

Summary

The 2016 Season

August rainfall has been average to above average across the WA grainbelt with temperatures mainly below average and many growers have commented on how cold the 2016 winter has been.

Crop growth slowed somewhat during August but this in-turn increased crop potential in many districts by reducing evaporation and increasing the amount of soil water available for grain fill. Consequently, crop yield potential has risen slightly but with the impact of several frosts in August yield may still be unfavourable.

September presents a high risk time for frost impact on grain production. Due to the early and substantial crop development this season, the frost risk period is occurring earlier in September rather than mid to late September. Frost was reported during August and has caused extensive damage to barley and some wheat in the north eastern districts of the Kwinana zone. Elsewhere, frost has damaged lupins and canola crops but to a much smaller degree and with a better chance of compensatory growth and little final yield loss.

All major in-crop paddock operations have been completed in most regions. Some disease management is still needed in the Albany and Esperance port zones, but this is largely restricted to barley. Aphids are being monitored and some control is likely to be needed as temperatures rise this month. Overall, there appears to be no significant threat to crop yields or grain quality from pests or diseases.

Soil moisture in the Geraldton zone is adequate in northern districts and very high in southern districts. For the Kwinana zone, western districts are wet while eastern districts have high levels of soil moisture. In the Albany and Esperance zones soils are wet in the southern and coastal districts, with waterlogging causing very large losses of production. The Lakes region is generally wet while the Mallee districts in the Esperance region have adequate soil moisture.

The Albany and Esperance zones would benefit greatly from a mild and sunny September. Other regions are looking for mild to warm temperatures to allow grain fill to occur in optimum conditions. A burst of temperatures over 30°C will risk reduced yield and grain quality.

While a majority of crops could yield well without any further rain for the season, average September rainfall would ensure that the 2016 season sets a record for grain production.

2016 WA Crop Production estimates (tonnes)

Port zone	Wheat	Barley	Canola	Oats	Lupins	Field pea	State total
Kwinana	5,562,000	1,255,000	643,000	435,000	192,000	15,000	8,102,000
Albany	1,887,000	1,300,000	474,000	293,000	60,000	9,000	4,023,000
Esperance	1,299,000	887,000	439,000	17,000	20,000	24,000	2,686,000
Geraldton	2,094,000	101,000	187,000	12,000	413,000	1,000	2,808,000
Totals	10,842,000	3,543,000	1,743,000	757,000	685,000	49,000	17,619,000
Since Aug 2016	1.1%	0.1%	-0.8%	-4.6%	1.5%	2%	0.5%

Note: the grain totals reported are for whole farm production. This includes on-farm seed and feed requirements as well as trade outside of the CBH network.

Kwinana Zone

The Midlands

Season remains exceptional in all respects in the Midlands region. Yields in 2011 and 2013 were exceptional but 2016 looks to be even better. Walebing has received 20mm less rain to date than in 2015 but crop conditions are significantly better. Waterlogging and frost will have minimal impact on yields, not likely to be very significant.

Most districts and all soil types have a full profile of soil water. Just average spring rainfall will be needed to finish crops. Cool temperatures during September will be the key to achieving the yield potential that crops are promising.

Wheat and Barley: have been affected by frost in susceptible landscapes in the Piawaning and Yerecoin districts. With flowering starting, the frost risk in early to mid-September is high.

Yield potential in cereals is exceptional though disease management remains a current problem to address. In barley, powdery mildew, spot type net blotch and leaf rust is apparent. In wheat, powdery mildew is the only disease of note.

Nitrogen applications have finished. On the deeper sands keeping nitrogen up to plants with the frequent rain events has been a costly challenge.

Canola: is maturing with petal drop occurring and seed set in pods advancing rapidly.

Where sclerotinia has been controlled well, yields will be spectacular. Swathing will commence in eastern districts at the end of September and around 25th October is likely to be a starting date for harvest.

