

<u>DCAP 3 / FBRP Critical Temperature Thresholds of selected vegetable crops - June 2025, Long Lead-time forecasts final report.</u>

In addition to developing and delivering the **4 CTT Crop documents** with the 12 months of FBRP funding, the Project Team (2024-25) also continued to **develop and deliver Long Lead-time** (1, 2 & 3 month) **forecasts** for the Lockyer Valley and Granite Belt region.

Project Team.

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<u>Lockyer Valley and Granite Belt horticultural region Long Lead-time forecasts.</u> Forecast accuracy analysis as at June 30th 2025.

This accuracy assessment is based on all completed forecast months, January 2018 – June 30th 2025.

The **background and detail** of this horticultural production region focussed, Long Lead-time forecast work is detailed and reported in the DCAP **DAF#7 Project Final Report, completed in June 2021.**

The Long Lead-time LV and GB forecast – overview.

The Lockyer Valley (LV) and Granite Belt (GB) Long Lead-time forecasts cover a 3 month period, with 1, 2, and 3 month forecasts issued every 2 months. This ensures business managers have a 3 month outlook, that is <u>updated every 2 months</u>. This proceedure is carried out to ensure that each 3rd month forecast is updated after 2 months so as to maximise grower guidance for the coming 2 months while providing a longer, 3 month rolling forecast of maximum and minimum temperature and rainfall. Forward forecast data (rainfall and minimum and maximum temperature), is obtained directly from BoM, then interpreted by the Project Team using Tercile boundary data to produce a near the Mean, and above or below the Mean forecast, for each variable in both forecast regions.

This report summarises, analyses and comments on the overall accuracy and skill of all 90 monthly forecasts of maximum, minimum temperature and rainfall in both the Lockyer Valley and Granite Belt horticultural production regions. These forecasts commenced in January 2018.

(90 months x 3 paramaters x 2 locations = 540 individual forecast elements).

How is forecast accuracy assessed?

The Project Team has "ground-truthed" all 90 (1,2 & 3 month) Long Lead-time forecasts that have been issued for each DCAP Hort Forecast Region. This accuracy assessment was achieved by comparing each forecast with actual BoM data (**rainfall**, **minimum** and **maximum** temperature) that occurred in **each month** in the **Lockyer Valley** and **Granite Belt** regions.

This analysis of accuracy is **regularly presented** to, and **discussed** with, collaborating **business managers** as part of each **"face to face"** local forecast Workshop. In addition, every bi-monthly forecast document also assesses the accuracy of the rainfall and maximum and minimum temperature for the preceding month.

Is there sufficient skill (accuracy) for these forecasts to be useful?

Maximum temperature forecasts.

To date maximum temperature forecasts have been the most accurate and useful. The 1, 2 and 3 month lead-time maximum temperature Lockyer Valley forecasts to date have been 70%, 68% and 71% consistent and accurate, respectively. The 1, 2 and 3 month lead-time Granite Belt maximum temperature forecasts have been 63%, 60% and 56% consistent and accurate, respectively.

The maximum temperature forecasts for all lead-time periods for the Lockyer Valley have been more accurate that those for the Granite Belt. The monthly maximum temperature forecast for the Granite Belt has not been as accurate, skillful or useful for Granite Belt business managers as when compared to the Lockyer Valley monthly forecasts. The forecast for the 3rd month in the Granite Belt has been the least accurate, while the same forecast in the Lockyer Valley has been useful. This demonstrates the reason the Project Team develops and issues bi-monthly forecasts. While the 3rd month forecast of each 3 month Long Lead-time forecast provides business managers with some useful guidance, the subsequent bi-monthly forecast allows farm and supply chain business managers to re-assess plans and temperature expectations on a rolling 2 month basis.

Maximum temperature forecast accuracy for the Lockyer Valley for all lead-times - 1, 2 & 3 months, has been useful to our collaborating business managers. In the Granite Belt, the 1 month Long Lead-time forecast has been of some use to our collaborating business managers, while $\underline{the 2^{nd} \& 3^{rd} month}$ of the Long Lead-time forecast has shown limited skill and is not useful.

The Long Lead-time (1,2, & 3 month) maximum temperature forecasts have provided useful guidance and information to our collaborating supply chain and farm business managers in the Lockyer Valley. The Granite Belt maximum temperature forecast at the 1 month lead time provided some limited guidance, while the 2nd and 3rd month forecast showed no skill.

Minimum temperature forecasts.

Minimum temperature forecast accuracy for the Lockyer Valley at all lead-times - 1, 2 & 3 months, have been 49%, 49% and 51% consistent respectively. The accuracy of the Granite Belt minimum temperaturte forecast at all lead-times - 1, 2 and 3 months, has been 56%, 57% and 55% consistent respectively.

Though a number of individual monthly minimum temperature forecasts in both production regions have been correct (consistent), overall they have poor skill (accuracy). The Long Lead-time (1, 2, & 3 month) minimum temperature forecasts have not provided useful guidance or information to our collaborating supply chain and farm business managers in either the Granite Belt of Lockyer Valley growing regions.

The minimum temperature Long Lead-time forecast in both regions has not been useful to-date.

Rainfall forecasts.

Rainfall forecast accuracy at 1,2, and 3 months lead-time for the Lockyer Valley has been 60%, 51% and 56% consistent respectively, based on the 90 Long Lead-time forecasts the DCAP team has produced to-date. Rainfall forecast accuracy at 1, 2, and 3 months for the Granite Belt forecast region has been 63%, 59% and 53% consistent respectively, based on the 90 Long lead-timeDCAP forecasts.

The 1 month lead time rainfall forecast in both the Lockyer Valley and Granite Belt has been somewhat useful to-date, while the 2 and 3 month Long lead-timeforecasts in both regions have not been of use to-date.

The **1 month lead** time rainfall forecast has provided a <u>small level of guidance</u> to business managers in both regions ($\approx 60-63$ % accurate).

Intensive high cost horticultural farming businesses rely on stored irrigation water (underground or dams) and it is this historical water surity that underpins current production locations and drives longer term business confidence and planning.

What forecast accuracy (required for an Ag Business Manager to act) is likely to be used by a collaborating business manager?

Industry feedback indicates that a forecast accuracy approaching 70% is needed for business managers to have confidence in, and <u>act decisively</u>, on a forecast.

A proven forecast accuracy (skill) level of >65% will be <u>factored into</u> the business managers thinking and combined with <u>other knowledge</u> and <u>experience</u> to inform business decisions and plans. Forecasts of lower skill (<60%) provide little or no additional guidance.

Communicating the accuracy of DCAP experimental forecasts.

Every two months, an experimental forecast for each region is sent to all collaborating DCAP/FBRP farm and supply chain business managers. Each forecast contains a **detailed review of the previous forecast period's accuracy** (max, min and rainfall), allowing our project collaborators to assess the skill and usefullness of the experimental forecast information. During face to face, start and end of season industry meetings in each forecast region, the project team presents a full review of the accuracy of all Long lead-time forecasts (min, max and rainfall) to our collaborating business managers. This ensures that all the supply chain and vegetable business managers have the opportunity to assess the overall accuracy of maximinum, minimum and rainfall forecasts, allowing them to develop a well informed understanding and opinion of the skill and usefullness of the DCAP Long lead-timeforecasts.

A **full summary** and analysis of the accuracy and skill of **all DCAP** Long lead-time from January 2018 to June 30th 2025 is included in Appendix 1 of this DCAP/FBRP Final Report.

Appendix 1 provides details of the experimental forecast analysis, and outlines the accuracy of all forecasts for both horticultural forecast regions. Ongoing analysis shows that the accuracy and skill of each forecast paramater varies with location and month.

The maximum temperature forecasts for the Lockyer Valley (1, 2 & 3 month) and Granite Belt (1 month) have proven to be the most accurate and therefore a useful Long Lead-time forecast. The overall accuracy of all ninety, 1, 2 and 3 month lead-time maximum temperature forecasts for both the Lockyer Valley and Granite Belt are summarised above and a detailed analysis Table is included below.









There is sufficient accuracy in the Long Lead-time maximum temperature forecasts Lockyer Valley (1,2 & 3 month), to be useful to business managers, while in the Granite Belt the 1 month forecasts shows some limited skill.

The Long Lead-time **1 month rainfall** forecast has proven <u>moderately useful</u> in both forecast regions, while the skill and accuracy of the **minimum temperature** forecast has been <u>low</u>, and therefore not useful, in both production regions.

Long Lead-time maximum temperature forecasting was the planned focus of this project (as per the original 2018 project proposal), however growers and supply chain managers continue to show interest in Long Lead-time minimum temperature and rainfall forecasts, so we have continued to provide and, "ground truth" these additional forecasts, even when the accuracy to-date has not been sufficient for these additional forecasts to be considered useful.

Note. This ongoing accuracy checking has been a useful exercise, as the number of forecasts has continued to increase, the skill of maximum temperature forecasts has remained high, while the over-all skill of minimum temperature forecasts (initially skillful) has decreased in the last 48 months. Conversly the accuracy and skill of the rainfall forecasts has firmed, with the 1 month lead time forecast now giving some low level of guidance.

Long Lead-time (1,2 & 3 month) forecasts and business managers decisions – a recap of past feedback.

The 2021 Final Report provdided numerous examples of how well received this locally focussed forecasting work has been, and how it has impacted and influenced business managers decisions (example below).



Figure 1. Emailed business feedback (2021) demonstrating an example of the financial benefits that have been realised by some businesses through involvement in this DCAP forecasts project work since its inception.

Recent 2025 feedback

Collaborationg business managers continue to support and engage with this Long Lead-time forecast work. Comments and feedback gathered during recent face to face workshops indicates continuing interest and increasing "industry trust" of this work - especially the Maximum temperature forecasts.

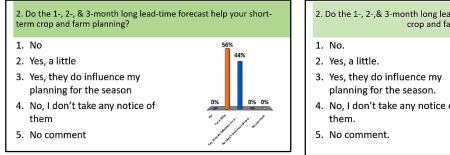




Figure 2. Electronic anonymous feedback at Lockyer Valley workshop in <u>June 2025</u> (left) and during the <u>June 2025</u> Granite Belt workshop (right).

Anonymous survey responses gathered at the recent June 12th 2025 (Lockyer Valley) and June 19th 2025 (Granite Belt) face to face interactive workshops, demonstrate that the majority of collaborating vegetable business and supply chain managers consider the DCAP/FBRP experimental forecast information helps them make more informed management decisions.

Producers and supply chain managers have been influenced by the bi-monthly DCAP experimental forecast information.

In June 2025, what did the Lockyer Valley and Granite Belt supply chain and business managers think of the current DCAP/FBRP Horticulture project. Is it assisting their business planning?

