BCG TECHNICAL BULLETIN

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What's happening:

- Rainfall varied with 5 – 20 mm recorded across the region last Friday
- Fungicide decisions have been challenging in cereals
- Lentils have started flowering in some areas and monitoring for insects will soon commence
- Growers in some areas are noticing stripe rust in wheat
- Armyworm continue to make their presence known

Table 1. Rainfall (mm) across the Wimmera and Mallee, number in brackets denotes decile for the period.

Duration (mm)	Ouyen	Manang	Swan Hill	Sea Lake	Birchip	H'toun	St. Arnaud	Kerang	W'beal	Longy	Nhill	Kaniva	Boort	M'ville
Nov – Mar	46 (1)	24 (1)	64 (2)	62 (2)	62 (1)	52 (1)	164 (5)	136 (5)	112 (5)	84 (2)	113 (5)	81 (1)	86 (2)	48 (1)
April – August	115 (3)	100 (2)	94 (1)	122 (3)	110 (1)	103 (1)	212 (3)	101 (1)	151 (2)	178 (3)	103 (1)	249 (5)	118 (1)	104 (1)
September 1 – 7	12	13	13	20	18	13	19	17	18	17	10	10	22	21

Climate: Last week's rainfall in NW Vic eventuated due to a strong cold front connecting with moisture generated in the Indian Ocean. For the next fortnight, the Southern Annular Mode is positive with weather patterns dominated by high pressure systems, resulting in dry conditions and above average maximum temperatures. Longer term, the -ve IOD event continues and the tropical Pacific Ocean continues to cool, resulting in a high chance of wetter conditions and below average daytime temperatures during October and November. Keep this in mind when considering late season pulse disease management and harvest planning as it could be a long, slow finish to the season if the forecast delivers.

Insect management: Reports have suggested that insecticides are being added to many canopy closure fungicide applications in pulses. In some cases this is warranted however make sure you know why you are doing this. If there is not a pest present to control, it is a waste of money, even if you think it makes sense logistically. It also fuels the resistance issues that develop in non-target species. Timing management to pest species and thresholds is always the best way to manage insect incursions. This applies to all crops.

Soil moisture: Cereal crops are now drawing moisture at a rate of ~1mm/day depending on location and the size of the canopy. Recent rainfall will therefore buy us ~10 – 20 days. If management decisions for pests are required, it is important to consider that waiting and wondering about the best action doesn't always result in the best outcome. If insects are at threshold levels, don't wait, act now to protect the crop.

Armyworm: Armyworm are causing rapid damage in some crops due to high pest numbers and/or large grub size. If damage is resulting in head loss or affecting yield contributing leaves, management needs to occur. If this is not occurring or damage is only minor, continue to monitor. During spring outbreaks when heads are emerging, 1 – 3 larvae/m^2 is the threshold for management. Earlier incursions work on a threshold of 8 – 10/m^2, because the damage is often cosmetic. Cereals are the usual target however they can be found in lentils. It is believed this is increasingly common where lentils are sown into standing stubble, with the moth laying its eggs on the stubble.

Etiella: Day degree models indicate that Ultima is at 250 degree days, Watchupga 235 and Kalkee 194. Monitoring of Etiella should occur from ~300 degree days, with peak flight activity generally set to commence at 351 degree days. Currently day degrees are accumulating at 3 – 10 units/day. Therefore monitoring and management decisions will commence in the next few weeks.

Stripe rust: Recent reports of stripe rust in wheat indicate it's now time to start monitoring. For varieties with Adult Plant Resistance (APR) this will kick in as head emergence occurs and temperatures warm up to slow rust

development. Varieties rated MS or higher are generally regarded to have sufficient APR to slow the disease and minimise yield loss provided high levels of rust weren't already in the crop. There are several pathotypes of stripe rust in Victoria. There have been no pathotype screening results from Victoria this season but results from 2020 and southern NSW in 2021 suggest that both the 198 and 134 pathotypes will be important. Since we often don't know which pathotype is present in a crop it is best to use the Victorian rating (Table 2). Varieties rated MSS, S or SVS may need fungicide protection but decisions may be difficult due to the uncertainty of future rainfall. The GRDC supported "StriperustWM" app for iPads and tablets can help in the decision process to determine if fungicide protection is warranted. For infection to occur, crops need to experience leaf wetness for 6 continuous hours and temperatures between ~12 – 20°C, but disease can still progress in higher temperatures.

Figure 1. Stripe Rust in DS Bennett (Source B. Bennett)

In the Wimmera active monitoring is recommended as rust infection and the potential economic benefit from management is possible: crops have heavy canopies, are yet to have heads emerge and yield potentials are average to above. Understand the variety susceptibility, as for most wheat crops in the district, APR will become effective in the coming weeks which will be the best form of control. If growing Trojan, Rockstar or Vixen, monitoring should be prioritised and management may be required. If managing, apply fungicides with high water rates (80-100 L/ha), with robust chemical rates at the correct time (Z39).

In the Mallee crops are advanced, canopies are thin and previously moisture stressed, therefore economic benefits from management will be unlikely.

