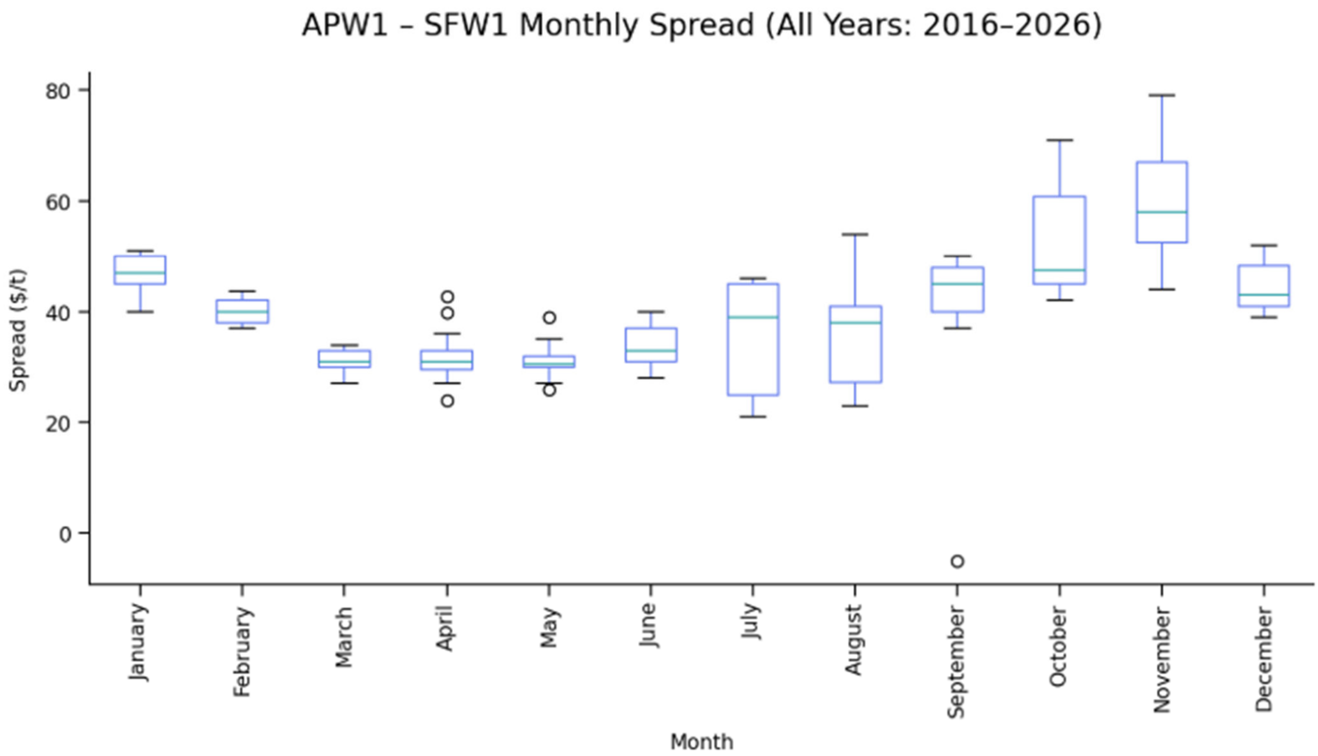

Figure 12 - Box and whisker of APW to SFW spread movements by month

Example – GM vs Non-GM canola spread

While wheat provides a clear example of grade spread behaviour within a single commodity, canola offers an additional and distinct difference of how storage value can be influenced by relative price differentials rather than overall market movement.

In the Southern region, canola pricing is commonly segmented between GM and non-GM grain, with the differential between these grades varying through the season. Importantly, movements in the GM to non-GM spread are not necessarily aligned with movements in the underlying canola market.

Analysis of historical canola pricing shows that:

- Track canola prices (both GM and non-GM) tend to move broadly together in response to global oilseed markets, currency movements, and domestic supply and demand conditions; however

- The GM to non-GM discount can widen or narrow independently of track price movements, driven by factors such as buyer demand for GM supply, segregation capacity, export program requirements, and the availability of GM grain.

This distinction is critical when assessing the role of on-farm storage. A grower may store canola through harvest expecting a general postharvest price rise yet realise little benefit if both GM and non-GM prices move in parallel. Conversely, storage can create value in seasons where the GM discount narrows postharvest, even if overall market prices are flat or declining.

In this context, on-farm storage does not create value by "capturing the market", but by enabling participation in a different pricing window or grade outcome. Storage allows GM canola to be held until periods when segregation constraints ease, export programs are executed, or domestic demand strengthens, at which point the GM discount may be tighter than at harvest. On farm storage may be able to be leveraged more around oil premium and discounts, whereby low oil canola could suit a domestic 38% flat oil market versus an export pathway with premiums and discounts being applied at 42% base oil. This provides optionality, not purely market capture.

However, this outcome is not guaranteed. The GM to non-GM spread has also been observed to increase or remain wide in some seasons, meaning that storage exposes growers to the risk of holding grain without a compensating spread improvement. As with wheat grade spreads, the distribution of outcomes matters more than the average outcome.

This reinforces a key finding of the analysis. For canola, the value of on-farm storage is more closely linked to the behaviour of grade differentials than to track price timing alone. Storage increases optionality, but it also concentrates exposure to spread risk, which varies by season and market structure.

4.3 Logistics vs Track Price Movement

Logistics represent a second, and often under recognised/leveraged, source of storage value. While track prices and spreads describe *potential* market outcomes, logistics determine whether those outcomes can be realised.