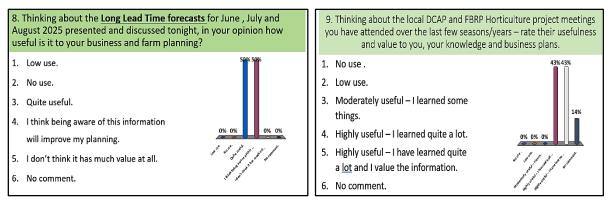


Figure 3. Lockyer Valley (left) and Granite Belt (right) business managers annonymous survey responses June 2025.

Horticultural business managers are learning and adjusting their business plans!

DCAP Heatwave Advisories

Throughout the spring and summer of **2024 & 2025** the DCAP/FBRP Project continued to issue LV and GB Heatwave Advisories. These advisories were emailed to business managers along with a seperate SMS alert. This initiative is valued by our collaborators, providing them with detailed temperature guidance as well as a map of forecast Heatwaves at their growing location.

This extra "Heatwave Advisory" work was continued because business managers told the Project Team they appreciated and valued the specific, targeted information. Links (and messaging) in each **Heatwave Adviory**, drive business managers to **BoM's Heatwave Service** and **MetEye** site, both important sources of quality, location specific weather information and **daily updates**.

In the first season (2018) of our local face to face forecast forums with both Lockyer Valley and Granite Belt collaborators, it became apparent that over 70% of these business managers were not aware of BoM's publicly available and very useful Heatwave Service. The Bureau's heatwave service has published 7-day heatwave severity maps on the internet since 2014 (Bureau of Meteorology, 2014).

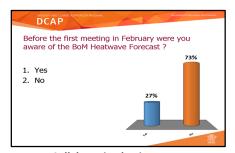


Figure 4. Collaborating business managers were mostly unaware of the BoM Heatwave service until DCAP DAF#7 project staff highlighted and promoted it.

In November 2018 we took the initiative to utilise and promote this operational BoM Heatwave Service as one of several additional sources of information to assist our collaborators to make "better management decisions". Project staff continued to produce locally focussed Heatwave Advisories throughout the last 12 months of the DCAP/FBRP funding period (2024-2025).

This initiative has continued to be a **resounding success** and the project team developed and issued an additional **7 Heatwave Advisory** warnings to collaborating businesses during the late spring and summer of **2024 and 2025**. The Heatwave Advisories are emailed directly to all our potentially affected collaborators. These Heatwave Advisories contain the BoM Heatwave Service maps, a link to BoM's Heatwave Service and a detailed **7** day forecast.

What do Lockyer Valley and Granite Belt business managers think of the Heatwave Advisories?

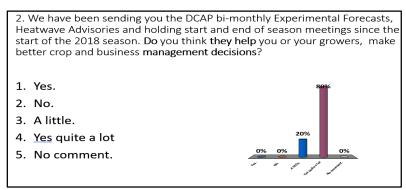


Figure 5. Business managers used the information in the 2024-25 Heatwave Advisories to enhance farm planning and decision making.

Collaborating business managers now actively seek out and use BoM's Heatwave Service website over the summer season. This awareness and additional knowledge allows them to better prepare and plan for extreme temperature events (heatwaves) that will impact their production location.

An example of a recent Heatwave Advisory can be found in Appendix 2.

Industry leaders continue to utilise and support the DCAP/FBRP Horticulture Long Lead-time forecast work and information.

The DCAP Long Lead-time forecast work and local face to face educational forecast forums are highly valued.

Collaborating business managers at their respective June 2025 local, face to face forecast and critical temperature thresholds update sessions, indicated that the forecasts helped to improve their business planning. The FBRP work has been informative and useful.

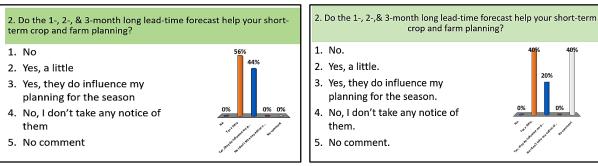


Figure 6. Collaborating business manager anonymous feedback from our final June 12th (Lockyer Valley) and June 19th (Granite Belt) 2025 DCAP / FBRP face to face industry updates.

DCAP/FBRP Horticulture industry collaboratinhg business managers value and take notice of the DCAP Long Lead-time forecasts. Business managers have gained confidence in the location specific information, valuing and understanding the science based information. Verbal workshop feedback and survey results (above) show they review and actively consider Long Lead-time forecasts as well as other relevant project information when preparing business plans and making management decisions.

The locally focussed, horticulture specific information, combined with the group learning during face to face discussion sessions has helped collaborating business managers to be better informed. This improved knowledge, awarness and skills base combines to enhance their business planning and business decisions.











Appendix 1.

Assessing the accuracy (skill) of all current DCAP experimental Long Lead-time forecasts.

For forecasts to be useful, they need to be accurate – i.e. the forecast needs to be a very good representation of a future reality.

Accuracy has been assessed for forecasts issued since 2018. The sample size for determining the accuracy ranges from n=90 to n=87, depending on the availability of the forecasts. It is very important to note that this sample size is too small (and climatically too short) from which to draw firm conclusions about the accuracy and utility of the forecasts which are being used in this project, although it does give an indication of the performance skill and usefulness since these specific forecasts began in January 2018.

Forecast accuracy changes from season-to-season (here all seasons are assessed together) and changes from year-to-year (e.g. forecast accuracy is often higher in strong El Nino Southern Oscillation – ENSO - years). To properly assess the overall accuracy of seasonal forecasts, a long record (typically 30-years) is required to obtain stable statistics, show how accuracy varies with time of year and to include an adequate number of cases of the low frequency climate drivers that affect the Australian climate, like ENSO.

For this project, the work team (DC, PD) interpret a forecast as being "Above the Mean", "Below the Mean" or "Near the Mean". To assess the usefulness of the DCAP forecasts, an accurate (useful for making a decision) forecast will therefore be one where the actual parameter (Temperature [Max or Min], or Rainfall) falls into one these three categories.

To understand the accuracy of the forecasts which have been made and conveyed to collaborating growers and other supply chain participants in the Lockyer Valley and Granite Belt, a number of tables have been constructed to compare and assess each Long Lead-time forecast with the actual outcome.

The real-time Long Lead-time forecasts for the upcoming months were assessed once each week (even though they are updated daily on the BoM website). Therefore, there are four (sometimes 5) forecast start dates (issued 1 week apart) assessed for a particular target month and lead-time. For example, forecasts issued on the 7th, 14th, 21^{1st} and 28th November 2020 were assessed for December 2020 (1-month lead); January 2021 (2-months lead) and February 2021 (3-months lead).

A Long Lead-time forecast is preferred so that the most appropriate and timely **Management Decisions** can be **made**. The following Maximum, Minimum and Rainfall forecast accuracy assessment tables detail and assess each forecast for lead times of 1, 2 & 3 months, with their corresponding **actual outcomes** in each of the categories described above.

June 2025 Forecast Accuracy Assessment

The project team uses a statistical analysis to assess forecast accuracy and categorise forecast results. The forecast accuracy tables presented below, and results summarised above by the Project Team, uses a statistical analysis to assess forecast accuracy. This statistically based system uses a precise calculated range around the mean (Tercile Boundaries) to categorise accuracy. In order to better reflect Long Lead-time forecast results that are "almost correct", we use the term near consistent.

The following categories and terminology are used to assess forecast accuracy of all parameters (max, min temperature and rainfall).

Consistent forecast [C] = the forecast was **correct**.

Inconsistent forecast [Ic] = the forecast was incorrect.

Near Consistent forecast [Nc] = the experimental forecast was very close to what actually occurred.

DCAP Long Lead-time forecast accuracy analysis and review – January 2018 to June 2025

Maximum Temperature Forecasts – (Tables 1 & 2)

The Tables below contain the 1, 2 & 3-month forecasts for each month and year, and then lists the temperature Tercile [near, above or below the mean] that **actual**ly occurred in each month. A statistical analysis comparing the historical monthly mean to the Long Lead-time forecast and the actual monthly mean that occurred is used to categorise each forecasts' accuracy in the Table below.

Lockyer Valley Maximum Temperature Forecasts.

Table 1. <u>Lockyer Valley Maximum Temperature Forecasts</u> for the Months from Jan 2018 to June 2025, with corresponding Actual Outcome.

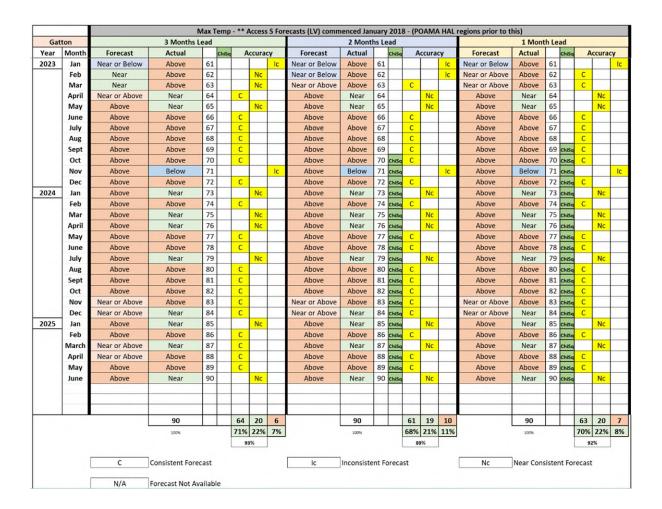
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	April May June July Aug	Near Near Below Below	Near Near Below Near	53 54 55 56		C	Nc			Near Below Below	Near Below Near	55 56		С	Nc			Near or Below Near Near or Below	Near Below Near	54 55 56		С	Nc	











For the Lockyer Valley, <u>Maximum Temperature</u> forecast accuracy has been **70% Consistent** and accurate **for the 1-month lead time** for the 90 forecasts available so far, and the number of inconsistent forecasts is quite small, averaging 9%. The **2-month** and **3-month lead time** forecasts have forecast accuracy of **68% Consistent** and **71% Consistent** respectively, so have been skillful todate.

An accurate Long Lead-time forecast is useful to growers and supply chain participants.

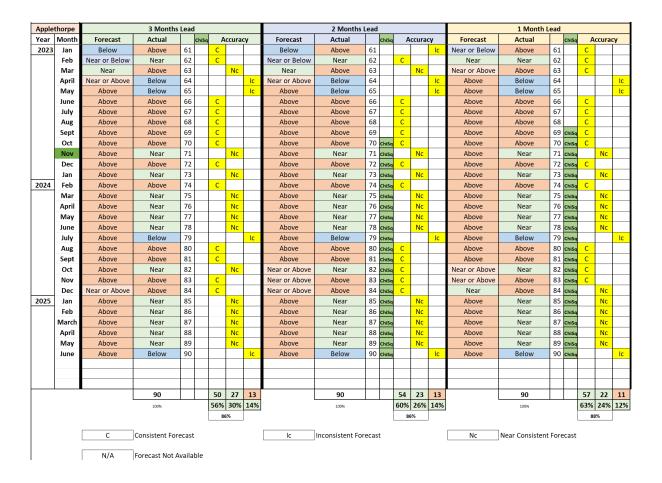
Note that the number of DCAP/FBRP Long Lead-time forecasts is still relatively small (90 in total), so some caution should be excercised before drawing any firm conclusions about forecast accuracy. However based on the current data and results, the Long Lead-time maximum temperature forecast for the Lockyer Valley does provide useful guidance for both crop and farm business planning.



