

## Summary: The 2016 Season

In what promised to be a record breaking season for the majority of regions in Western Australia's grain belt, widespread and multiple frost events in September and October have reduced forecast production to just over 15 million tonnes from a previous mid-year estimate of around 18 million tonnes. This is an 11% reduction on GIWA's October estimate and includes approximately 1.5m tonnes of grain retained on farm or traded outside the CBH system. The final impact of the frosts will not be known until harvest is complete, and there remains downside potential to the forecast, particularly in the areas centred around the districts of Miling, Dalwallinu, Beacon, east Merredin, Corrigin, Lake Varley, Hyden (among others) and the Mallee districts in Esperance. Frost can have a devastating impact on individual farming enterprises, and local rural communities. It is a testimony to the resilience and expertise of WA's grain growers that yields in those areas not affected by frost are tracking well.

The frost affected regions range widely across the state from the south east districts of the Geraldton zone, to a wide area of the Kwinana zone, the Lakes region in the Albany zone and the Mallee districts in the Esperance zone. The cumulative effects of the multiple frost events have resulted in heavy losses for individual growers through to a range of losses from around 10 to 30% for many growers through the above-mentioned areas.

While production losses are being recorded as harvest starts, grain quality issues are also evident. Barley has suffered extensive shrivelled and/or distorted grains unsuitable for the malting grade. However, on balance the quantity of malt grade barley is still expected to be adequate for market requirements.

For wheat, while still early, it is likely that frost affected grain will result in substantial amounts of grain being down-graded. This is particularly so in the Geraldton and west Kwinana zones where grain fill was occurring during the frosts. For the Albany and Esperance zones, grain fill had not started and the resultant grain quality from these regions should be largely unaffected, if not enhanced, for protein and size.

Canola appears to be the standout crop for yield and quality. While affected by frost, it seems more able to compensate for the effects. Yields recorded to date are above expectations with oil percentage estimates to be around 48%.

The pace of harvest has been slow due to the cold winter and cooler spring. Crop development has been delayed by upwards of three weeks, particularly in southern regions. This has, however, been beneficial to crop yields with the onset of early heatwaves known to reduce grain yields.

In the Geraldton zone, harvest deliveries are now at a good pace and picking up in the west and east Kwinana zones. For the Albany zone, harvest of canola and barley is only just commencing, with swathing still occurring along the south coast. In Esperance, the 2016 harvest is about four weeks later than last year with canola and barley deliveries coming from the northern districts.

**2016 October WA Crop Production estimates (tonnes)**

Port zone	Wheat	Barley	Canola	Oats	Lupins	Field pea	State total
<b>Kwinana</b>	4,376,000	883,000	692,000	435,000	204,000	11,000	6,601,000
<b>Albany</b>	1,393,000	1,045,000	433,000	297,000	53,000	6,000	3,227,000
<b>Esperance</b>	991,000	639,000	361,000	17,000	20,000	24,000	2,052,000
<b>Geraldton</b>	2,279,000	153,000	245,000	12,000	442,000	1,000	3,132,000
<b>Totals</b>	<b>9,039,000</b>	<b>2,720,000</b>	<b>1,731,000</b>	<b>761,000</b>	<b>719,000</b>	<b>42,000</b>	<b>15,012,000</b>
<b>Compared to Oct forecast</b>	<b>-13.5%</b>	<b>-16.3%</b>	<b>1.8%</b>	<b>0.5%</b>	<b>6.4%</b>	<b>-0.7%</b>	<b>-11%</b>
<b>Compared to 2015 harvest</b>	<b>-1.8%</b>	<b>-11.5%</b>	<b>12.2%</b>	<b>48.3%</b>	<b>59.1%</b>	<b>20%</b>	<b>1.3%</b>

*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.*

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## **Kwinana Zone**

### **The Midlands**

The frost impact has been widely felt in the Midlands region with Badgingarra recording some frost damage through to extensive damage from north Miling to west Dalwallinu and east of the great Northern Highway. Average yields at Dalwallinu have been reduced to 2.1 t/ha after expecting 2.5 to 3 t/ha.

Canola yields have been outstanding with 2.6 t/ha at Moora balancing other losses, Wubin 2 t/ha and Wongan Hills to 2.2 t/ha. The tops of hills are at 3.2 t/ha with frosted valley floor areas at 1.2 t/ha giving a good 2.2 t/ha average.

The best districts for canola are yet to be harvested so the story will improve further.

West Wubin, Pithara, Milling 2.2 to 2.4 t/ha; Piawaning, Moora at 2 t/ha with best at 2.6/2.8 t/ha; oil is good at 48 to 50%.

Barley in the Midlands region has suffered a lot of damage. Even good size grain has frost wrinkles and final quality is hard to gauge. There is an unusual amount of frost damage as far west as Badgingarra. Harvest is slower here as green tillers are causing moisture problems. Some 5 to 6t/ha crops are only achieving 1.2 t/ha where averages should have been 3.5 t/ha.

Oaten hay is cut and baled with good quality, though cut slightly later than normal to avoid September rain. Very high yields have been recorded at over 10 t/ha.