In practice, storage affects logistics by:

- enabling harvest to continue when delivery options are constrained;
- reducing reliance on peak period freight availability;
- providing flexibility in delivery timing and pathway selection; and
- avoiding forced selling driven by receival congestion or access risk rather than price.
- Arbitrage of delivery points and freight which can fluctuate based on regional demand centres.

Unlike price movements, logistics benefits do not depend on favourable market direction. Instead, they arise from reducing operational bottlenecks and preserving optionality, particularly during compressed or weather affected harvest windows.

This distinction is critical. In many cases, the value attributed to "price gains" from storage is inseparable from the logistical flexibility that storage provides. Without the ability to keep harvesting, defer delivery, or access alternative pathways, favourable prices or spreads may be unavailable in practice.

Accordingly, logistics should be considered not as a secondary benefit of storage, but as a foundational condition that enables price and spread opportunities to be captured.

Example – ASW1 Delivered to Melbourne over the Melbourne track spread

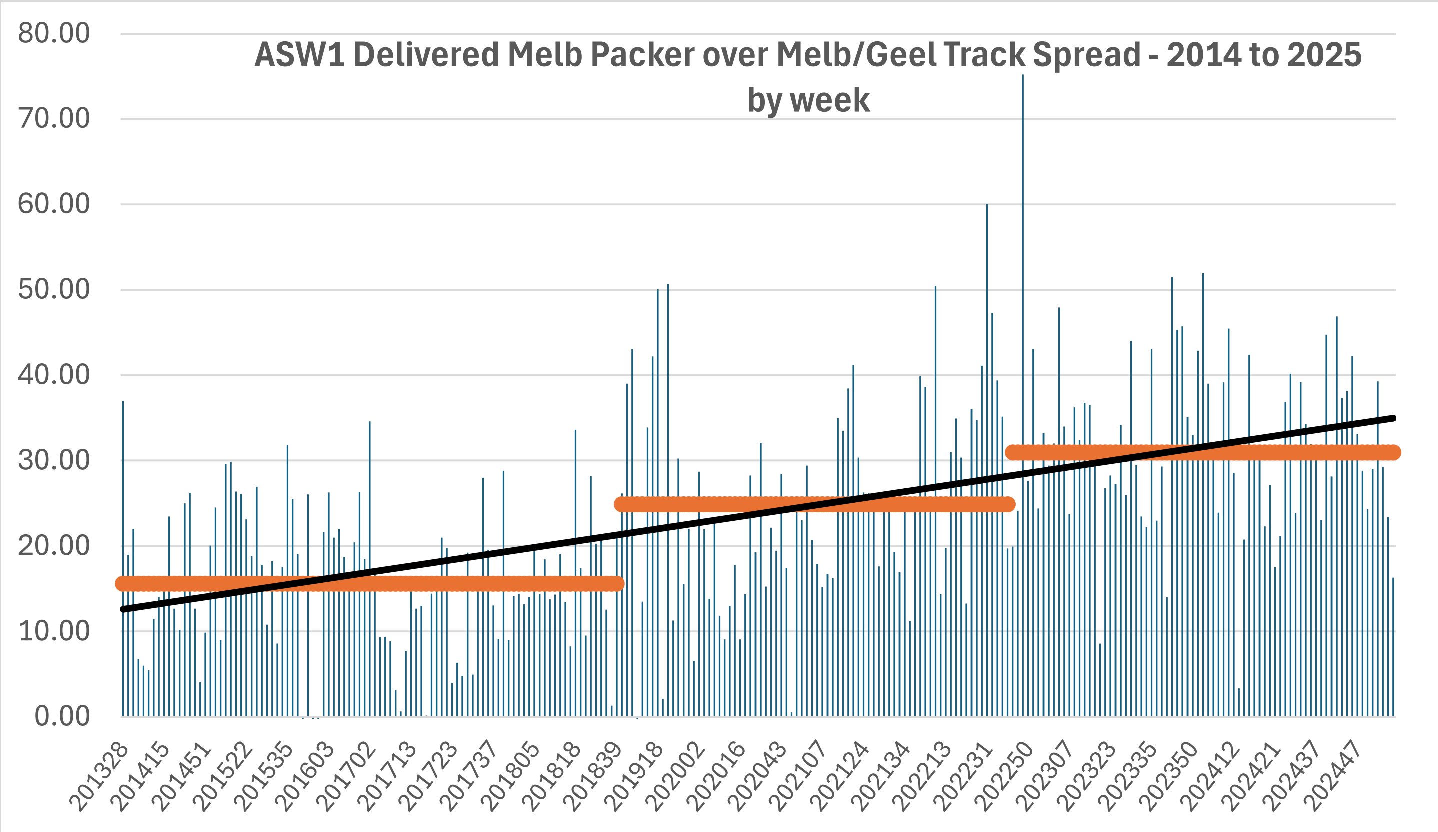

Figure 13 - Delivered market spread differences in the Melbourne packer market

Data from Pinion Advisory since 2014 shows material difference in the ability to access a delivered market in that zone. It should be noted that where there are greater domestic delivery options (and corresponding competition for supply), this provides greater logistical optionality. This is particularly true in this example versus a more export dominant market zone, such as Eyre Peninsula in South Australia with much more limited domestic options available (at a price differential that makes commercial sense).

