# BCG TECHNICAL BULLETIN

No. 6
19 July 2021



**What's happening:** Spraying is the focus for most growers although frosts in the last two weeks provided challenges to growers who were careful where grass control was planned. Varied crop development continues to make decisions challenging. Most break crops in the Mallee have had spraying completed. The focus is now on cereals. Weed burdens are mixed, inability to use knockdowns at sowing has resulted in weeds outside of pre-emergent control spectrum being quite heavy in some areas. Spot form net blotch has really started to show itself and management options are being considered. Supplementary feeding is still occurring as grazing crops have been slow to establish in many areas.

**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-June | 44(1) | 45(2) | 48(2) | 56(2) | 47(1) | 31(1) | 110(3) | 50(2) | 76(3) | 87(3) | 40(1) | 111(4) | 58(1) | 39(1) |
| July (to 15th) | 18 | 14 | 12 | 15 | 16 | 13 | 28 | 11 | 15 | 20 | 11 | 23 | - | 18 |

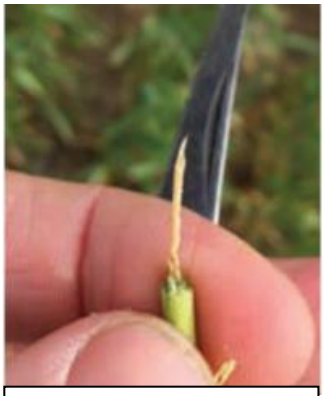
**Climate:** Welcome rain fell across our region this week, thanks to several cold fronts and a low-pressure system bringing moisture up from the south. More cold fronts look likely to track across SE Australia over the next week so be prepared to work around showery conditions. Looking further afield many climate models are still forecasting a negative Indian Ocean Dipole (-IOD) event to occur however, the recent IOD index is sitting at -0.27°C, which is above the -IOD threshold of -0.4°C. A -IOD event is not declared until the index, which measures the changes in sea surface temps between the tropical western and eastern Indian Ocean, has been below the negative threshold for 8 weeks. Up until now we had 6 consecutive weeks of the IOD index below the threshold and whilst this latest value is above, the index is forecast to dip below the threshold again. For the -IOD to eventuate we also need the cloud patterns, pressure patterns, deep sea temps and the trade winds in the Indian Ocean region to come to the party. As per previous weeks only the deep-sea temps and trade winds are in attendance. Whilst we wait for the late comers to hopefully arrive it's best to continue to plan for an average finish.

**Soil moisture:** Probes can play an important part in understanding moisture infiltration with rainfall events during winter when plant water demands are low. This provides some guidance on season development and if you are 'building the bank'. Sensor data is a point specific measurement in a paddock but over time will be a valuable reference point. Even if the desired field capacity and wilting points have not been established with recently installed probes, trend line analysis of the shallowest sensors will indicate depth of water movement. The agriculture network shows with limited rain in the Mallee this growing season, there has been no detection of moisture infiltration down to the 30cm sensor. Small rain events have limited impact. Heavier soil types can have higher water holding capacity but also take more rain to fill moisture deficits. Areas of the Wimmera have benefited from higher rainfall totals in June. At sites at Taylors Lake, Brim, Wallup and the Bangerang area, the water has filled the moisture deficit in the top soil horizon and allowed some infiltration.

**Ester applications:** Restrictions come into place from 1 August (until 30 April), north of the Calder highway. Ester based products cannot be used in those restricted zones. Prioritise works requiring ester formulations over the next two weeks then switch to amine-based products. Where there are concerns around crop growth stage, a rule of thumb for using MCPA LVE (570g active) is 100ml/leaf emerged on the plant. This may help target management within the available window.

**Managing plant-back periods:** Mid July means we are approx. 9 months from our next sowing window. With things running a little later than usual, some of the plant-back guidelines will be tight, particularly if there are rainfall requirements to promote sufficient breakdown. Products worth considering in this space include the usual problematic chemistries of the imi's and clopyralid but also products such as Ally, Velocity, Precept, Igran, Broadstrike, Talinor and Paradigm. Consult labels and your agronomist before applying products with lengthy plant back guidelines that may impact on rotations.