Granite Belt Maximum Temperature Forecasts.

Table 2. <u>Granite Belt Maximum Temperature Forecasts</u> for the Months from Jan 2018 to June 2025, with corresponding Actual Outcome.

Applet	thorpe	П		3 Month	s Lead	d				Г		2 Months	s Lead	i					1 Month	Lead				
Year	Month		Forecast	Actual		ChiS	Α	ccura	су		Forecast	Actual		ChiS	Α	ccura	су	Forecast	Actual		ChiS	Α	ccura	су
2018	Jan**		Mixed	Above	1				Ic	L	Mixed	Above	1				Ic	Above	Above	1		С		
	Feb**		Near or Above	Above	2	Ш	С			L	Near or Above	Above	2		С			Above	Above	2		С		
	Mar**		Above	Near	3	Ш		Nc		L	Near or Above	Near	3		С			Above	Near	3			Nc	
	Apr		Above	Above	4	Ш	С			L	Above	Above	4		С			Above	Above	4		С	<u> </u>	
	May		Mixed	Above	5	Ш		<u> </u>	lc	L	Near or Above	Above	5	L	С			Above	Above	5		С	<u> </u>	
	Jun		Above	Above	6	Н	С			L	Above	Above	6		С			N/A	Above	6	▙	_	<u> </u>	lc
	Jul		Mixed	Above	7	Н		-	Ic	ŀ	N/A	Above	7	⊢	-	<u> </u>	lc	Above	Above	7	⊢	С	├-	⊢
	Aug		N/A	Above	8	H	С	<u> </u>	Ic	H	Above	Above	8	\vdash	С	-	\vdash	Above	Above	8	┢	С	<u> — </u>	⊢
	Sep Oct		Above Above	Above Below	10	H	L		Ic	ł	Above Above	Above Below	9	H	С		lc	Near or Above Near or Above	Above Below	9	-	С	⊢	lo.
	Nov		Near or Above	Near	11	H	С		IL	H	Near or Above	Near	11		С		IL.	Near or Above	Near	11	\vdash	С	\vdash	IL.
	Dec		Above	Above	12	H	c			H	Above	Above	12	H	С			Near or Above	Above	12	\vdash	С		\vdash
2019	Jan		Above	Above	13	H	c			t	Above	Above	13	H	С			Above	Above	13	\vdash	С		\vdash
2015	Feb		Above	Above	14	H	c			t	Above	Above	14	H	С			Above	Above	14	\vdash	С		\vdash
	Mar		Above	Above	15	H	c			t	Above	Above	15	H	С			Above	Above	15	\vdash	c		\vdash
	April		Above	Above	16	П	c			t	Above	Above	16	T	С			Above	Above	16	T	c		\vdash
	May		Above	Above	17	П	С	l		t	Above	Above	17		С			Above	Above	17	T	С		
	June		Above	Above	18	П	С			t	Above	Above	18		С	l		Above	Above	18	T	С		
	July		Above	Above	19		С			ı	Above	Above	19		С			Above	Above	19		С		
	Aug		Above	Above	20		С			ı	Above	Above	20		С			Above	Above	20		С		
	Sept		Above	Above	21	П	С			Г	Above	Above	21		С			Above	Above	21		С		
	Oct		Above	Above	22		С			L	Above	Above	22		С			Above	Above	22		С		
	Nov		Above	Above	23	Ш	С			L	Above	Above	23		С			Above	Above	23	_	С	<u> </u>	
ш	Dec		Above	Above	24	Ш	С			L	Above	Above	24		С			Above	Above	24		С	<u> </u>	
2020	Jan		Above	Above	25		С			L	Above	Above	25		С			Above	Above	25		С		
	Feb		Above	Near	26	Ш		Nc		L	Above	Near	26			Nc		Above	Near	26			Nc	
	Mar		Above	Near	27	Ш		Nc		L	Above	Near	27			Nc		Above	Near	27			Nc	
	April		Above	Above	28	ш	С	_		L	Above	Above	28		С			Above	Above	28	_	С	<u> </u>	
	May		Above	Below	29	Н	_	<u> </u>	lc	L	Above	Below	29	⊢	-	_	Ic	Above	Below	29	\vdash	_	<u> </u>	lc
	June		Above	Above Near	30	H	С	Nc		₽	Above Near or Above	Above	30	\vdash	C	-		Above	Above	30	\vdash	С	No	\vdash
	July Aug		Above Climatology	Near	32	H	С	INC	_	ł	Near or Above Near or Above	Near Near	32	┢	С	-	\vdash	Above Above	Near Near	32	⊢	\vdash	No	
	Sept		Near or Above	Near	33	H	С			ł	Near or Above	Near	33		С			Near or Above	Near	33	┢	C	INC	
	Oct		Climatology	Above	34	H	-	Nc		t	Below	Above	34				Ic	Near	Above	34		-	Nc	
	Nov		Below	Above	35	H		140	Ic	t	Below	Above	35	H		<u> </u>	Ic	Below	Above	35	H			Ic
	Dec		Climatology	Near	36	П	С			t	Near	Near	36		С			Near or Above	Near	36		С		
2021	Jan	7		Below	37	〒		Nc		Ħ	Near or Above	Below	37	$\overline{}$			Ic	Near	Below	37	_		Nc	7
2021	Feb	-	Climatology Near	Near	38	_	С	INC		H	Near	Near	38	\dashv	С	_	IL	Near	Near	38	\dashv	С	INC	\dashv
	Mar	-	Near	Below	39			Nc		-	Climatology	Below	39	_	-	Nc		Near or Above	Below	39	_	-	-	Ic
	April	-	Near or Above	Below	40	+	\dashv	IVC	lc	Н	Climatology	Below	40	\dashv		Nc		Near or Below	Below	40	_	С	-	10
	May	-	Near	Below	41	+		Nc	10	Н	Climatology	Below	41	\dashv	_	Nc	-	Near or Above	Below	41	_	-	\dashv	Ic
-	June	-	Near or Above	Below	42	\dashv		140	lc	Н	Above	Below	42	\dashv	\neg	IVC	lc	Above	Below	42	\dashv	\dashv	\dashv	Ic
ŀ	July	-	Near or Above	Near	43		С	_	,,,		Near or Above	Near	43	1	С		.0	Near or Below	Near	43	_	С	一	
ŀ	Aug	1	Climatology	Above	44	1		Nc			Climatology	Above	44	\dashv		Nc	_f	Near or Above	Above	44	_	С	\dashv	
ŀ	Sept	1	Near or Below	Near	45		С				Near or Below	Near	45	\dashv	С			Near or Above	Near	45	_	C	\dashv	-1
	Oct	1	Below	Near	46	1		Nc		Г	Below	Near	46	1		Nc		Below	Near	46	┪		Nc	-1
ŀ	Nov	1	Below	Below	47		С			Г	Below	Below	47	_	С			Below	Below	47	_	С		1
ŀ	Dec	1	Near or Below	Below	48	_	c	\neg			Near	Below	48	7		Nc	ı	Below	Below	48	_	С	\dashv	
2022	Jan	1	Near	Below	49	1		Nc		l	Near	Below	49	\dashv		Nc		Near or Below	Below	49	_	С	\dashv	7
	Feb		Near	Below	50	\top		Nc			Near or Below	Below	50	_	С			Near	Below	50	1		Nc	7
İ	Mar	1	Near	Near	51		С				Near	Near	51	1	С		T	Near	Near	51		С	\neg	
İ	April	1	Near	Near	52		С	\dashv			Near	Near	52	1	С		T	Near	Near	52	7	С	\dashv	
ŀ	May	1	Near	Below	53	T		Nc			Near	Below	53	┪		Nc	T	Near	Below	53	┪		Nc	
	June	1	Near or Above	Near	54		С				Near or Above	Near	54	1	С		T	Near or Below	Near	54		С		
	July	1	Near or Below	Below	55		С	\neg			Below	Below	55		С	\neg		Near or Below	Below	55		С	\neg	
İ	Aug	1	Below	Near	56	1		Nc			Below	Near	56	T		Nc		Near or Below	Near	56	_	С	╛	
İ	Sept	1	Below	Below	57		С				Below	Below	57	1	С			Below	Below	57		С	寸	
İ	Oct		Below	Below	58		С	一			Below	Below	58	T	С			Below	Below	58		С	ヿ	
ı	Nov	1	Below	Below	59		С				Below	Below	59	T	С		T	Below	Below	59		С	一	
İ	Dec		Below	Below	60		С				Below	Below	60	7	С		T	Below	Below	60	T	С	ヿ	
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For the **Granite Belt**, <u>Maximum Temperature</u> forecast accuracy has been **63%**, **60%** and **56% Consistent** for lead times of **1**, **2** and **3** months respectively for the 90 forecasts available so far.

The number of inconsistent forecasts is small, increasing the usefulness of the Long Lead-time forecasts for growers and supply chain participants. The 2 & 3 month Granite Belt long lead-time forecasts are not as accurate (60% & 56%) as for the Lockyer Valley (68% & 71%). The Granite Belt 1 month lead-time forecast has a forecast accuracy of 63%, so is of some use to Granite Belt supply chain and farm business managers.

Conclusion (Maximum Temperature).

Maximum temperature forecasts for 1, 2 and 3 month lead-times proved to be accurate and useful for the Lockyer Valley. In the Granite Belt forecast region, the 1 month lead time forecast was of some use while the 2 and 3 month forecasts have had low (poor) skill. The 3rd month Long Lead-time forecast for the Lockyer Valley shows considerable accuracy and skill in the 90 monthly forecasts to-date, guiding short to mid-term business decisions and facilitating improved management planning.