Figure 13 demonstrates a structurally different market over track in Victoria for certain grades (in this case ASW1) where the average spread difference is currently $30/mt over the track price in the past 4 years. Where market conditions allow, this provides a clear net benefit from being able to access this market that operates on "just in time" delivery indicating that on-farm storage is a pivotal asset in capturing this spread differential.

Figure 13 data is derived from comparing actual trades of ASW1 in that zone where a corresponding "track' trade and "delivered" sale occurred in the same week in that zone. The delivered trades are also not necessarily all to Melbourne, they are also to upcountry destinations with a theoretical Delivered Melbourne value based on prevailing road freight against that trade to enable a like for like comparison.

Over the ten year period, there were clear structural differences in market behaviour, particularly around shifts in export competitiveness, elevation margins, and the balance between domestic demand and export demand driven by seasonal conditions. Within this timeframe, there were years characterised by large crops and substantial elevation margins, however, buyers seeking nearby execution were often required to participate at the same prevailing price levels as those factoring in a significant carry cost due to the full supply chain. All prices referenced in this analysis are considered spot or nearby market prices, reflecting delivery within approximately 4–10 weeks, rather than forward market positions. It should also be noted that the trades analysed represent only a subset of total market activity during the period. As such, there is potential for sample bias, given that the dataset comprises a relatively small proportion of overall market transactions. That said, the underlying trend observed across the period remains clear.

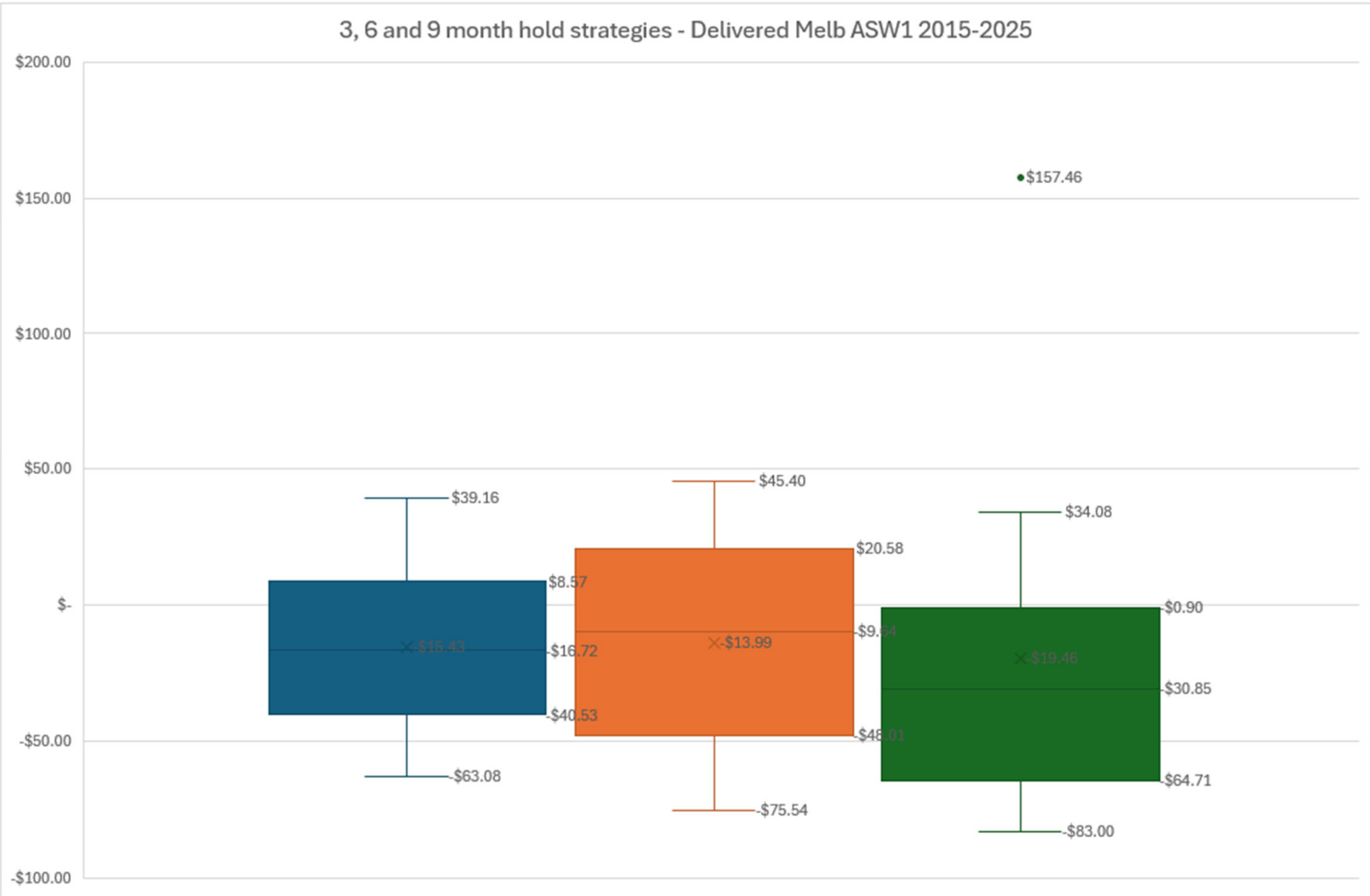

Figure 14 – Comparison of return each year 2015 to 2025 of a 3 month, 6 month and 9 month post harvest carry strategy net of carry costs

Figure 14 shows an analysis of Delivered Melbourne ASW1 markets across 2015 to 2025 data set to analyse the expected return from holding for 3 month (15th April) , 6 month (15th July) or 9 months (15th October) post harvest. Interestingly the average return was actually negative in each one of these time periods net of the cost of carry. The cost of carry was calculated as $2/mt per month and 6%pa holding cost. Some years yielded a positive gain, others a net loss in grain price by holding. There was only one standout year where there was a significant gain in prices from harvest, being 2018, where the net gain was not significantly different in the 3 and 6 months periods but a 9 month hold yielded a net benefit of $157/mt. There were other notable years being 2016, 2019 and 2023 where there was a decline in price across all 3 time frames average $45, $65 and $71 respectively for the 3, 6 and 9 month periods.