Lupins: there has been some frost damage reported, mostly to primary pods and sclerotinia can be found easily in many. However, yields will be very high and the organic nitrogen input for 2017 crops will be very high also.

Kwinana east

A lot of early (mid-April) sown barley and wheat has been affected badly by frost on the northeast wheatbelt. The cold nights of early to mid-August caused almost total losses in some paddocks and widespread localised damage elsewhere. It is estimated that thirty to forty per cent of early sown crops may have above fifty per cent damage. The final total will be known after harvest but it is likely to be significant. Some reshooting of wheat tillers is happening but this is unlikely to compensate for the loss to any great degree. The primary stem of lupins have also been frosted but pod set on secondaries is going to provide good yields.

Aphid populations are increasing, though not needing control, with virus infections of some concern.

Canola: progressing well with district averages likely to be in the one to 1.4 t/ha range, certainly much higher than historical average yields.

Cereals sown after 10th May might need a further 20mm of rain to finish well. There is no disease threat of concern.

Cool conditions through September will be necessary to realise the current yield potential.

Kwinana west

The western districts of the Kwinana zone remain very wet after average August rainfall. Frost has affected a wide range of crops in a range of districts but the impact is only likely to be around ten per cent of yield in susceptible landscapes and where sowing didn't match the crop maturity, ie. sown too early.

Soil water levels are basically full in all districts and a single rain of around 20mm in late September, along with mild temperatures, will fulfil the current high yield potential.

Canola: apart from the effects of frost, canola is looking a treat in all districts with very high yield potential. Sclerotinia is causing some yield threat in canola but control has generally been successful.

Wheat and barley: powdery mildew can be found but the constant rain has held this at bay. Yellow spot and septoria are being monitored.

Lupins: sclerotinia is also affecting lupins, particularly high biomass crops, and is a concern for some yield impact and grain quality. Shading has affected pod set on the main stem with secondary and tertiary flowers likely to be the main yield contributors.

Albany Zone

Lakes region:

Above average August rainfall of 50 to 60mm, has been recorded across the lakes region of the Albany zone. Kukerin to Lake Grace have benefited greatly with increased deep moisture while the eastern districts of Newdegate to Lake King remain extremely wet. For most growers, one more rain event is needed to assure high yields. Yields will be affected in the Newdegate to Mt Madden districts by excess water.

Wheat: crops in all districts are looking very good. Growth stage was boot stage during the recent frosts and no physical effects have been seen to date.

For disease management, only powdery mildew can be found and this is not a big concern at the moment. Yitpi wheat has yellow spot and septoria as problems needing control.

Aphids can be found but the majority of crops have not been sprayed at this stage and most likely won't be.

Canola: has finished flowering and starting to form pods and set grain. Frost has caused some seed to not form in pods. Aphids are few in number and no other pests are apparent. Sclerotinia has not caused any problems to date.

Barley: looking exceptional, very big crops with very high yield potential. Leaf rust and spot type net blotch is requiring another fungicide application. Aphids can be found and anti-feed sprays have been applied where threshold numbers are being approached.

Early sown barley has been affected by frost and although widespread, the impact will be low.

Oats: yields will be very good. There is leaf rust in older varieties but very little in new varieties.

Lupins: a lot of biomass and low pods on the main stem. Field peas are gaining in biomass and ready to flower.

Southern Albany zone

The lower Albany zone has experienced what seems to be the coldest winter ever. Rainfall has been very high with 650mm at Kojonup and 500mm at Broomehill indicative of the wet conditions since April. 40mm in the last week has only added to the waterlogging issues.

The area of land affected by waterlogging is extensive. To counter this loss, well drained soils have very high yield potential. It is likely that final district averages will be above average.

The soil moisture profile is full and no further rain is needed to finish grain for this season. Apart from frost, heat stress is the biggest threat to yields due to the shallow roots of most crops.

Wheat: is at flag emergence stage. Powdery mildew can be found generally in Mace wheat and will need controlling.