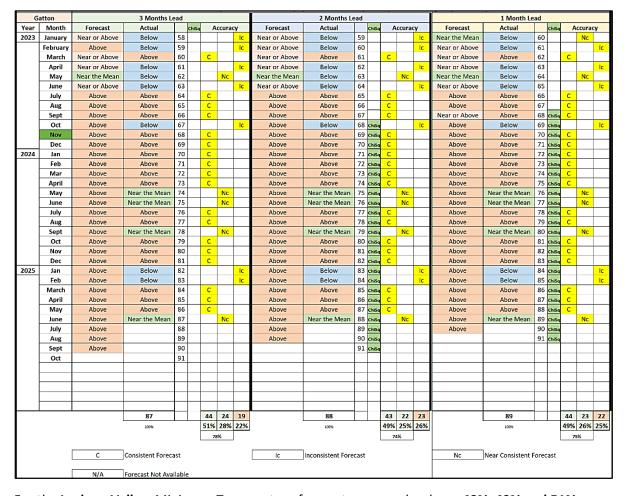
For the **Granite Belt**, the shorter **1 month** lead-time forecasts have been **moderately accurate**, and therefore of some use to farm planning. The 2nd and **3rd months of the Long Lead-time** forecasts provides **little guidance** for growers and supply chain participants **in the Granite Belt** region, **highlighting the** need for and **value of** the **regular bi-monthly forecast updates**.

Minimum Temperature Forecasts – (Tables 3 and 4).

Lockyer Valley Minimum Temperature Forecasts.

Table 3. <u>Lockyer Valley Minimum Temperature Forecasts</u> for the Months from Jan 2018 to June 2025, with corresponding Actual Outcome.

(Gatton	Т		3 Months Le	ead					П		2 Months Le	ead					П		1 Month Le	ad				
Year	Month		Forecast	Actual	Ch	iS:	A	cura	cy		Forecast	Actual	(ChiS	A	cura	у		Forecast	Actual	(ChiS	Ao	curacy	y
2018	Jan**			Below		\perp						Below		Ш				Ц		Below					
	Feb**			Below	_	4						Below		Ш				Ц	Above	Below	1			_	lc
	Mar**			Above	_	4					Above	Above	1	Ш	С		_	Н	Above	Above	2		С	-	_
	Apr	Н	Above	Below	1	4			Ic		Above	Below	2	Н			lc	Н	Above	Below	3			_	IC
	May		Near or Above	Near the Mean	2	+	С			Н	Near or Above	Near the Mean	3		С		-	Н	Above	Near the Mean	4			Nc	1.
	Jun Jul	Н	Near or Above Near or Above	Below Near the Mean	4	+	С		lc	Н	Above N/A	Below Near the Mean	5	Н			Ic Ic	Н	N/A Near the Mean	Below Near the Mean	5		С	-	lc
	Aug		N/A	Below	5	+	C		lc	Н	Near or Above	Below	6				Ic	Н	Mixed	Below	7		·	_	lc
	Sep		Near or Above	Near the Mean	6	+	С		10		Mixed	Near the Mean	7	Н			Ic	Н	Near or Above	Near the Mean	8		С	_	10
	Oct		Above	Above	7	1	С				Above	Above	8	Н	С			Н	Near or Above	Above	9		С	$\overline{}$	_
	Nov		Above	Below	8	T			lc		Near or Above	Below	9	П			lc	Н	Near or Above	Below	10				Ic
	Dec		Above	Below	9	T			lc	П	Near or Above	Below	10				lc	П	Above	Below	11				Ic
2019	Jan		Above	Below	10	T			lc		Above	Below	11				lc	П	Above	Below	12				Ic
	Feb		Above	Near the Mean	11	T		Nc			Above	Near the Mean	12			Nc		П	Above	Near the Mean	13			Nc	
	Mar		Above	Above	12		С				Above	Above	13		С				Above	Above	14		С		
	Apr		Above	Near the Mean	13			Nc			Above	Near the Mean	14			Nc			Above	Near the Mean	15			Nc	
	May		Above	Near the Mean	14	4		Nc			Above	Near the Mean	15	Ш		Nc		Ц	Above	Near the Mean	16			Nc	
	June		Above	Near the Mean	15	4		Nc		Ы	Above	Near the Mean	16	Ш		Nc		Ц	Near or Above	Near the Mean	17		С	\dashv	_
	July		Above	Above	16	4	С			Н	Above	Above	17	Н	С			Н	Above	Above	18	H	С	\dashv	
	August		Above	Above Neartha Maan	17	+	С	No		Н	Above	Above Near the Maan	18	Н	С	No		Н	Above	Above Neartha Maan	19	H	С	No	[
	September		Above Near or Above	Near the Mean	18 19	+		Nc	lo.	Н	Above	Near the Mean	19	Н		Nc	le.	Н	Above	Near the Mean	20 21	\vdash		Nc	le.
	October November		Near or Above Above	Below Near the Mean	20	+		Nc	lc	Н	Above Above	Below Near the Mean	20 21	Н		Nc	lc	Н	Above Above	Below Near the Mean	22	\vdash		Nc	lc
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2020	December		Above	Near the Mean	22	+	С	Nc		Н	Above	Near the Mean	23		С	INC		Н	Above	Near the Mean	24		С	Nc	-1
2020	January February		Above Above	Above Above	23	+	С			Н	Above Above	Above Above	24	Н	С		_	Н	Above Above	Above Above	25		С	\rightarrow	-
	March		Above	Near the Mean	24	+	C	Nc		Н	Above	Near the Mean	25	Н	C	Nc		Н	Above	Near the Mean	26		C	Nc	-I
	April		Above	Near the Mean	25	+		Nc			Above	Near the Mean	26	Н		Nc		Н	Above	Near the Mean	27			Nc	-
	May		Above	Near the Mean	26	+		Nc			Above	Near the Mean	27	Н		Nc		Н	Above	Near the Mean	28			Nc	_
	June		Above	Above	27	1	С				Above	Above	28	П	С			Н	Above	Above	29		С	-	-1
	July		Above	Above	28	1	С				Above	Above	29		С			П	Above	Above	30		С	\neg	\neg
	August		Near or Above	Near the Mean	29	T	С				Above	Near the Mean	30			Nc		П	Above	Near the Mean	31			Nc	
	September		Above	Above	30		С				Above	Above	31		С				Above	Above	32		С		
	October		Above	Near the Mean	31			Nc			Above	Near the Mean	32			Nc			Above	Near the Mean	33			Nc	
	November		Climatology	Below	32			Nc			Above	Below	33				lc		Above	Below	34				Ic
	December		Above	Near the Mean	33			Nc			Above	Near the Mean	34			Nc			Above	Near the Mean	35			Nc	
2021	January		Above	Below	34	Ť			lc	Г	Above	Below	35	Г			lc	Г	Above	Below	36	Г			Ic
	February		Above	Near the Mean	35	7		Nc		Г	Above	Near the Mean	36	Н		Nc		Г	Above	Near the Mean	_	T		Nc	
	March		Above	Above	36	1	С			г	Above	Above	37	H	С			Н	Above	Above	38	H	С		
	April		Above	Below	37	+	_		lc	Н	Above	Below	38	\vdash	_		lc	Н	Near or Above	Below	39	H	Ť		Ic
	May	-	Near or Above	Near the Mean	38	+	С		10		Near the Mean	Near the Mean	39		С		10	H	Near the Mean	Near the Mean	40		С		10
	June	-	Above	Near the Mean	39	┥		Nc		H	Above	Near the Mean	40	\vdash		Nc		H	Above	Near the Mean	41	\vdash		Nc	-
	July	-	Above	Above	40	+	С	TWC			Above	Above	41	\vdash	С	TVC		Н	Above	Above	42	\vdash	С	INC	-
				Above	41	+	C			H		Above	42	\vdash	С			H		Above	43	\vdash	С	\vdash	-
	August	-	Above		-	\dashv	C	NI-		H	Above		-	\vdash	C	NI-		H	Above		-	\vdash	U	N-	-
	September	-	Above	Near the Mean	42	4	_	Nc		L	Above	Near the Mean	43	\vdash	_	Nc		L	Above	Near the Mean	44	-		Nc	-
	October	-	Above	Above	43	4	С			L	Above	Above	44	\vdash	С			L	Above	Above	45	\vdash	С	\square	\blacksquare
	November	_	Near the Mean	Near the Mean	44	4	С			L	Near the Mean	Near the Mean	45	L	С			L	Near or Above	Near the Mean	46	_	С		
	December		Above	Below	45	Ц			lc	L	Above	Below	46	L			lc	L	Near or Above	Below	47	\perp			lc
2022	January		Above	Near the Mean	46	╝		Nc		L	Above	Near the Mean	47	L		Nc		L	Above	Near the Mean	48			Nc	
	February		Above	Below	47	T			lc		Above	Below	48				lc		Above	Below	49				lc
	March		Above	Above	48	7	С				Above	Above	49		С				Above	Above	50		С		
	April		Above	Above	49	7	С			ı	Above	Above	50	Π	С			Г	Above	Above	51	-	С	П	
	May		Above	Above	50	+	C			r	Above	Above	51		С			r	Above	Above	52	-	С	\vdash	\Box
	June		Above	Below	51	+			lc	H	Above	Below	52	\vdash	_		Ic	H	Above	Below	53	\vdash			lc
		-1			52	\dashv	С		10	H			53	\vdash	С		10	H		Above	54	\vdash	С	\vdash	10
	July	-	Above	Above	_	+	_			H	Above	Above	_	\vdash	_			H	Above		-	\vdash	_	\vdash	\vdash
	Aug	-	Above	Above	53	4	С				Above	Above	54	\vdash	С			L	Above	Above	55		С	\vdash	-
	September	_	Near or Above	Above	54	4	С			L	Above	Above	55	\vdash	С			L	Near or Above	Above	56	1	С	\square	
	October	_	Near the Mean	Above	55	4		Nc		L	Near or Below	Above	56	\vdash	L		lc	L	Near or Below	Above	57	_			lc
	November		Near or Below	Below	56		С			L	Near or Below	Below	57		С			L	Below	Below	58	-	С		
	December		Near the Mean	Below	57	$ \rfloor $		Nc		L	Near or Below	Below	58	L	С			L	Near or Above	Below	59	L			lc
		•				_				_								_				•		_	



For the Lockyer Valley, Minimum Temperature forecast accuracy has been 49%, 49% and 51% Consistent (accurate) for lead-times of 1, 2 and 3 months respectively, for the 87 to 89 forecasts assessed to the end of June 2025. The number of near consistent (Nc) and Inconsistent (Ic) forecasts in all monthly forecast periods is similar, underlining the lack of forecast skill. Therefore, these minimum temperature forecasts have not been useful for growers and supply chain managers.









Granite Belt Minimum Temperature Forecasts.

Table 4. <u>Granite Belt Minimum Temperature Forecasts</u> for the Months from Jan 2018 to June 2025, with corresponding Actual Outcome (where available).