The following sections draw on grower case studies to illustrate how grade spreads and logistics interact with pricing outcomes in practice, and why these factors often explain realised storage value more clearly than flat price timing alone

5. Case Study Insights – Why storage value is situational

The pricing analysis demonstrates that market price timing alone does not provide a consistent or reliable justification for on-farm grain storage across seasons. The case studies provide important context for this result by illustrating how storage value is realised in practice, and why outcomes differ between businesses facing similar price signals.

Taken together, the case studies reinforce a central finding of this report: on-farm storage is not a uniform price timing strategy, but a situational tool whose value depends on how it interacts with grade spreads, logistics, and business capability.

5.1 Storage Value Is Rarely Driven by Flat Price Timing Alone

Across the case studies, none of the businesses relied on storage primarily to capture expected postharvest price rises. While some growers identified historical seasons where prices increased after harvest, these outcomes were event dependant rather than dependable and were not the main driver of storage investment or use.

Instead, storage decisions were typically framed around:

- avoiding forced selling at harvest;
- maintaining operational control; and
- creating optionality in how and when grain could be marketed.

This aligns closely with the price analysis, which shows that price timing produces variable outcomes and exposes growers to downside risk when used as a standalone decision rule.

5.2 Grade Spreads as a Targeted Source of Value

Where storage delivered clear price related benefits, these were most often linked to grade spread behaviour rather than flat price movement alone.

In businesses with the capability to segregate and blend grain:

- storage allowed grain to be held when harvesttime spreads were wide or penalties applied;
- parcels could be blended or redirected to achieve higher value specifications; and
- marketing decisions could be deferred until quality and spread conditions improved.

Importantly, these opportunities were selective and situational. Storage was used on some parcels but not others, depending on grade profile and market conditions. This contrasts with flat price timing strategies, which tend to apply storage decisions uniformly across production.

5.3 Logistics as a Foundational Driver of Realised Value

Logistics emerged as a consistent and often dominant driver of storage value across the case studies, particularly where storage systems were designed to support harvest execution rather than long-term holding.

In logistics driven systems, storage enabled growers to:

- maintain harvest momentum during peak periods;
- reduce reliance on congested bulk handling sites;
- manage freight availability and timing; and

- sell grain ex-farm where this reduced handling and transport costs particularly freight off header to local silos

In these cases, the value attributed to storage was largely independent of price direction. Benefits were realised through cost savings, risk reduction, and improved certainty of execution, even in seasons where flat price movement was limited.

5.4 Capability Matters More Than Storage Volume

A consistent theme across the case studies was that capability, rather than storage volume, determined outcomes.

Businesses that derived the greatest value from storage typically had:
- the ability to segregate multiple grades;
- blending capability;
- flexible freight arrangements; and
- active engagement with market spreads and delivery options.

By contrast, where storage was configured primarily as a short-term logistics buffer, value was realised through freight efficiency and harvest flow rather than through pricing or grade outcomes.

This highlights that storage infrastructure alone does not create value; value is realised only when storage is matched to the business's operational and marketing capability.

5.5 Why Outcomes Differ Between Businesses

The case studies help explain why growers facing similar price environments can experience very different storage outcomes.

Differences were driven by:
- enterprise scale and harvest intensity;
- storage configuration and handling systems;
- access to freight and alternative delivery pathways; and
- the role storage plays within the broader business strategy.

As a result, storage value cannot be generalised across farms or seasons. What works well in one system may add little value in another, even under similar market conditions.

5.6 Synthesis with Pricing Analysis

Viewed alongside the pricing analysis, the case studies confirm that:
- Price timing alone is an unreliable guide to storage value;
- grade spreads and logistics provide more consistent, though situational, opportunities; and
- realised outcomes depend on the interaction between market conditions and business capability.

Together, the pricing analysis and case studies demonstrate that on-farm grain storage is best understood as a decision support tool that creates optionality, rather than as a guaranteed pathway to higher prices.

6. Implications for Grower Decision Making

The analysis presented in Sections 4 and 5 shows that on-farm grain storage does not deliver consistent outcomes across farms or seasons. Instead, storage value depends on which constraints are binding in a given year and whether the business has the capability to respond.

Rather than acting as a set of recommendations, the checklist below is intended to help growers and advisors frame the right questions when considering the role of storage in a specific season.

Price Conditions
☐ Are postharvest price movements expected to be strong **and** reliable, once carry is applied?
☐ Is the business willing to accept downside risk if prices weaken after harvest?
☐ Is storage being considered primarily to “wait for price”, or to avoid forced selling?
Evidence from this analysis suggests that flat price timing alone is an unreliable justification for storage.

Grade and Spread Conditions
☐ Are grade spreads wide or punitive at harvest?
☐ Is there a realistic opportunity for spread compression postharvest?
☐ Can the business segregate multiple grades effectively?
☐ Is blending possible to improve grade outcomes at outturn?
☐ Are there alternative buyers or pathways that value specific quality attributes?
Where storage delivered price related benefits in the case studies, these were most often linked to grade spreads rather than flat price movement.