Canola: plants have very shallow roots due the high availability of soil water. This has caused constant nutrient deficiencies (N, P, K and S). Foliar applications have helped but not solved the ongoing problem. Lodging is apparent with the shallow roots now unable to hold up the good growth. This may make harvest difficult but the bigger risk is low seed quality if the shallow roots can't access nutrients and/or moisture at final grain fill time.

Frost a few weeks ago has affected canola with empty pods easily found. The likely impact on final yields is not known at this stage. Overall, canola, where unaffected by waterlogging, is looking very good.

Sclerotinia caused early concerns with direct ground infection found, but later infections at petal drop have not occurred as expected. This is likely to be an outcome of the cold weather and welcome as it has saved a lot of fungicide work. Only around twenty five per cent of the expected fungicide use has been applied.

Early sown canola may be ready for swathing in late September/early October. The majority of the canola will be ready in mid to late October.

Barley: has passed ear peep stage. Bass barley is showing big effects from spot type net blotch and powdery mildew and may need a further fungicide. Due to this disease impact, it is likely to fall from favour in 2017.

Oats: yields will be very good in upper parts of the landscape with good drainage. In waterlogged paddocks, yields will be reduced for both grain and hay. Crops are being monitored for disease and some late control may be needed in older varieties.

Esperance Zone

Creeks are running everywhere from Mt Madden to Ravensthorpe and along the south coast. Yields in these districts and in the districts south of Cascades to Scaddan will be adversely affected by the season long excess water.

Moisture levels north of Scaddan to Salmon Gums are good but a further finishing rain will be needed to assure yield and grain quality. There are some concerns about the amount of nitrogen applied to crops with high yield potential in that the nitrogen quantity may be inadequate to produce good protein levels.

Generally, mild to warm temperatures with sunshine will be welcomed in the Esperance port zone.

Wheat: is at booting to ear emergence, with no pest or disease concerns.

Canola: is at petal drop with seed forming or formed in early sown crops. Swathing/desiccation will start in late September to early October. Temperatures have been too cold for aphid numbers to build to warrant control.

Barley: needs a further fungicide application to control spot type net blotch and leaf rust.

Geraldton Zone

The cool and wet weather continued through August in the Geraldton Port zone, and boosted crop potential. The level of soil water availability is very good heading into spring.

Eradu and Yuna have recorded about 100mm less rainfall than 2015 but crops are currently showing better potential through reduced evaporation. Cool temperatures have been significant in this regard as well. Records show the difference between 2016 and previous seasons. August in Mullewa has been 1.1 degrees Celcius cooler than 2015 and 6.5 degrees Celcius cooler than 2014.

Frost in the Dalwallinu to Perenjori districts has occurred but with isolated effects. Some frost has been reported with losses of flowers and pods in lupins and canola. Damage looks to be isolated and minimal.

Wheat: yields will be around two t/ha at Binu after 30mm of needed rain during the last week of August. This gives the district around 230mm for the year compared to 300mm at Mullewa and Pindar, because of summer rain, which received around 40mm for the month.

Mingenew to Badgingarra have received around 480mm for the year to date. Wheat is at the mid-dough stage in the north and flowering in the south. Wheat crops in all districts are looking exceptional. The even spread of rainfall means poorer sand soils also have very good yield potential.

Canola: Sclerotinia continues to be a big problem in and will affect yields despite good control. Canola is likely to be ready for swathing for early crops by mid-September. Direct harvesting is going to be a slow process this season in the very dense high yielding crops, and desiccation is likely to be needed. Canola yields overall will set records.

Barley: looking very good but with the usual leaf diseases, requiring control.

Lupins: have exceptional yield potential with fourth order branches now flowering. Sclerotinia can also be found with adverse yield affects. It is very likely that lupins will need to be cleaned after harvest to remove sclerots from the sample.

Insects are starting to become a problem with armyworm, budworm emerging. Aphid numbers are also increasing in cereals but control of all hasn't been needed yet.