**Recent frosts:** Cold conditions have been experienced over the past week. The BCG main site recorded close to 20hrs below 2°C at screen height (crop height ~2°C colder than this) and reached a low of -2.8°C on Friday morning (other areas were colder than this). As always with frosts, be alert but not alarmed. In general, cereal crops are yet to reach critical stages for frost damage (stem elongation – grain fill but peaking at flowering). Evidence of frost may present in purpling or yellowing of the crop and some distortion of growth. In situations of more advanced crops (those already elongating in the case of cereals) keep an eye out for damage present as the death of the developing ear, even as early as GS31. If you have frost prone landscapes and advanced crops, check those areas 7 – 10 days post event. Rainfall this week will help with recovery and if crops have suffered some tiller death with retillering.



Shriveled frosted head from early stem elongation damage (DPIRD)

**Crop diseases:** With wet conditions looking to be on the forecast for the next week or so, diseases that like cool damp conditions are likely to become evident. These may include scald and net blotches in barley, blackleg in canola, Septoria and yellow leaf spot in wheat, and ascochyta, cercospora, and chocolate spot in pulse crops. If continued wet conditions occur, the use of fungicides will need to be considered but always need to be done considering return on investment and appropriate timing for best outcome. Take time now to freshen up on resistance ratings for the varieties you have to assist with prioritising workflows and not unnecessarily spraying varieties with good disease packages. Information of disease ratings and considerations can be found here for pulses, cereals and canola.

**Red leather leaf (RLL) oats:** RLL is generally common in the medium to high rainfall zone and less common in the Mallee. A survey done by Agriculture Victoria in 2019 found 90% of crops were infected with RLL (majority Wimmera, but some Mallee). RLL can cause up to 16% grain yield loss in milling varieties and 12% biomass loss in hay varieties. There are no registered fungicides for control (of RLL) however research from the national hay agronomy project is showing propiconazole to be effective for managing RLL when applied around mid-tillering to early stem elongation (Z31). Maximum Residue Limits indicate that it cannot be harvested for 4 weeks after application. Work continues into the effectiveness of fungicides. Find more information on the potential impacts, symptoms and variety ratings here.

**Net form net blotch (NFNB):** Be on the lookout in barley crops this growing season. Severe infections of this potentially damaging foliar disease have been reported in commercial crops of Spartacus CL which was previously resistant. The levels observed indicate the arrival of the more virulent strain observed in South Australia in 2020. This strain is also resistant to some fungicides, such as the seed treatment fluxapyroxad (Systiva) and foliar fungicide propiconazole. Monitor crops treated with either of these fungicides and ensure the expected control has been achieved. Identifying NFNB compared to SFNB is shown in the photos below.

NFNB left, SFNB right (G. Clarke & M. McClean)

**Table 2. Resistance rating of barley varieties.**

| Variety | SFNB | NFNB |
|---|---|---|
| **Compass** | MS | MS |
| **La Trobe** | S | MS |
| **RGT Planet** | SVS | SVS |
| **Spartacus CL** | SVS | S |
| **Leabrook** | MS | MS |
| **Maximus CL** | MRMS | MS |

In combination with NFNB, there is also SFNB to contend with and is a lot more commonly seen. Yield loss from SFNB can be in the order of 5 – 15% while NFNB has a bigger risk of 10 – 20% subject to environment and seasonal drivers. In general, the flag leaf and the two under it need to be infected for yield loss to occur so management should be targeted at protecting these upper leaves as opposed to spraying too early. Monitor barley crops and apply a foliar fungicide when the percentage of leaf area affected by net blotches is greater than 10 per cent. Yield improvements from fungicide application are most likely where the

disease is severe and grain yield potential yield exceeds three t/ha. For best suppression, foliar fungicides should be applied during early stem elongation (GS 31) and flag leaf emergence (GS 39). Application at late tillering (Z25) has also been shown to be effective in the drier Mallee environment. A single application of foliar fungicide may be insufficient to eliminate grain yield and quality loss where seasonal conditions favour net blotch development. A two-application strategy may be warranted. In respect to ID while SFNB is characterized by spot like lesions with yellow margins, NFNB is identifiable by dark brown streaks running along and across leaf blades creating a net pattern with yellow margins. Susceptibility of varieties to these diseases is in Table 2. Growers and agronomists are encouraged to monitor crops for signs of fungicide resistance. Suspected instances of fungicide resistance can be reported to the Horsham Field Crop Diseases research group or the Fungicide Resistance Group at Curtin University.