Logistics and Harvest Constraints
☐ Are delivery sites likely to be congested during harvest?
☐ Is freight availability or cost likely to be limiting?
☐ Would delayed delivery slow harvest or increase weather risk?
☐ Can storage enable exfarm sales or alternative delivery pathways?
☐ Does storage materially improve harvest flow or reduce operational pressure?
Across the case studies, logistics benefits were a consistent source of storage value, often independent of price direction.

6.4 Business Capability
☐ Does the business have the handling, monitoring, and management capacity required to use storage effectively?
☐ Are staff, systems, and time available to manage segregations and marketing decisions?
☐ Is storage integrated into a broader marketing and logistics strategy, rather than used in isolation?
☐ Does this trigger additional investment in other capital assets, such as trucks and trailers?
☐ Do we have the resources to be able to deliver when grain is required and at times of the year that is may not “suit”?
Storage infrastructure alone does not create value; outcomes depend on capability.

6.5 Risk and Non Financial Considerations
☐ Does storage reduce harvest stress or increase management complexity in this system?

☐ Does it improve decision confidence, even if price outcomes are uncertain?
☐ Are risk reduction and operational control valued outcomes in their own right?
In several case studies, nonfinancial benefits were central to the perceived value of storage.

7. Limitations and Next Steps

7.1 Limitations of This Analysis

This report has been deliberately designed to test specific assumptions about on-farm grain storage, particularly those related to track price movements. While the analysis provides robust insights for the Southern region, several limitations should be noted when interpreting the findings.

Regional focus
The analysis is confined to the Southern region and reflects the market structures, delivery pathways, and production systems typical of that region. Price behaviour, logistics constraints, and storage value drivers may differ in other GRDC regions, particularly where supply chains, freight distances, or market access conditions vary materially.

Finite case study set
Case study insights are drawn from a limited number of grower businesses selected to illustrate diversity in systems, scale, and storage use. While these case studies provide valuable explanatory context, they are not intended to be statistically representative or to define average outcomes.

Pricing analysis as diagnostic, not predictive
The pricing analysis is designed to test the reliability of market timing under defined assumptions and historical conditions. It does not predict future price movements, nor does it prescribe optimal marketing strategies. Structural market changes, policy shifts, or unexpected supply demand shocks may alter future outcomes relative to historical patterns.

Exclusion of infrastructure return analysis
Consistent with the project scope, this report does not assess capital investment returns, asset depreciation, or balance sheet impacts associated with storage infrastructure. As a result, the findings should be interpreted as informing decision logic, rather than investment appraisal.

7.2 Next Steps

The findings from this Southern region analysis provide a foundation for further work under the GRDC Stored Grain Project. Key next steps include:

Expansion of case study coverage
Extending the case study set across additional regions and production systems will allow further testing of how price, logistics, and quality interact under different conditions, and will strengthen the relevance of extension messaging nationally.

Further regional pricing analysis
Repeating the pricing framework applied here across other GRDC regions will help

identify where flat price timing assumptions are most and least reliable, and where spread behaviour or structural risk plays a greater role.

Development of extension ready outputs
Insights from this analysis can be translated into grower facing decision tools, summaries, and case-based extension material that emphasise optionality, risk awareness, and context specific decision making rather than universal rules.

Appendix

A list of additional appendices provided is:

1. Survey questions and approach
2. Case studies
    2.1 LW Fuller & Sons
    2.2 Ballycastle Farming
    2.3 Southern Mallee Farm
    2.4 Prime Family

On-Farm Grain Storage – Case Study Survey

GRDC GRAIN STORAGE PROJECT

SECTION 1 – Farm & Storage Context

- GRDC Region: ________________________________
- Cropped area (ha): ________________________
- Enterprise mix: Cropping only / Mixed farming / Feed grain user
- Storage type: Permanent silos / Grain bags / Bunker / Shed / Combination
- % of crop typically stored post-harvest: <25% / 25–50% / 50–75% / >75%

SECTION 2 – Storage Philosophy

- Why do you have on-farm storage? _________________________
- In your view, storage primarily provides: Marketing flexibility / Harvest efficiency / Risk management / Spread capture / Quality management / Freight flexibility / Cashflow timing
- If storage was removed tomorrow, what would be most impacted? ____

SECTION 3 – A Time Storage Worked Well

- Year: _____________________
- Commodity & grade: _____________________
- Volume stored (t): _____________________
- Harvest window: _____________________
- Holding duration (days): _____________________
- Market context at harvest (circle): Low / Average / High / Volatile / Oversupplied / Strong carry / Negative basis
- Were grade spreads wide at harvest? Yes / No
- Was there any quality concern? Yes / No
- Were there delivery constraints? Yes / No
- Counterfactual (without on-farm storage): Immediate sale / Warehouse / Pool / Forward contract / Other
- Harvest price available ($/t): _____________________

- Final sale price received ($/t): ______________________
- Estimated storage cost ($/t): ______________________
- Interest/opportunity cost ($/t): ______________________
- Shrink ($/t): ______________________
- Cleaning/blending cost ($/t): ______________________
- Freight differential ($/t): ______________________
- Grade uplift achieved ($/t): ______________________
- If held in bulk handler warehouse instead, would the flat price outcome differ? No / Slightly / Yes / Unsure
- What specifically did on-farm storage allow that warehouse storage would not?