Name	Ap	plethorpe			3 Months L	ead							2 Months Le	ead							1 Month Le	ad				
Mart	-			Forecast			ChiS	Α	ccura	су	L	Forecast	Actual		ChiS	Α	ccura	су		Forecast	Actual	CI	hiS	Accu	ıracy	
Market	2018				Near the Mean						L		Near the Mean								Near the Mean		\perp			
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Above		November	∐				LÌ	С			L	Near the Mean	Near the Mean	45	L	С			LÌ	Near or Above	Near the Mean	46	C		╝	
February Above Below 47	LI	December		Near or Above	Near the Mean	45	LĪ	С			L	Near or Above	Near the Mean	46	Lī	С				Near the Mean	Near the Mean	47	(
March Above Above 48 C Above Above Above 49 C Near or Above Above 50 C April Above Above 49 C Above Above 50 C Above Above 51 C May Near or Above Above 50 C Near or Above Above 51 C Above Above 52 C June Above Below 51 Ic Above Below 52 Ic Above Below 53 Ic July Above Near the Mean 52 Nc Above Near the Mean 53 Nc Above Near the Mean 54 Nc Aug Above Above Above Above Above Above 54 C Above Above 55 C September Near or Above Above Above Above Above 55 C Near or Above Above 56 C October Near or Above Above 55 C Near or Below Below 56 C November Near or Below Below 56	2022	January		Above	Above	46		С				Above	Above	47		С				Above	Above	48	C	1		
March Above Above 48 C Above Above Above 49 C Near or Above Above 50 C May Near or Above Above 50 C Near or Above Above 51 C June Above Below 51 Ic Above Below 52 Ic Above Below 53 July Above Near the Mean 52 Nc Above Near the Mean 53 Nc Above Near the Mean 54 Nc Aug Above Above Above Above Above Above 54 C Above Above 55 C September Near or Above Above Above Above Above 55 C Near or Above Above 56 C November Near or Below Below 56 C Near or Below Below 58 C		February	П	Above	Below	47	П			lc		Above	Below	48	П			Ic		Near or Above	Below	49	\top	\top	J	С
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June			П			_	П	_			ı			_	П	_			П			-	_	_	\top	٦
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Aug Above Above 53 C Above Above 54 C Above Above 55 C September Near or Above Above 54 C Above Above 55 C Near or Above Above 56 C October Near or Above Above 55 C Near or Below Above 56 Ic Below Above 57 Ic November Near or Below Below 56 C Near or Below Below Below 58 C			Н			_	Н		Nc		H			_	Н		No		Н			\rightarrow	+	N	_	٦
September Near or Above Above 54 C Above Above 55 C Near or Above 56 C October Near or Above Above 55 C Near or Above 56 C Near or Below Above 57 C Near or Below Below 56 C Near or Below Below 57 C Below Below 58 C		•	Н			_	Н	C			H			-	H	C			H			-	1	_	1	۲
October Near or Above Above 55 C Near or Below Above 56 Ic Below Above 57 C November Near or Below Below 56 C Near or Below Below 57 C Below Below 58 C			Н			_	Н	_			H			_	Н	_			Н			-	_	_	+	۲
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Appl	ethorpe		3 Months Le	ead					Г		2 Months Lea	d					1 Month L	ead				
Year	Month	Forecast	Actual		ChiSq	Α	ccura	су		Forecast	Actual	ChiSq	Α	ccura	су	Forecast	Actual		ChiSq	A	ccura	εу
2023	January	Near or Above	Below	58				lc	Г	Near or Above	Below				lc	Near or Below	Below	60	Г	С		
	February	Near or Above	Below	59				lc		Near or Above	Below				lc	Near or Above	Below	61				lc
	March	Near or Above	Above	60		С				Near or Above	Above		С			Near or Below	Above	62				lc
	April	Near the Mean	Near the Mean	61		С				Near or Below	Near the Mean		C			Near the Mean	Near the Mean	63		С		
	May	Near the Mean	Below	62			Nc			Near or Below	Below		U			Near the Mean	Below	64			Nc	
	June	Near or Above	Near the Mean	63		С				Near or Above	Near the Mean		C			Near the Mean	Near the Mean	65		С		
[July	Near or Above	Near the Mean	64		С				Near or Above	Near the Mean		С			Above	Near the Mean	66			Nc	
	Aug	Above	Above	65		С				Above	Above		С			Above	Above	67		С		
[Sept	Above	Near the Mean	66			Nc		J	Above	Near the Mean			Nc		Above	Near the Mean	68	ChiSq		Nc	
[Oct	Above	Near the Mean	67			Nc		Α	Above	Near the Mean	ChiSq		Nc		Above	Near the Mean	69	ChiSq		Nc	
	Nov	Above	Above	68		С			S	Above	Above	ChiSq	C			Above	Above	70	ChiSq	С		
	Dec	Above	Above	69		С			0	Above	Above	ChiSq	С			Above	Above	71	ChiSq	С		
2024	Jan	Above	Above	70		С			N	Above	Above	ChiSq	С			Above	Above	72	ChiSq	С		
	Feb	Above	Above	71		С			D	Above	Above	ChiSq	С			Above	Above	73	ChiSq	С		
1	Mar	Above	Above	72		С			J	Above	Above	ChiSq	С			Above	Above	74	ChiSq	С		
	April	Above	Near the Mean	73			Nc		F	Above	Near the Mean	ChiSq		Nc		Above	Near the Mean	75	ChiSq		Nc	
[May	Above	Near the Mean	74			Nc		M	Above	Near the Mean	ChiSq		Nc		Near or Above	Near the Mean	76	ChiSq	С		
[June	Above	Below	75				lc	Α	Near or Above	Below	ChiSq			lc	Above	Below	77	ChiSq			lc
	July	Above	Above	76		С			M	Above	Above	ChiSq	С			Above	Above	78	ChiSq	С		
ĺ	Aug	Above	Above	77		С			J	Above	Above	ChiSq	С			Above	Above	79	ChiSq	С		
	Sept	Above	Near the Mean	78			Nc		J	Above	Near the Mean	ChiSq		Nc		Above	Near the Mean	80	ChiSq		Nc	
	Oct	Above	Above	79		С			Α	Above	Above	ChiSq	С			Above	Above	81	ChiSq	С		
ĺ	Nov	Above	Above	80		С			s	Above	Above	ChiSq	С			Above	Above	82	ChiSq	С		
ĺ	Dec	Above	Above	81		С			0	Above	Above	ChiSq	С			Above	Above	83	ChiSq	С		
2025	Jan	Above	Above	82		С			N	Above	Above	ChiSq	С			Above	Above	84	ChiSq	С		
	Feb	Above	Near the Mean	83			Nc		D	Above	Near the Mean	ChiSq		Nc		Above	Near the Mean	85	ChiSq	\Box	Nc	
	March	Above	Above	84		С			J	Above	Above	ChiSq	С			Above	Above	86	ChiSq	С		
	April	Above	Above	85		С			F	Above	Above	ChiSq	С			Above	Above	87	ChiSq	С		
ĺ	May	Above	Above	86		С			M	Above	Above	ChiSq	С			Above	Above	88	ChiSq	С		
	June	Above	Near the Mean	87			Nc		Α	Above	Near the Mean	ChiSq		Nc		Above	Near the Mean	89	ChiSq		Nc	
ĺ	July	Above		88					M	Above		ChiSq				Above		90	ChiSq			
Ì	Aug	Near or Above		89					J	Above		ChiSq						91	ChiSq			
ſ	Sept	Above		90	П							ChiSq										
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			87			48	25	14			88		50	22	16		89			50	25	14
			100%			55%	29%	16%			100%		57%	25%	18%		100%			56%	28%	16%
						84	1%						82	2%	-					84	1%	
		C Consistent Forecast Ic Inconsistent Forecast													Nc	Near Consistent F	ored	cast				
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For the **Granite Belt**, <u>Minimum Temperature</u> forecast accuracy has been **56%**, **57%** and **55% Consistent (accurate) for lead times of 1, 2 and 3 months** respectively, for the 87 to 89 forecasts assessed so far. All forecast outcomes have a high number of near consistent forecasts so **have not been useful** for growers and supply chain managers to-date.

Conclusion (Minimum Temperature).

For both the Lockyer Valley and Granite Belt, Minimum Temperature forecast accuracy has been made up of a high proportion (≈25%) of Near Consistent forecasts for lead times of 1, 2 and 3 months for the 87 to 89 forecasts available and assessed to-date.

These minimum temperature forecasts **have not been useful** for growers and supply chain managers, based on the assessment of all the monthly forecasts issued since January 2018.

Rainfall Forecasts – (Tables 5 and 6)

Lockyer Valley Rainfall Forecasts.

Table 5. <u>Lockyer Valley Rainfall Forecasts</u> for the Months from Jan 2018 to June 2025, with corresponding Actual Outcome (where available).