Season Outlook

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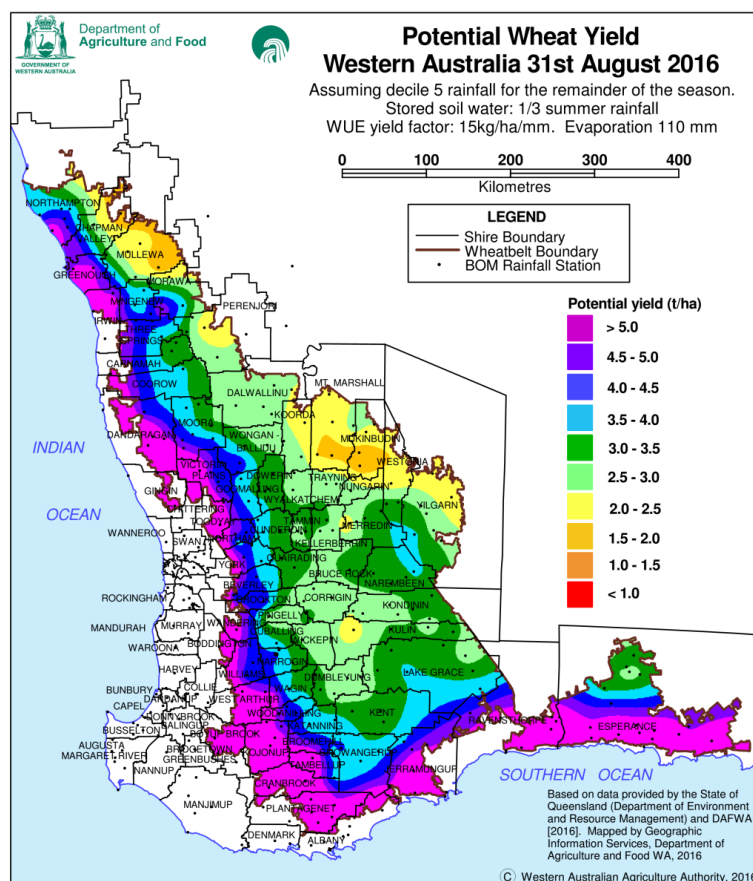
- While August rainfall was average or above average for most cropping areas, the winter rain (ie. June-August) was below average for most the south west and great southern.
- Rainfall totals since 1st April are near average or above average at virtually all locations in the Wheatbelt, thanks to good early season rain.
- August was cooler than average over the Wheatbelt with a series of frost events occurring at approximately weekly intervals. Worst events were 1st-3rd August, 18th-20th August and 23rd-25th August. Many stations recorded long periods of low temperatures, so impacts on crops are likely to be evident.
- Potential yield modelling still indicates high yields in many places, but this does not account for frost and disease impacts.
- Outlooks for seasonal rainfall for September to November are either neutral (no preference for wetter or drier), or for drier than average being more likely.

Potential Wheat Yield

Seasonal rainfall to date since April has been near average or better at most locations in the cropping area. This has added to water availability resulting from summer rain. More recently, rainfall in the past three months has been below average for much of the central cropping region, and above average along the South Coast.

Modelled potential yields using rain to the end of August shows little change from last month, indicating well above average potential crop yields in many areas. August has seen a series of frost events about a week apart. The most severe events occurred in the first and third weeks of the month. Many stations recorded long periods of low temperatures, so impacts on crops are likely.