____

LW Fuller & Sons, Mid North SA

Background

LW Fuller & Sons operates a largescale cropping enterprise in South Australia's Mid North, with a predominantly cropping focused business and a smaller livestock component. The business has invested in a diverse on-farm grain storage system that plays an integral role in harvest execution, grade management, and marketing flexibility. Rather than being driven by expectations of postharvest price appreciation, on-farm storage at LW Fuller & Sons is embedded within the business's broader operational and marketing strategy. Storage is used selectively to manage quality risk, respond to grade spread behaviour, and maintain control over when and how grain is sold.

Property Snapshot

- **Location:** Mid North, South Australia
- **Enterprise mix:** Predominantly cropping with minor livestock component
- **Total on-farm storage capacity:** ~5,500 tonnes
    - Shed storage (primarily lentils): ~1,500 t
    - Flatbottom silos (cereals): ~3,000 t
    - Cone bottom silos (flexible segregation): ~1,000 t
- **Typical proportion of crop stored postharvest:** 25–50%, depending on season and grade profile

Why Invest in On-farm Storage?

At LW Fuller & Sons, on-farm storage is primarily used to manage grade and quality outcomes at harvest, rather than to speculate on flat price movements.
Key drivers for storage include:

- the ability to segregate multiple grades;
- flexibility to blend grain parcels to meet buyer specifications;
- improved control over marketing timing; and
- reduced exposure to unfavourable harvest period grade spreads.

The business actively monitors grade spreads and market conditions and uses storage strategically — selling grain immediately when pricing and spreads are favourable and holding grain where grade or spread conditions are punitive at harvest.

How Storage Is Used in Practice

Storage use at LW Fuller & Sons is commodity specific and aligned with the capabilities of different storage assets:

- **Lentils** are almost always stored in the shed, reflecting both their quality sensitivity and the importance of grade optimisation.
- **Flatbottom silos** are used predominantly for wheat and, where sufficient segregation volumes exist, malt barley.
- **Cone bottom silos** provide flexibility for GM canola, off spec wheat, and smaller parcels requiring targeted segregation.

This mix of storage types allows the business to respond dynamically to grade profiles at harvest, rather than being forced into immediate delivery based on receival constraints or narrow specifications.

When Storage Added Value

Across recent seasons, storage has added value by allowing the business to:

- defer sales when harvesttime grade spreads were wide or unfavourable;
- blend parcels to achieve higher value grades at outturn; and
- target specific buyers once quality and spread conditions improved.

In these cases, value was driven primarily by grade management and spread behaviour, rather than by flat price appreciation alone.

When Storage Did Not Add Value

The business also recognises that storage does not add value in every season. Where grade spreads were already favourable at harvest or where grain did not require segregation or blending, storage introduced additional handling and management complexity without delivering a clear financial uplift.
This reinforces the view that storage is most effective when used selectively, rather than as a default response to harvest pricing.

Non Financial and Operational Impacts

In addition to pricing outcomes, LW Fuller & Sons identifies several operational impacts associated with storage:

- **Improved harvest speed:** 4/5
- **Reduced weather downgrade risk:** 4/5
- **Reduced freight volatility:** 3–4/5 (supported by own truck capability)
- **Improved marketing flexibility:** 4/5

The business also notes that storage can increase management complexity and stress, particularly when managing multiple segregations simultaneously.

Key Takeaways

For LW Fuller & Sons, the value of on-farm grain storage lies less in capturing postharvest price rises and more in maintaining control over grade outcomes and marketing decisions.
Storage enables:

- selective selling rather than blanket deferral;
- reduced exposure to unfavourable harvest period spreads; and
- access to quality driven marketing opportunities that are not visible in flat price series.

This case study illustrates how grade spreads and operational capability, rather than track price movements alone, can provide a more reliable basis for storage value in practice.

Ballycastle Farming, Victoria

Background

Ballycastle operates a cropping focused farming business in the Southern region, utilising on-farm grain storage primarily to support market access, freight efficiency, and marketing flexibility rather than long-term price timing.
The storage system is integrated into the business's harvest and marketing approach, allowing grain to be sold exfarm and delivered directly to appropriate buyers rather than being forced through local bulk handling pathways.

Property Snapshot

- **Location:** Central Victoria, Southern Region
- **Enterprise mix:** Cropping
- **On-farm storage system:**
    - Combination of permanent silos and on-farm handling infrastructure
- **Typical storage approach:**
    - Grain stored temporarily postharvest to facilitate exfarm sales and targeted delivery
- **Primary role of storage:** Freight and market access rather than long-term holding

Why Invest in On-farm Storage?

At Ballycastle, the primary motivation for on-farm storage is logistics and market access, not the expectation of postharvest price rises.
Key drivers include:

- the ability to sell grain exfarm rather than delivering to local bulk handling sites;
- reduced freight costs and improved control over freight timing;
- access to a broader range of buyers beyond the local receival network; and
- greater flexibility in matching grain quality to suitable end markets.

Without on-farm storage, grain would need to be delivered immediately into the local bulk handling system, increasing freight costs and limiting marketing options.

How Storage Is Used in Practice

Storage at Ballycastle is used as a short to medium-term logistics and marketing tool, rather than as a long-term holding strategy.
Key features of use include:

- grain being held postharvest to allow direct delivery to end users;
- flexibility to target different buyers depending on quality and specification; and
- avoidance of receival congestion and site specific constraints during harvest.

The system is not designed for extensive segregation or blending, but rather to provide sufficient control to optimise delivery pathways and reduce costs.