	1		3 Months L	ead							2 Months	s Lead	j						1 Month	Lead				
Year	Month	Forecast	Actual		ChiSc	Α	ccura	су		Forecast	Actual		ChiSc	Α	ccura	су		Forecast	Actual		ChiSc	A	ccura	су
2018	Jan**		Below						Γ		Below						П		Below					
	Feb**		Above						t		Above						П	Near or Above	Above	1		С		
	Mar**		Below						t	Near or Above	Below	1				lc	П	Above	Below	2				Ic
	Apr	Near or Above	Below	1				lc	r	Near or Above	Below	2				lc	П	Near or Above	Below	3				Ic
	May	Near or Below	Below	2		С			t	Near or Below	Below	3	\vdash	С			Н	Near or Below	Below	4		С		
	Jun	Near or Below	Below	3		С			t	Near or Above	Below	4				lc	Н	N/A	Below	5	Н			Ic
	Jul	Below	Below	4	\vdash	С			H	N/A	Below	5				Ic	Н	Below	Below	6	\vdash	С		10
		N/A	Below	5	\vdash	-		lc	H	Below	Below	6	\vdash	С		10	Н	Below	Below	7	Н	С		
	Aug	Near or Below	Below	6	\vdash	С		i.	H	Below	Below	7	\vdash	С			Н	Below	Below	8	\vdash	С		\vdash
	Sep				\vdash	U		1.	H					·		1.	Н			_	\vdash	C	NI-	\vdash
	Oct	Near or Below	Above	7				lc	L	Near or Below	Above	8				lc	Н	Near the Mean	Above	9			Nc	
	Nov	Near or Above	Below	8	ш			lc	L	Near or Below	Below	9		С			Ш	Near or Below	Below	10	\vdash	С		\blacksquare
ш	Dec	Near or Below	Below	9		С			L	Near or Below	Below	10		С				Near or Below	Below	11		С		
2019	Jan	Near or Below	Below	10		С			L	Near or Below	Below	11		С			Ш	Near or Below	Below	12		С		
	Feb	Near the Mean	Below	11			Nc			Near the Mean	Below	12			Nc			Near the Mean	Below	13			Nc	
	Mar	Near or Below	Above	12				С		Near the Mean	Above	13			Nc			Near or Below	Above	14				Ic
	April	Below	Below	13		С			Г	Near or Below	Below	14		С				Near or Below	Below	15		С		
	May	Near or Above	Below	14				lc	Г	Near the Mean	Below	15			Nc			Near or Below	Below	16		С		
ı	June	Near the Mean	Below	15	П		Nc		T	Near the Mean	Below	16	П		Nc		П	Near or Below	Below	17	П	С		\square
ı	July	Near the Mean	Below	16	П		Nc		t	Near the Mean	Below	17	П		Nc		П	Near or Below	Below	18	П	С		\Box
	Aug	Near or Below	Below	17	М	С			t	Near or Below	Below	18	\vdash	С			Н	Below	Below	19	Н	C		
	Sept	Near the Mean	Below	18		-	Nc		H	Below	Below	19		С			Н	Below	Below	20	\vdash	С		
	Oct	Below	Below	19	Н	С	IVC		Ͱ	Below	Below	20		C			Н	Below	Below	21	Н	С		\vdash
		Below	Below	20	\vdash	С		_	Ͱ			21		С			Н		Below	22	Н	С		\vdash
	Nov			_	\vdash	_			Ͱ	Below	Below	_		_			Н	Below		_	\vdash			\vdash
	Dec	Below	Below	21		С			Ł	Below	Below	22		С			Н	Below	Below	23		С		-
2020	Jan	Climatology	Below	22	\vdash		Nc		L	Near or Below	Below	23		С			Ш	Climatology	Below	24			Nc	
	Feb	Climatology	Near the Mean	23		С			L	Near or Below	Near the Mean	24			Nc		Ш		Near the Mean	25		С		\Box
	Mar	Near or Below	Near the Mean	24		С			L	Near or Below	Near the Mean				Nc			Climatology	Near the Mean	26		С		
	April	Near or Below	Below	25		С			L	Climatology	Below	26			Nc			Climatology	Below	27			Nc	
	May	Climatology	Below	26			Nc			Climatology	Below	27			Nc			Climatology	Below	28			Nc	
	June	Climatology	Near the Mean	27		С				Above	Near the Mean	28			Nc			Near or Above	Near the Mean	29		С		
	July	Near or Above	Near the Mean	28		С			Γ	Above	Near the Mean	29			Nc			Near or Above	Near the Mean	30		С		
	Aug	Above	Above	29		С			Г	Near or Above	Above	30		С				Near or Above	Above	31		С		
	Sept	Near or Above	Below	30				lc	Ī	Above	Below	31				Ic		Above	Below	32				Ic
	Oct	Above	Above	31		С			T	Above	Above	32		С				Above	Above	33		С		
	Nov	Above	Below	32				lc	t	Near or Above	Below	33				lc	П	Above	Below	34				Ic
	Dec	Near or Above	Below	33				lc	t	Near or Above	Below	34	\vdash			lc	Н	Near or Above	Below	35				Ic
2024	- 1				H		NI-	2	┡			<u> </u>	⊨	\vdash	NI.	10	H				H	\vdash	NI-	10
2021	Jan	Above	Near the Mean	34	-	_	Nc		H	Above	Near the Mean	_	-	_	Nc		Н	Above	Near the Mean	36	-		Nc	-
	Feb	Above	Below	35				lc	L	Above	Below	36	₩	_		lc	Н	Above	Below	37	├			lc
	Mar	Near or Above	Above	36	_	С			₽	Near or Above	Above	37	₩	С				Near or Above	Above	38	├	С		\vdash
	April	Climatology	Above	37			Nc		L	Near the Mean	Above	38	_	С			Ш	Near or Above	Above	39		С		Ш
	May	Near or Above	Above	38		С			L	Climatology	Above	39			Nc			Climatology	Above	40			Nc	
	June	Near or Above	Near the Mean	39	$oxed{oxed}$	С			L	Climatology	Near the Mean	_	$oxed{oxed}$	С			L	Near or Above	Near the Mean	41	$ldsymbol{ldsymbol{ldsymbol{eta}}}$	С		$ldsymbol{ldsymbol{ldsymbol{eta}}}$
	July	Climatology	Above	40			Nc		L	Climatology	Above	41	\perp	_	Nc		L	Near or Above	Above	42		С		
	Aug	Near or Above	Below	41		\Box	L	lc	L	Above	Below	42	\perp	\Box		Ic		Above	Below	43	\Box	\Box		lc
	Sept	Above	Near the Mean	42	L^{-1}	L	Nc	L	Ĺ	Above	Near the Mean	43	L	L	Nc			Above	Near the Mean	44	L	L	Nc	
	Oct	Above	Above	43		С			Г	Above	Above	44		С				Above	Above	45		С		П
	Nov	Above	Above	44		С			t	Above	Above	45		С			П	Above	Above	46		С		\Box
	Dec	Near or Above	Above	45		С		Г	t	Near or Above	Above	46		С				Near the Mean	Above	47			Nc	П
2022	Jan	Near or Above	Near the Mean	46	\vdash	С		\vdash	t	Near or Above	Near the Mean		\vdash	С		Н	Н		Near the Mean	_	\vdash	С		\vdash
2022	Feb	Near or Above	Above	47	\vdash	С			۲	Near the Mean	Above	48	\vdash	-	Nc	Н	Н	Near or Above	Above	49		С		\vdash
				_		C	Ma		۰			_	\vdash	С	INC	\vdash	Н			_		C	No	H
	Mar	Near the Mean	Above	48	\vdash	\vdash	Nc		۰	Near or Above	Above	49	\vdash	C		1-	H	Near the Mean	Above	50	\vdash	\vdash	Nc	-
	April	Near the Mean	Below	49	<u> </u>	_	Nc		₽	Near or Above	Below	50	\vdash	_		lc	Н	Above	Below	51	_			lc
	May	Near or Above	Above	50	\vdash	С			L	Near or Above	Above	51	\vdash	С			L	Near or Above	Above	52		С		
	June	Near or Above	Below	51	lacksquare			lc	L	Near or Above	Below	52	_			lc	L	Above	Below	53	_	L		lc
	July	Above	Above	52	$oxed{oxed}$	С		_	L	Above	Above	53	$oxed{}$	С			L	Above	Above	54	_	С		$oxed{oxed}$
	Aug	Above	Above	53	$oxed{oxed}$	С		_	L	Above	Above	54	$oxed{oxed}$	С			L	Above	Above	55	$ldsymbol{ldsymbol{ldsymbol{eta}}}$	С		
, 1	Sept	Above	Above	54		С			L	Above	Above	55		С				Above	Above	56	\Box	С		igsqcup
		A la secon	Above	55	1 _	С		l	Г	Above	Above	56	I	С				Above	Above	57	I	С		
	Oct	Above	Above	33	_ '	_												710010						
	Oct Nov	Above	Below	56				lc	t	Above	Below	57				lc		Near or Above	Below	58				lc









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	Month	Forecast	Actual		ChiSq	Δ	ccura	rv	Forecast	Actual		ChiSq	Δ	ccura	cv	Forecast	Actual		ChiSq	Δ	ccura	cv
1001	Nov	Above	Below	56	Cilioq			lc	Above	Below	57	unioq	- ^		lc	Near or Above	Below	58	Cinoq	ΠÏ		lc lc
	Dec	Near or Above	Below	57				Ic	Near or Above	Below	58				Ic	Near the Mean	Below	59			Nc	
2023	Jan	Near or Above	Near the Mean	58		С			Near or Above	Near the Mean	59		С		-	Near the Mean	Near the Mean	60		С		
	Feb	Near or Above	Below	59		_	_	Ic	Near the Mean	Below	60		Ė	Nc		Near the Mean	Below	61		_	Nc	
	Mar	Near the Mean	Near the Mean	60		С				Near the Mean	61		С				Near the Mean			С		
	April	Near the Mean	Below	61			Nc		Near or Below	Below	62		С			Near or Below	Below	63		С		
	May	Near or Below	Near the Mean	62		С			Below	Near the Mean	63			Nc		Below	Near the Mean	64			Nc	
	June	Near or Below	Below	63		С			Near or Below	Below	64		С			Near or Below	Below	65		С		
	July	Near the Mean	Near the Mean	64		С			Near or Below	Near the Mean	65		С			Below	Near the Mean	66			Nc	
	Aug	Near or Below	Below	65		С			Near or Below	Below	66		С			Near or Below	Below	67		С		
	Sept	Near or Below	Near the Mean	66		С			Near or Below	Near the Mean	67		С			Near or Below	Near the Mean	68	ChiSq	С		
	Oct	Near or Below	Below	67		С			Near or Below	Below	68	ChiSq	С			Below	Below	69	ChiSq	С		
	Nov	Near or Below	Above	68				lc	Near or Below	Above	69	ChiSq			lc	Near or Below	Above	70	ChiSq			lc
	Dec	Near or Below	Above	69				lc	Near or Below	Above	70	ChiSq			lc	Near or Below	Above	71	ChiSq			lc
2024	Jan	Near or Below	Above	70				Ic	Near or Below	Above	71	ChiSq			lc	Near or Above	Above	72	ChiSq	С		
	Feb	Below	Below	71		С			Near or Below	Below	72	ChiSq	С			Near the Mean	Below	73	ChiSq		Nc	
	Mar	Below	Near the Mean	72			Nc		Near the Mean	Near the Mean	73	ChiSq	С			Below	Near the Mean	74	ChiSq		Nc	
	April	Below	Above	73				lc	Near or Below	Above	74	ChiSq			lc	Near or Above	Above	75	ChiSq	С		
	May	Near or Below	Below	74		С			Near or Below	Below	75	ChiSq	С			Near or Below	Below	76	ChiSq			
	June	Near or Below	Below	75		С			Near or Below	Below	76	ChiSq	С			Near or Above	Below	77	ChiSq			lc
	July	Near or Below	Near the Mean	76		С			Near or Above	Near the Mean	77	ChiSq	С			Near the Mean	Near the Mean	78	ChiSq	С		
	Aug	Near or Below	Above	77				lc	Near the Mean	Above	78	ChiSq		Nc		Near or Above	Above	79	ChiSq	С		
	Sept	Near the Mean	Near the Mean	78		С			Above	Near the Mean	79	ChiSq		Nc		Near or Above	Near the Mean	80	ChiSq	С		
	Oct	Above	Below	79				Ic	Near or Above	Below	80	ChiSq			lc	Above	Below	81	ChiSq			Ic
	Nov	Near or Above	Above	80		С			Near or Above	Above	81	ChiSq	С			Near or Above	Above	82	ChiSq	С		
	Dec	Above	Above	81		С			Near the Mean	Above	82	ChiSq		Nc		Near or Above	Above	83	ChiSq	С		
2025	Jan	Near the Mean	Near the Mean	82		С			Near or Above	Near the Mean	83	ChiSq	С			Near or Above	Near the Mean	84	ChiSq	С		
	Feb	Near the Mean	Below	83			Nc		Near or Above	Below	84	ChiSq			lc	Near the Mean	Below	85	ChiSq		Nc	
	March	Near or Below	Above	84				Ic	Near or Above	Above	85	ChiSq		Nc		Near the Mean	Above	86	ChiSq		Nc	
	April	Near the Mean	Near the Mean	85		С			Near the Mean	Near the Mean	86	ChiSq	С			Near or Above	Near the Mean	87	ChiSq	С		
	May	Near or Below	Above	86				lc	Near the Mean	Above	87	ChiSq		Nc		Near or Below	Above	88	ChiSq			lc
	June	Near or Below	Below	87		С			Near or Below	Below	88	ChiSq	С			Near or Above	Below	89	ChiSq	П		lc
	July	Near or Below		88					Near the Mean		89	ChiSq				Near or Above		90	ChiSq	\Box		
	Aug	Near the Mean		89					Near or Above		90	ChiSq										-
	Sept	Above		90																		
	Oct																			\Box		
																						-
			87			49	15	23		88			45	23	20		89			53	18	18
		'	100%			56%	17%	26%		100%			51%	26%	23%		100%			60%	20%	20%
						74	1%					,	77	7%						80	1%	_
	[С	Consistent Foreca	st					Nc	Near Consistent	Fore	cast				lc	nconsistent Fo	recast	t			
	[N/A Forecast Not Available																				