**White leaf spot (WLS)** is a very common disease of canola that occurs on the leaves of seedlings but can spread up the canopy if wet conditions prevail. Infection reduces leaf area which may cause reduced biomass accumulation and consequently reduce yield. Outside the high rainfall regions however this is very uncommon. Not many canola fungicides have this disease listed on the label however where products have been applied for blackleg control, control of WLS has also been observed. Management for WLS independent of other diseases is generally not warranted in the medium and low rainfall regions

White leaf spot infection of canola (C. Taylor)

**Paddock zoning:** Given the strong soil type drivers to establishment in many regions if you are looking to zone paddocks based on soil type and using NDVI imagery, this year could be good to consider it. Keep in mind all zoning needs ground truthing to be sure that you are not picking up unintended effects like weed burdens, pest and herbicide damage and to understand the zone characteristics and why they may be different.

**Livestock:** Pasture growth is better where rain fell early and on lighter soils, but feed demand remains high while autumn lambing ewes still have lambs at foot and later lambings begin. Ewes in good condition can utilise body fat reserves to sustain milk production and buffer against changes in milk composition when pasture is limited but keep supplementing lighter ewes where feed supply falls short of requirements. Ewes selected for calm temperament will give better maternal care, spending longer times grooming, low pitch bleating and cooperate with lamb sucking behaviours, stimulating thermoregulation, promoting ewe lamb bonding and better lamb survival. Lambs are mostly nourished by milk for the first 3 – 4 weeks but begin copying mum and picking at grass from the day they're born. By 2 – 3 weeks pasture intake increases and the rumen develops, so that by 8 weeks milk is only 10% of the diet. If early weaning is a consideration, imprint or creep feeding lambs will help them adjust at weaning. Reaching body weight targets with growth rates at weaning is important for survival and future production; lifetime production (liveweight, wool, lambs) of those that will become your replacement breeders, and growth rates for lambs you plan to sell.

**Grain market snapshot:** On Tuesday night the USDA released another World Agricultural Supply and Demand Estimates report, nothing too unexpected in the report but the immediate market reaction was a jump in prices for wheat, corn and soybean. Some harvesting has commencing in the northern hemisphere with talk of strong barley yields in various black sea countries, but it's still very early. At the same time there is a lot of concern about the heat and dryness across Canada and northern USA states. The situation in Canadian is always one to watch as Canadian is a major producer of canola and lentils so the country's production can readily affect our local pricing for these two important commodities. The below table shows new crop grain prices, based on Geelong port equivalent as at July 12th 2021.

**Table 3. Indicative wheat, barley and canola prices, Geelong port zone as at 12 July 2021.**

| Commodity | 2021/22 season | Compared with last fortnight |
|---|---|---|
| **APW wheat** | $300 | Down $5 |
| **CAN non-GM** | $775 | Up $45 |
| **BAR1 barley** | $250 | Down $10 |
| **Faba beans (del Wimmera)** | $360 | Up $20 |
| **Lentils (del Wimmera)** | $780 | Up $25 |

**BCG Research Update:** BCG is in the final year of working on the GRDC optimising plant establishment project. After a lot of tweaking of seeder setup over the years, there is a distinct visual difference in evenness of seed placement

between precision and conventional seeders in beans at Wallup. The research team is in the process of collecting data on plant numbers, spacings and depths and will analyse whether differences in establishment effect final yields.

**Figure 1. Conventional (left) versus precision (right) seeded beans sown at 20 plants/m2.**

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