Lupins look promising albeit with signs of sclerotinia and some frosted grain in the pod. Yield averages will be over 2 t/ha.

The wheat frost impact is still unknown, and estimated at 50 to 60% damage to 15% of the affected areas. Some 3 t/ha paddocks may have been knocked down to as low as 600kg. The forecast average yield for the Dalwallinu shire has been reduced from 2.8 to 2.1 t/ha.

### **Kwinana East**

Frost has had a widespread, if inconsistent, impact on crops throughout the Kwinana east zone.

The difficulty in forecasting yields is that multiple frosts have caused different types of damage, including stem frost, flower frost and grain frost.

Some paddocks have suffered up to 95% damage. All affected paddocks need harvesting for stubble management, with the majority producing more than enough grain to cover the harvest operation. In a heartbreaking situation, many farmers will have lost more grain than they finally harvest.

Frost was extensive around the Moora flats to north Dalwallinu to Lake King and Salmon Gums.

Harvest is slowly gathering momentum in the Kwinana east zone. Some areas in canola paddocks are still green. Early harvest results for canola in eastern districts are showing over 1.2 t/ha averages with final yields possibly reaching 1.5 t/ha. In western districts, TT canola yields range from 1.5 to 2.2 t/ha. Benito is doing well at 48+% oil, but Sturt is low at 44% with 1.5 t/ha.

The barley harvest has started, but has been delayed by the green sappy tillers that appeared after the frosts. In western districts to Kalannie and Beacon, barley is either good or terrible with 3.5 to 4 t/ha on the hill and only 1.5 t/ha with skinny grain on the flats. Many of these are still making malt grade. Barley at Dalwallinu has achieved 2.5 t/ha, and at Koorda 1.8 t/ha, with a range of 1.4 to 2 t/ha. Barley around Bonnie Rock with 3 t/ha potential has produced just 1 t/ha. Frost at Wubin appears worse west of the highway than east. No frosted crop has been cut for hay.

Some loads of barley have failed the F3 grade, showing the extent of shrivelled grain. No malt deliveries have been reported to date due to low protein where yields are > 2 t/ha and screenings in frosted crops are 1.5 t/ha. Looking for any positive to come from this situation, livestock farmers are considering green feed potential from screenings germinating after a cyclone in summer.

Early wheat yields at Koorda indicate around 1.5 t/ha, with Mt Marshall around 1.4 t/ha.

Oats are yielding a pleasing 2 t/ha.

Lupins have been badly frosted in general and will yield poorly.

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## **Kwinana West**

Canola is the pick of crops throughout the Kwinana zone. Some amazing yields are being seen in a range of environments, along with very high oil contents.

At Merredin, one grower reported an average over 700ha of 1.7 t/ha with the best paddocks yet to be harvested. Oil content is excellent at >48%. Canola at Kellerberrin is averaging 1.8 to 2 t/ha with 49% oil.

Frost impact shows that barley has suffered greatly and forecast yields have been reduced by a further 10%. Initial harvest results show light weight grain. Unfrosted areas are yielding 200% of the average but the paddock yields will only be average overall with the good quality areas used to make frosted grain deliverable. Some malt grade will be delivered but some of the better quality grain will be blended just to get the frosted grain into feed grade. East of Merredin, the worst areas in barley are yielding just 600 to 700kg/ha, with the unaffected areas at 1.5 to 2 t/ha.

For wheat, it is too early to forecast the impact of frost on quality.

Overall, the central wheatbelt has suffered around 20 to 30% frost damage. There is no significant hay production from frosted crops.

## **Albany Zone**

### **Lakes region**

Severe and multiple frosts during September to early October have caused widespread damage to crops in the eastern Lakes region, equating to some millions of tonnes of lost production. The region's frost threat is diminishing with the change to warmer weather. In the past four weeks more frost damage has been recorded than previously known at Dumblebung, Dudinin and Kukerin.

The current estimate is that up to 40% of the Albany zone has 40% yield loss. Potentially, this equates to 2 million tonnes.

No harvest of note has occurred as yet. One canola crop with frost damage has achieved 1.5 t/ha. Decent district averages will still be achievable as unaffected canola crops will balance frosted ones.

Initially, barley appeared to have suffered more than other crops, but further inspection shows wheat has been impacted more heavily than first thought.

Canola: with harvest still to commence, crop-topping and desiccating is being finalised ahead of some warm weather. Late weed control is needed even where there isn't much grain to harvest.

To indicate the high potential of the season, oaten hay has yielded 1 to 2 t/ha higher than anticipated, with yields of 7 to 8 t/ha common.

Frosted wheat hay has reached 6 t/ha, but not over a lot of hectares. Hay is being cut by a few over a big area rather than many over a smaller area.

Lupins with poor early pod set now look to have a very good pod set and yield potential.

Crops are mature enough to avoid any further damage from heat shock with coming hot spells.

Where harvest has started in western districts, the biggest impact is in barley for yield and quality, with a lot of lightweight grain and quality problems. Malt quality is worth chasing with the current \$40 spread from feed.

Wheat quality would seem to be unaffected with the frost occurring before grain fill in most cases. It should lead to large grain but the final grain protein percentage is unknown.