When Storage Added Value

In recent seasons, storage has added value at Ballycastle by enabling direct exfarm sales that avoided bulk handling and freight costs.
By selling grain exfarm and delivering directly to buyers, the business achieved measurable per tonne uplifts across multiple commodities, driven primarily by:

- freight savings; and

- improved alignment between grain quality and buyer requirements.

In the case of GM Canola, storage enabled delivery into a market better suited to the achieved quality grade, improving realised value relative to standard bulk handling pathways. This was achieved through utilising on farm grain testing equipment to identify storages with differing oil and admixture contents and targeting specific markets for these parcels. Lower oil was prioritised to the domestic stockfeed market that only required a minimum oil content whilst higher oil parcels were executed into markets paying bonifications. These benefits were achieved without reliance on extended holding periods or favourable flat price movements.

An analysis of the 2025/26 harvest for their program of GM canola indicated that an overall $21/mt was gained from finding alternative markets to the local site on top of a $20/mt freight saving. Across the total production of 1,600mt this equated to over $65,000 of additional profit. This figure includes some pre-harvest sales, so to ensure a like for like comparison against the average harvest (Nov/Dec) local silo price, sales made only in this period (not beforehand) still yielded a gain of $30/mt ($20 freight saving and $10/mt marketing gain) across 750mt sold during Nov/Dec.

When Storage Did Not Add Value

The business recognises that storage does not add value in all circumstances. In some historical seasons, postharvest price increases meant that longer-term storage could have delivered higher prices.

However, these outcomes were episodic and not central to the business's storage strategy, which prioritises cost control, certainty of execution, and market access over exposure to price timing risk.

Non-Financial and Operational Impacts

Beyond direct financial outcomes, Ballycastle identifies several operational benefits from storage:

- **Improved harvest speed:** 5/5
- **Reduced weather downgrade risk:** 3/5
- **Reduced freight volatility:** 4/5
- **Improved marketing flexibility:** 5/5
- **Reduced stress:** 5/5 at harvest, lower postharvest
- **Improved decision confidence:** 4/5

These impacts reflect the role of storage in simplifying harvest logistics and maintaining control during peak workload periods.

Key Takeaways

For Ballycastle, the value of on-farm grain storage lies primarily in freight efficiency and market access, not in capturing postharvest price rises.

Storage:

- enables exfarm sales and direct delivery;
- materially reduces freight and handling costs;
- expands access to buyers beyond local bulk handling sites; and
- improves certainty and control during harvest.

This case study demonstrates how logistics driven storage systems can deliver consistent value even when flat price timing plays a limited role in the storage decision.

Southern Mallee Farm, Victoria

Background

Southern Mallee Farm (SMF)* operates a mixed farming enterprise in the Southern Mallee, Southern region, cropping approximately 1,800 hectares alongside a livestock component. The business utilises a combination of permanent silos and in-paddock harvest storage (field bins) to support harvest logistics and grain marketing.

Unlike storage systems designed for long-term holding or grade optimisation, storage at SMF is primarily configured to enable ex-harvester sales and rapid grain movement, with a strong emphasis on freight efficiency and cashflow management rather than extended postharvest holding.

* The case study grower preferred to remain anonymous

Property Snapshot

- **Location:** Southern Mallee, Southern region
- **Enterprise mix:** Mixed farming
- **Cropped area:** ~1,800 ha
- **On-farm storage system:**
  - In-paddock field bins (primary harvest storage)
  - Limited permanent silo capacity
- **Typical proportion of crop stored postharvest:** 10%, nearly all grain is moved at or shortly after harvest

Why Invest in On-farm Storage?

At SMF, the primary motivation for on-farm storage is freight cost reduction and harvest efficiency, rather than capturing postharvest price movements.

Key drivers include:
- the ability to sell grain ex-harvester rather than delivering into bulk handling sites;
- reduced reliance on peak period freight availability;
- improved cashflow timing, with grain treated as a core cash crop; and
- avoidance of congestion and delays at local bulk handling facilities.

Without on-farm storage, all grain would need to be transported directly to bulk handling sites at harvest, significantly increasing freight cost and operational pressure.

How Storage Is Used in Practice

Storage at SMF is used as a short duration logistics buffer rather than a long-term holding system:
- Grain is typically held for 2–4 days maximum postharvest.
- Storage enables continuous harvesting while freight is coordinated efficiently.
- Grain is sold directly exfarm where possible, reducing handling and transport costs.

The system is not designed for long-term storage, segregation, or blending, and the business does not actively monitor grade spreads or use storage to manage quality differentials.

When Storage Added Value

In the 2025/26 season, storage added value across multiple commodities by enabling exfarm sales that avoided bulk handling and freight costs.
Across barley, lentils, and wheat, the ability to sell ex-harvester delivered an average uplift of approximately $16.70 per tonne, driven primarily by freight savings rather than price timing. In the case of lentils, storage also enabled delivery to a buyer better suited to the achieved quality grade, improving the realised grade spread outcome.
These benefits were achieved without extended holding periods and without reliance on postharvest flat price movement. Interestingly there is next to no extra investment in infrastructure to achieve these ex header sales with all equipment and storage units used post harvest for seed or own stockfeed requirements of the livestock component of the business. The investment in the required field bins, silos and grain handling equipment is seen as sunk cost in the business as it is necessary for other operations as well.