For the Lockyer Valley, <u>Rainfall forecast</u> accuracy has been **60%**, **51%** and **56%** Consistent for lead-times of **1, 2 and 3 months** respectively, for the 87 to 89 forecasts assessed so far, and the number of "Near or Above & Near or Below" forecasts is quite high, decreasing the usefulness of the 2 & 3 month Long Lead-time forecasts for growers and supply chain managers.

The 1-month lead time rainfall forecasts for the Lockyer Valley are more accurate (60% Consistent) and more useful than the 2 & 3 month lead times, based on the assessment of all forecasts issued since January 2018, making them slightly useful.









Granite Belt Rainfall Forecasts.

Table 6. <u>Granite Belt Rainfall Forecasts</u> for the Months from Jan 2018 to November 2024, with corresponding Actual Outcome (where available).

Apple	ethorpe		3 Months L	.ead					Г		2 Months	s Leac	i						1 Month	Lead				
Year	Month	Forecast	Actual		ChiSc	Α	ccura	icy		Forecast	Actual		ChiSo	Α	ccura	су		Forecast	Actual		ChiSc	Α	ccura	су
2018	Jan**		Near the Mean						Π		Near the Mean						П		Near the Mean					
	Feb**		Below						r		Below						П	Near or Above	Below	1				lc
	Mar**		Near the Mean						t	Near or Above	Near the Mean	1		С			П	Near or Above	Near the Mean	2		С		Г
	Apr	Near or Above	Below	1				lc	Н	Near the Mean	Below	2			Nc		П	Above	Below	3				Ic
	May	Near the Mean	Below	2			Nc		H	Near the Mean	Below	3			Nc		Н	Near or Below	Below	4		С		<u> </u>
	Jun	Near the Mean	Below	3			Nc		H	Near or Above	Below	4			.,,	lc	Н	N/A	Below	5				Ic
	Jul	Near or Below	Below	4		С	IVC		Ͱ	N/A	Below	5				lc	Н	Near or Below	Below	6		С		10
		N/A	Below	5	\vdash	C	-	lo.	H	Below	Below	6		С		10	Н	Below	Below	7		С		⊢
	Aug	_		_	\vdash	-	 	lc	H			7	_	_			Н			_	_	_		₩
	Sep	Near or Below	Below	6	\vdash	С		1	L	Below	Below	_	_	С		1	Н	Below	Below	8		С		\vdash
	Oct	Near or Below	Above	7	_		_	lc	L	Near or Below	Above	8		_		lc	Н	Near the Mean	Above	9		_	Nc	\vdash
	Nov	Near or Above	Below	8			_	lc	L	Near or Below	Below	9	_	С			Ш	Near or Below	Below	10		С		\vdash
	Dec	Near the Mean	Below	9			Nc		L	Near or Below	Below	10		С			Ш	Near the Mean	Below	11			Nc	
2019	Jan	Near or Below	Below	10		С			L	Mixed	Below	11				lc		Near or Below	Below	12		С		
	Feb	Near or Below	Below	11		С				Near the Mean	Below	12			Nc			Near or Below	Below	13		С		
	Mar	Near or Below	Near the Mean	12		С				Near the Mean	Near the Mean	13		С				Near or Below	Near the Mean	14		С		
	April	Below	Below	13		С			Г	Near or Below	Below	14		С				Near or Below	Below	15		С		
	May	Near or Below	Below	14		С			T	Near or Below	Below	15		С			П	Near or Below	Below	16		С		
	June .	Near or Above	Near the Mean	15		С			t	Near the Mean	Near the Mean	16		С			П	Near or Below	Near the Mean	17		С		\vdash
	July	Near the Mean	Below	16			Nc	Н	t	Near the Mean	Below	17			Nc		Н	Near or Below	Below	18		С		\vdash
	Aug	Near or Below	Below	17		С		H	H	Near or Below	Below	18	\vdash	С	140		Н	Near or Below	Below	19		С		\vdash
	_			_	\vdash	C	No		⊢			19		С			Н			_		С		⊢
	Sept	Near the Mean	Below	18	\vdash	С	Nc	H	⊢	Below	Below	_	\vdash	C		\vdash	Н	Below	Below	20	\vdash	С		\vdash
	Oct	Below	Below	19		_	_		┡	Below	Below	20		_			Н	Below	Below	21		_		⊢
	Nov	Below	Below	20		С	<u> </u>		┖	Below	Below	21		С			ш	Below	Below	22		С		\perp
	Dec	Below	Below	21		С	<u> </u>		L	Near or Below	Below	22		С				Below	Below	23		С		
	Jan	Climatology	Near the Mean	22		С				Near or Below	Near the Mean	23		С				Climatology	Near the Mean	24		С		
	Feb	Climatology	Above	23			Nc			Near or Below	Above	24				lc		Near or Below	Above	25				Ic
	Mar	Climatology	Below	24			Nc		Г	Climatology	Below	25			Nc			Climatology	Below	26			Nc	
	April	Climatology	Near the Mean	25		С			r	Climatology	Near the Mean	26		С			П	Climatology	Near the Mean	27		С		М
	May	Climatology	Below	26			Nc		r	Climatology	Below	27			Nc		П	Climatology	Below	28			Nc	Н
	June	Near or Above	Above	27		С	110		┢	Above	Above	28		С	140		Н	Near or Above	Above	29		С	140	Н
		Above	Near the Mean	28		C	Nc		⊢	Above	Near the Mean	29		-	Nc		Н		Near the Mean	30		С		\vdash
	July			_		_	INC		⊢			_		_	IVC		Н			_		_		\vdash
	Aug	Near or Above	Above	29		С	_	_	L	Near or Above	Above	30		С			Н	Above	Above	31		С		H
	Sept	Above	Below	30			_	lc	L	Above	Below	31				lc	ш	Above	Below	32				Ic
	Oct	Above	Near the Mean	31			Nc		L	Above	Near the Mean	32			Nc			Above	Near the Mean	33			Nc	ш
	Nov	Near or Above	Below	32				lc	L	Above	Below	33				lc		Above	Below	34				Ic
	Dec	Climatology	Above	33			Nc			Near or Above	Above	34		С				Above	Above	35		С		
2020	Jan	Near or Above	Below	34			ĺ	Ic	П	Above	Below	35				Ic	П	Above	Below	36	İ			lc
	Feb	Above	Below	35				Ic	Н	Near or Above	Below	36				Ic	H	Near or Above	Below	37				Ic
	Mar	Near or Above	Above	36		С		10	Н	Near or Above	Above	37		С		10	Н	Near or Above	Above	38		С		10
				37		С			Н		Near the Mean	38		С			Н		Near the Mean	39		С	-	\vdash
	April	Climatology	Near the Mean						Н			-	_		-		Н					_	_	-
	May	Near or Above	Near the Mean	38	\vdash	С			Н	Near or Above	Near the Mean	39		С			Н	Climatology	Near the Mean	40	-	С		_
	June	Climatology	Above	39			Nc		Ц	Near the Mean	Above	40			Nc		Ц	Near or Above	Above	41		С		
	July	Climatology	Above	40			Nc		Ц	Climatology	Above	41	Ш		Nc		Ц	Above	Above	42		С		
	August	Near or Above	Near the Mean	41		С			Ш	Above	Near the Mean	42		С			Ц	Above	Near the Mean	43			Nc	
	Sept	Above	Near the Mean	42			Nc			Above	Near the Mean	43			Nc		Ш	Above	Near the Mean	44			Nc	
	Oct	Above	Above	43		С	L			Above	Above	44		С			Ц	Above	Above	45	[С		
	Nov	Above	Above	44		С			П	Above	Above	45		С			П	Above	Above	46		С		
	Dec	Near the Mean	Above	45			Nc		П	Near or Above	Above	46		С			П	Near or Above	Above	47		С		
2022	Jan	Near or Above	Near the Mean	46		С			H	Near or Above		47	\vdash	С	-1		Н	Near the Mean		48		С		
2022	Feb	Near or Above	Above	47		С			Н	Near or Above	Above	48		С	\vdash		Н	Near or Above	Above	49		С	-	
				48	\vdash	U	No		Н	Near or Above		48		C	\vdash		Н			50	\vdash	С	-	
	Mar	Near the Mean	Above		\vdash	_	Nc		Н		Above		\vdash	_	\vdash		-	Near or Above	Above		-	_	-	-
	April	Near or Above	Above	49	\vdash	С			Н	Near or Above	Above	50		С			-	Near or Above	Above	51		С		\vdash
	May	Near the Mean	Above	50			Nc		Ц	Near the Mean	Above	51			Nc		Ц	Near or Above	Above	52	\Box	С		\square
	June	Near or Above	Above	51		С			Ш	Near or Above	Above	52		С			Ц	Above	Above	53		С		
	July	Above	Near the Mean	52			Nc		Ц	Above	Near the Mean	53			Nc		Ц	Above	Near the Mean	54			Nc	
	Aug	Above	Above	53		С	LĪ		LĪ	Above	Above	54		С			LĪ	Above	Above	55	\Box	С	_ [
	Sept	Above	Above	54		С			П	Above	Above	55		С			П	Above	Above	56		С		
	Oct	Above	Above	55		С			П	Above	Above	56		С			П	Above	Above	57		С		
	Nov	Above	Below	56				Ic	П	Above	Below	57				lc	П	Near or Above	Below	58				lc
	Dec	Near the Mean	Below	57			Nc		H	Near or Above	Below	58				Ic	-	Near the Mean	Below	59	-	\dashv		lc
		TYCUT THE INCOME	DCIUT	97		1	140	1		THE OF MINORE	DCIOTT	-00				- 10		ur the Hiedli	DCIOTY	00				10