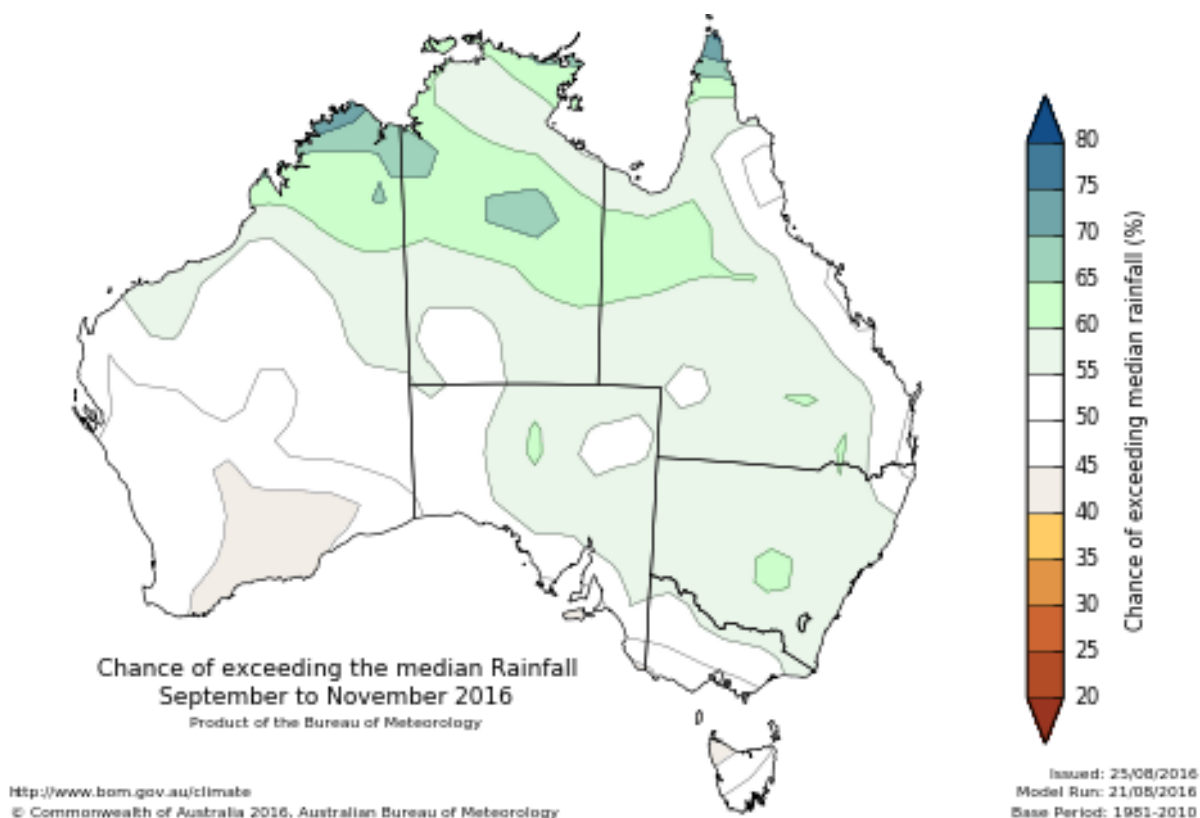
Predicted yields using locally generated WUE and Evaporation data can be created using the DAFWA Potential Yield on-line tool. (<https://www.agric.wa.gov.au/climate-weather/potential-yield-tool>).



Bureau of Meteorology: 3 month outlook, September to November 2016

Summary

- Spring (September to November) rainfall is likely to be above average across parts of northern Australia. Elsewhere, the chances of a wetter or drier spring are roughly equal.
- Warmer days are likely across much of Australia, except eastern NSW and southern Queensland.
- Warmer nights are likely for Australia, except south west Australia, north east NSW and south east Queensland.
- Climate influences include a weakening negative Indian Ocean Dipole, and tropical Pacific Ocean temperatures which may approach, or briefly exceed, La Niña thresholds.
- September is likely to be wetter in localised areas over northwest WA, southern NSW and southern Tasmania, but drier in parts of southern WA.
- Historical outlook accuracy for September to November is moderate to high over most of Australia.



Additional information can be sourced from:

- [DAFWA: Seasonal Climate Information](#)
- [DAFWA: Potential Yield Calculator](#)
- [BoM: WA Seasonal Rainfall Outlook, next 3 months](#)
- [BoM: Month to date rainfall for WA](#)
- [BoM: Decile rainfall for June to August 2016](#)
- [WX Maps: 16 day rainfall outlook](#)