When Storage Did Not Add Value

SMF recognises that in some seasons, particularly where post-harvest prices rise strongly, longer-term storage could have improved price outcomes. Historical examples include seasons where wheat and barley prices increased materially after harvest.
However, these outcomes were not the primary driver of the business's storage strategy, which prioritises certainty of execution, freight efficiency, and cashflow over exposure to market timing risk.

Non-Financial and Operational Impacts

Beyond pricing outcomes, SMF identifies several operational benefits associated with storage:

- **Improved harvest speed:** 4/5
- **Reduced weather downgrade risk:** 3/5
- **Reduced freight volatility:** 5/5
- **Improved marketing flexibility:** 4/5
- **Reduced stress:** 4/5
- **Improved decision confidence:** 5/5

These impacts reflect the value of storage in simplifying harvest operations and reducing reliance on external delivery and freight systems.

Key Takeaways

For SMF, the value of on-farm grain storage lies in logistics and cost control, not in capturing postharvest price rises.
Storage:

- enables efficient ex-harvester sales;
- materially reduces freight and handling costs;
- preserves harvest momentum during busy periods; and
- supports predictable cashflow outcomes.

This case study demonstrates how logistics driven storage systems can deliver consistent value even when flat price timing plays little or no role in the storage decision.

Prime Family Farms, Eyre Peninsula (SA)

Background

Prime Family Farms operates a mixed farming enterprise on South Australia's Eyre Peninsula, cropping approximately 5,200 hectares each year. The business has invested in a combination of permanent shed storage and limited silo capacity, typically storing less than 25 per cent of total production post-harvest.

Rather than being driven by price speculation, the investment in on-farm storage was motivated by operational pressures at harvest, particularly grain moisture variability, freight constraints and the need to maintain harvest momentum when delivery options are limited.

"The main reason we started with it was harvest blending. The second was harvest logistics, just having flexibility when trucks or delivery options are tight."

Property snapshot

- Location: Eyre Peninsula, SA
- Enterprise: Mixed farming
- Cropped area: ~5,200 ha
- Storage system: Permanent shed storage with supplementary silos
- Proportion of crop stored: <25%

Why invest in on-farm storage?

At Prime Family Farms, on-farm grain storage plays a central role in managing harvest risk rather than chasing short-term price movements. The business identifies several overlapping benefits:

- Ability to blend grain parcels that would otherwise be undeliverable due to high moisture
- Improved harvest timeliness during periods of moisture variability
- Reduced dependence on freight availability at peak harvest
- Access to alternative domestic markets post-harvest

In some seasons, this has allowed Prime Family Farms to continue harvesting when other growers in the district have been forced to pause due to grain moisture constraints. "If on-farm storage were removed, the immediate impact would be felt operationally rather than commercially."

When storage added value

The 2024–25 season provides the clearest example of on-farm storage delivering tangible value.

What was stored:

- Barley: ~2,000 tonnes
- Wheat (low moisture): ~500 tonnes

Harvest window: November–December

Storage duration

- Wheat: approximately 30 days
- Barley: December through to May

Barley was stored and later sold into a domestic market, while low-moisture wheat was held to allow blending and continued harvesting during a constrained window.
Having dry grain already in the shed meant higher-moisture grain could be blended to specification, allowing harvest to continue at times when nearby operations had stopped.

"We stored barley and sold it domestically for a higher price. At the same time, we stored low-moisture wheat and were able to blend it - grain that we wouldn't normally have been able to harvest and deliver."

Importantly, the value of storage extended beyond price. Storage enabled continued harvesting and preserved harvest momentum during critical weather-affected periods. "It effectively gave us an extra week of harvesting that wouldn't have been deliverable at the time."

What would have happened without storage?

Without on-farm storage, options were limited:
• Barley would have been delivered directly into the bulk handling system for export markets
• Wheat harvesting would likely have been delayed, required access to a grain dryer, or forced stoppages until moisture levels improved

Market and cost considerations

Barley was sold at approximately $300-310/t ex farm. While not all cost components were formally calculated, several factors influenced the outcome:
• In-loading and out-loading costs were estimated at $2-4/t
• Carry payments of approximately $2/t per month helped offset interest and handling costs for barley
• Freight of around $32/t to port via a bulk handler was avoided

On-farm storage also provided blending capability that warehouse systems could not replicate.

When storage did not add value

In the 2025/26 season, low-moisture wheat was stored but ultimately did not require blending or delayed delivery. The grain sold for approximately $330/t, but storage costs were incurred without a clear benefit.

Longer-term reflection

Despite occasional seasons where storage does not deliver a clear financial uplift, Prime Family Farms reports that on-farm storage has consistently improved business resilience. The primary benefit is not flat price timing, but increased optionality and control.

Non-financial and additional operational benefits

Beyond harvest and marketing considerations, the shed provides flexibility outside the grain storage window. Once emptied, the concrete floor is used for machinery preparation, including staging and servicing the air seeder ahead of sowing, further increasing the value of the infrastructure.

Non-financial benefits identified by the business include:

• Improves harvest speed (4/5)
• Reduces weather downgrade risk (4/5)
• Reduces freight volatility (4/5)
• Improves marketing flexibility (4/5)
• Reduces stress (5/5)
• Improves decision confidence (5/5)

Key takeaways

• On-farm storage can allow harvest to continue when moisture prevents delivery elsewhere
• Blending low-moisture grain can preserve harvest momentum and reduce weather risk
• Multipurpose infrastructure increases overall return on investment
• Storage does not add value every season, but consistently improves risk management and control

For Prime Family Farms, the value of on-farm grain storage lies less in maximising price and more in maintaining control during high-pressure harvest periods.