Apple	thorpe		3 Months Le	ad						2 Months	Lead						1 Month	Lead				
	Month	Forecast	Actual		ChiSq	Δ	ccura	nv .	Forecast	Actual		ChiSq	Δ	ccura	cv	Forecast	Actual		ChiSq	Δ	cura	CV
reur	Nov	Above	Below	56	CHISQ	_^	CCUITO	lc	Above	Below	57	Cinaq	_^	CCUIT	lc	Near or Above	Below	58	Cinoq		curu	lc
	Dec	Near the Mean	Below	57			Nc	10	Near or Above	Below	58				lc	Near the Mean	Below	59				lc
2023	Jan	Near or Above	Near the Mean	58		С	140		Near the Mean	Near the Mean	59		С				Near the Mean	60		С		10
	Feb	Near the Mean	Below	59	_	Ť	_	lc	Near the Mean	Below	60		_	_	lc	Near the Mean	Below	61			_	lc
	Mar	Near the Mean	Above	60			Nc		Near the Mean	Above	61			Nc		Near the Mean	Above	62			Nc	
	April	Near the Mean	Below	61			Nc	_	Near or Below	Below	62			Nc		Near the Mean	Below	63			Nc	
	May	Near or Below	Above	62				lc	Below	Above	63				lc	Below	Above	64				lc
	June	Near or Below	Below	63		С			Below	Below	64		С			Near or Below	Below	65		С		
	July	Near or Below	Below	64		С			Near or Below	Below	65		С			Below	Below	66		С		
	Aug	Below	Below	65		С			Below	Below	66		С			Below	Below	67		С		
	Sept	Below	Below	66		С			Near or Below	Below	67		С			Below	Below	68	ChiSq		_	
	Oct	Below	Below	67		С			Near or Below	Below	68	ChiSq	С			Below	Below	69	ChiSq			
	Nov	Near or Below	Above	68				lc	Near or Below	Above	69	ChiSq			Ic	Near the Mean	Above	70	ChiSq		Nc	
	Dec	Near or Below	Above	69				lc	Near or Below	Above	70	ChiSq			lc	Near the Mean	Above	71	ChiSq		Nc	
2024	Jan	Near the Mean	Near the Mean	70		С			Near the Mean	Near the Mean		ChiSq	С				Near the Mean	72	ChiSq	С		
	Feb	Below	Below	71		С			Near or Below	Below	72	ChiSq	С			Near or Above	Below	73	ChiSq			lc
	Mar	Near or Below	Near the Mean	72		С			Near or Above	Near the Mean	73	ChiSq	С			Near or Below	Near the Mean	74	ChiSq	С		
	April	Near the Mean	Above	73		_	Nc		Near or Below	Above	74	ChiSq			lc	Near or Below	Above	75	ChiSq			lc
	May	Near or Below	Below	74		С			Near or Below	Below	75	ChiSq	С			Near or Below	Below	76	ChiSq	С		
	June	Near or Below	Below	75		С			Near or Below	Below	76	ChiSq	С			Near the Mean	Below	77	ChiSq		Nc	
	July	Near or Below	Near the Mean	76		С			Near or Above	Near the Mean	77	ChiSq	С			Near the Mean	Near the Mean	78	ChiSq	С		
	Aug	Near the Mean	Below	77			Nc		Near the Mean	Below	78	ChiSq		Nc		Near or Above	Below	79	ChiSq			lc
	Sept	Near the Mean	Above	78		С			Near or Above	Above	79	ChiSq	С			Near or Above	Above	80	ChiSq	С		
	0ct	Above	Below	79				lc	Near or Above	Below	80	ChiSq			lc	Above	Below	81	ChiSq			lc
	Nov	Near or Above	Near the Mean	80		С			Near or Above	Near the Mean	81	ChiSq	С			Near or Above	Near the Mean	82	ChiSq	С		
	Dec	Above	Near the Mean	81			Nc		Near or Above	Near the Mean	82	ChiSq	С			Above	Near the Mean	83	ChiSq		Nc	
2025	Jan	Near or Above	Near the Mean	82		С			Near or Above	Near the Mean	83	ChiSq	С			Near or Above	Near the Mean	84	ChiSq	С		
	Feb	Near or Below	Below	83		С			Near or Above	Below	84	ChiSq			lc	Near the Mean	Below	85	ChiSq		Nc	
	March	Near or Below	Above	84				lc	Near or Above	Above	85	ChiSq	С			Near or Below	Above	86	ChiSq			lc
	April	Near or Below	Above	85				lc	Near the Mean	Above	86	ChiSq		Nc		Above	Above	87	ChiSq	С		
	May	Near or Below	Above	86				lc	Near or Below	Above	87	ChiSq			lc	Near or Below	Above	88	ChiSq			lc
	June	Near or Below	Near the Mean	87		С			Near or Below	Near the Mean	88	ChiSq	С			Near the Mean	Near the Mean	89	ChiSq	С		
	July	Below		88					Near the Mean		89	ChiSq						90	ChiSq			
	Aug	Near the Mean		89							90	ChiSq						91	ChiSq			
	Sept			90							91	ChiSq										
	0ct			91																		
				_		_						_							_			
Ш															Ш							Ш
			87			46	24	17		88			52	17	19		89			56	15	18
		10% 53% 28% 20% 100% 59%													22%		100%			63%	17%	20%
						80)%						78	8%						80	%	
	[С	Consistent Foreca	ıst					Nc	Near Consistent	Fore	cast				lc	Inconsistent For	recasi	t			Į.
		N/A	Forecast Not Avai	lable																		

For the **Granite Belt**, <u>Rainfall forecast</u> accuracy has been **63%**, **59%** and **53% Consistent for lead-times of 1, 2 and 3 months respectively,** for the 87 to 89 forecasts assessed so far, and the number of "Near or Above" and "Near or Below" forecasts is quite high.

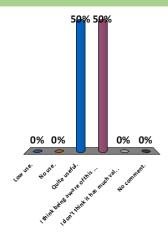
The **1** month lead-time **Granite Belt** rainfall forecast is showing **some skill (63% Consistent)** and could be useful while the **2** and **3** month forecasts have not been useful for growers and supply chain managers, based on assessment of the forecasts issued since January 2018.

A Long Lead-time forecast (1-3 months) is preferred so that the most appropriate and timely Management Decisions can be made.

Long Lead-time maximum temperature forecasting was to be the original focus of this project (as per the 2018 project proposal), however growers and supply chain managers continued to show interest in Long Lead-time minimum temperature and rainfall forecasts, so project staff continued to provide and "ground truth" these additional forecasts, even when the accuracy to-date has not been sufficient for these additional forecasts to be considered useful.

Long Lead-time forecasts work, farm and supply chain business manager opinions in June 2025.

- 8. Thinking about the <u>Long Lead Time forecasts</u> for June, July and August 2025 presented and discussed tonight, in your opinion how useful is it to your business and farm planning?
- 1. Low use.
- 2. No use.
- 3. Quite useful.
- I think being aware of this information will improve my planning.
- 5. I don't think it has much value at all.
- 6. No comment.



Appendix 2.

An example of a recent DCAP/FBRP Heatwave Advisory.



Heatwave Advisory Information

Issued Saturday 18th of January 2025.

Hottest day Thursday current forecast 39°C for Gatton,

Hottest day Thursday current forecast 33°C for Applethorpe

From your Dept of Primary Industries (FBRP) – Long-lead Time Forecast project team.

The Australian Bureau of Meteorology (BoM) Heatwave Service is forecasting an <u>approaching Heatwave</u>

Click **HERE** to see BoM's short definition of a Heatwave

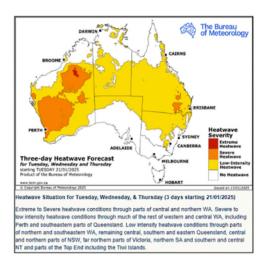
Issued by BoM.

The current Lockyer forecast is for 37,39,39° C (Wed - Friday) with warm nights. The current Applethorpe forecast is for 32,33,33° C (Wed - Friday) warm nights.

The current BoM Heatwave forecast is below and was updated yesterday afternoon. Check the BoM Heatwave Service site in the late afternoon for the daily update.

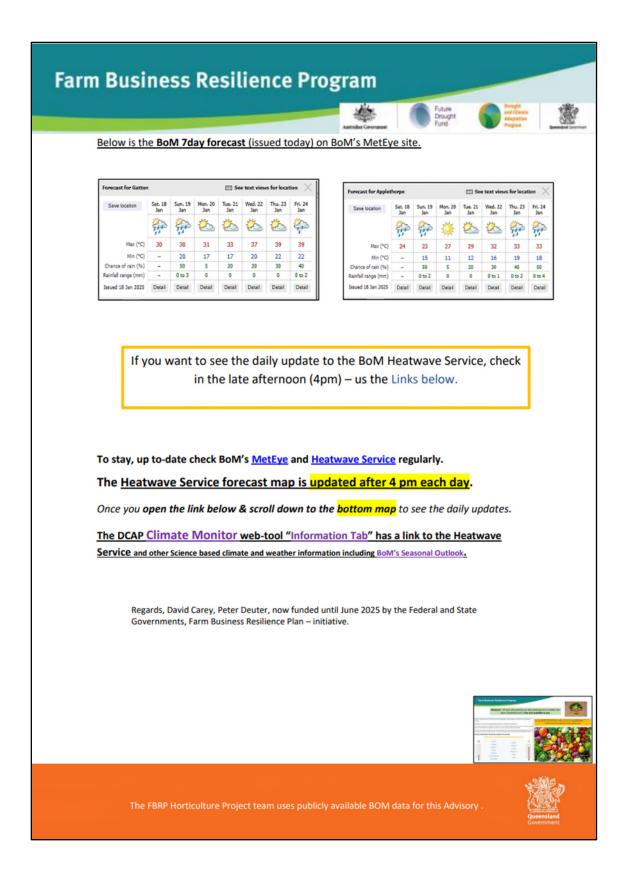
<u>The current forecast</u> from the Australian Bureau of Meteorology's, **Heatwave Service** is below.

Low intensity Heatwave Lockyer Valley & Granite Belt,



The FBRP Horticulture Project team uses publicly available BOM data for this Advisory





The <u>DCAP Heatwave Advisories</u> provide **localised targeted information** and timely warnings that inform short-term management and business plans. <u>Just as **importantly**</u>, they **guide business managers** to **BoM's Heatwave Service** and **MetEye** for daily **updates**.