Table 2. Resistance ratings of commonly grown wheat varieties to stripe rust pathotypes. The 134 and 198 pathotypes are likely to be most common in Victoria. The 64E0A was reported in northern NSW during 2020. All individual pathotype ratings are provisional. Other variety ratings can be found here

Variety	Victoria rating	Provisional individual pathotypes			
		Yr_134E1A+	Yr_198	Yr_239	Yr_64E0A*
LRPB Trojan	**SVS**	MR	SVS	MRMS	SVS
Razor CL Plus	**MS**	MS	MRMS	MRMS	MR
Rockstar[A]	**MRMS/S**	MRMS	MR	MS	S
Scepter	**MSS**	MSS	MRMS	MRMS	RMR
Vixen[A]	**MRMS/SVS**	MRMS	MRMS	MSS	SVS
Bitalli	**MS**	MR	MS	MR	MRMS
DBA Aurora	**MR**	RMR	MRMS	RMR	MR

[A] Rockstar and Vixen will be more susceptible (S and SVS respectively) if the rare 64E0A pathotype is present.

What's happening around the traps (ADAMA trapview): The trapview network has revealed that heliothis flights through the Mallee are well underway and growers and advisors need to monitor for larvae in susceptible crops. The Wimmera is just starting to register moths in traps and can expect to see an increase over the next few weeks and an associated egg lay.

Hay decisions: With soil moisture becoming limiting and uncertain rainfall for the rest of the growing season, carefully consider salvage options. This is not another 2018: hay prices are not great, the long range weather forecast is positive, so widespread cutting of hay may not be as successful as 2018. Get out in the crop, take some cuts and do the sums. If moisture is equally limiting across the farm, it could be the better crops that would need to be prioritised for cutting as this will likely maximise economic return. Consider time of cutting as this is critical to maximise yield and quality. Cutting crops before head emergence from the boot increases the curing time and therefore the risk of weather damage and quality effects. If hay prices remain low or you cannot use it on farm, hay may not be a viable option. Alternatively, if sufficient biomass exists, cutting a crop for hay may provide a profitable risk management option in the face of uncertain rainfall for the final six weeks of the growing season required to fill grain.

The table below outlines a grain income vs hay income scenario based on the following assumptions: $50/ha cutting cost, $20/bale baling cost over 2t yield, $30/bale baling cost for less than 1t yield, $25/bale baling cost between 1 and 2t, $2/bale stacking cost, $45/ha grain harvest cost and a rule of thumb that hay yields will be 1.8 times that of grain.

Table 3. Partial gross profit calculations for grain and hay.

Grain		Hay		Price differential hay over grain ($/ha)
Yield (t/ha)	Partial gross profit ($/ha) @ $300/t	Yield (t/ha)	Partial gross profit ($/ha) @ $130/t	
0.5	105	0.9	26	-79
1	255	1.8	115	-140
1.5	405	2.7	216	-189
2	555	3.6	305	-250
2.5	705	4.5	394	-311
3	855	5.4	482	-373
3.5	1005	6.3	571	-434
4	1155	7.2	660	-495
4.5	1305	8.1	748	-557
5	1455	9	837	-618

Fallows and pastures set for termination: Barley grass and ryegrass are starting to flower. Where preparation for next year is required, management needs to occur now to prevent seed set.

Livestock: Weaning time is a good time to reflect on how seasonal conditions and lambing management has influenced the number of lambs born and their survival. Compare the number of foetuses recorded at scanning with lamb numbers at marking and weaning to identify where potential is being held or lost. Is it at conception, lambing or weaning? Managing nutrition by lambing time and feeding to pregnancy status affects ewe condition, the most important factor of lamb survival. When ewe nutrition is poor, birthweights, colostrum supply, mothering ability and lamb behaviour can all be compromised. Conversely, being too fat kills ewes and lambs with kindness. Available paddock feed, access to feeders, shelter, space and mob size all influence ewe-lamb bonding and how well they thrive. For many, this year has been late and tough on lambing. So while you remember, make time to note down your experience, what you learnt and plan ahead for next season.

Example template for comparing scanning and marking results to targets (source Evergraze)

	Target scanning	Target potential lambs	Actual scanning	Potential lambs at marking	Target survival	Actual lambs marked
Dry	10		10			
Single	140 A	x 1 = 140	100 E	x 1 = 100	x 90% = 90	
Twin	60 B	x 2 = 120	100 F	x 2 = 200	x 70% = 140	
Total	210 C	260 D	210 G	300 H	230 I	200 J
Percentages	(A+B)/C = 95%	D/C = 124%	(E+F)/G = 95%	H/G = 143%	E/H = 77%	Survival: J/H x 100 = 67% Overall: J/C x 100 = 95%

Grain market snapshot: A few more market reports were released in the past fortnight, the Statistics Canada report was being watched very closely as to where they would peg the Canadian wheat, barley, canola and lentil production numbers. As expected, all Canadian forecasts were well down on last season and on longer term averages, they are forecasting the smallest crop for each commodity in 15 – 20 years. Headers are well and truly rolling in Canada so it will not be too long before we can see how many tonnes come off their crops. There could still be some pricing fireworks if the actual production is significantly lower than market expectations. Locally there has not been a lot of movement in new crop pricing in the past fortnight.

Table 3. Indicative wheat, barley and canola prices, Geelong port zone as at 6 September 2021.

Commodity	2021/22 season	Compared with last fortnight
APW wheat	$340	Down $10
CAN non-GM	$870	Down $10
BAR1 barley	$278	Up $3
Faba beans (del Wimmera)	$380	Down $10
Lentils (del Wimmera)	$1080	Down $20

BCG research update: This year at Watchupga a pre-emergent matrix and knockdown herbicide matrix were set up. Pre-emergents tested included Overwatch, Callisto, Luximax, Reflex, Ultro, Mateno complete, trifluralin + triallate and Sakura. More recently a knockdown matrix looking at glyphosate mixes, in particular group G chemistries on advanced vetch and volunteer barley/weeds was set up. On half of the plots a double knock strategy was implemented using Gramoxone360.

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