Canola will finish at district averages. 2 t/ha potential crops look to be worth about 1.5 t/ha. Canola wasn't susceptible to the early September frost and recovered from the later frosts. Frost generally took the cream with only a few wipe-out paddocks.

Oats are looking very good with just 15 to 20% damage in newer varieties due to them being at a vulnerable growth stage as the frosts occurred. The new (milling trial due February 2017) earlier sown variety Durack appears to have suffered the most damage.

### **Southern Albany Zone**

In the lower Albany zone, more frost damage is starting to appear on wheat which now appears to be in worse condition than barley. The main damage in wheat is a combination of stem, flowering and head frost. Canola has a degree of frost damage as well.

It will be late November before harvest ramps up in most districts; most crops are still being swathed or desiccated. Some districts east of Albany have started harvesting canola, with canola at Gardiner

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yielding over 2 t/ha.

In the south coast districts there is some frost noticeable with limited impact. Barley appears to have suffered a 10% impact. Some screenings and light weight have been seen, but not much of anything has been harvested yet.

Inland to Borden and Ongerup has seen more frost damage averaging at about 10 to 15% with a few crops damaged to 70%.

Ergot will likely be a harvest problem with weeds starting to appear due to the wet season. Late crop-topping of registered crops may be useful in knocking any quality threat from ergot. The APVMA has this week issued an emergency permit 82594 (valid until 31 July 2019) for the use of two Nufarm glyphosate products on all barley except malting barley (covers food, FAQ and feed). Growers are encouraged to check their marketing and delivery options before using Nufarm (Weedmaster DST and Weedmaster Argo) glyphosate on barley for ryegrass ergot management because Western Australia's chief barley market, China, has a nil tolerance for glyphosate on barley.

## Esperance Zone

The start to harvest has been slow with crops taking a long time to mature and dry down. Harvest for 2016 is one month later than in 2015 after a similar season.

The Mallee districts of the Esperance zone have been frosted badly. It is estimated that 15% of the area has lost about 50% yield potential, equating to a loss of around 150,000 tonnes. Wheat and barley in the Grass Patch district appear to have lost about 20 to 25% from frost, while cereals at Salmon Gums have lost far more. Frosted areas of canola are down to 1.2 t/ha, where 2 t/ha was forecast. Little frost has been recorded at Cascades, and canola is returning 1.7 to 1.9 t/ha with 49% oil.

Green material is slowing harvest in barley and grain drying is being used to keep harvesters rolling.

## Geraldton Zone

Eastern and southern districts of the Geraldton zone are susceptible to annual risk of frost damage, though not as severe as in the Kwinana and Albany zones. Frost effects have been seen at Dalwallinu, Perenjori, Buntine, Maya and Coorow. Yellow sand soils from Miling to west Dalwallinu have seen some severe crop losses.

From west Perenjori to Bunjil, higher parts of paddocks are producing record yields to balance the valleys which have been hit hard with frost, resulting in expected paddock averages. Unusually, frost has been recorded at Warradarge to Eneabba on south-west and west slopes.

Canola yields have definitely been underestimated to date. Canola yields range from 1.8 to over 3 t/ha in Midlands districts for very early sown crops. Deep soils with March/April sowing is yielding 3 t/ha, while delayed sowing to late April has yields back to 2 t/ha.

An average Hybrid RR canola is producing 800 kg/ha more than TT canola. At Arrino, deep ripping to 500mm is producing 700 kg/ha more canola on a base of 3 t/ha.

Canola at Binu and Yuna is yielding 1.2 to 1.8 t/ha with just 200mm of rainfall. The cool mild finish is the key here.

Wheat: from Canna to Tardun, there is a lot of GP wheat with distorted grain and low protein being downgraded. Weight is good. Sceptre wheat is out yielding Mace by 300 to 750 kg/ha over a number of comparisons. Other districts are achieving good quality but with protein at 10.5%.

Lupins at Eradu are yielding up to 3 t/ha, Yuna to 2 t/ha. These are the best yields for some time. The new variety Jurien is performing very well, yielding 4.1 t/ha compared to the old variety of Mandelup at 3.5 t/ha. Sclerotinia is causing lupins to be graded to remove excess sclerots and the infection has promoted some lodging.

Most barley varieties in the northern Geraldton zone are feed varieties. Scope and La Trobe varieties have achieved malt quality. Yield indicators include Hindmarsh and La Trobe at 2.5 to 3 t/ha, with yields at North Mullewa to 2.5 t/ha and Tardun at 2.2 t/ha.

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## Season Outlook

### Ian Foster, Grains Industry Directorate, DAFWA

The weather looks to have settled into a summer mode with the first half of November being fine and warm to hot. The remainder of November should be similar.

Looking to December, the outlook is neutral for rain and average conditions are most likely.

The climate outlook sees the Pacific developing a weak La Nina. Combined with warm water to Indonesia, this will help promote cyclonic activity over summer and autumn.

With the return of summer, soil temperatures will now start to rise, resulting in Locust hatchings increasing with the warm weather.

### Bureau of Meteorology: 3 month outlook, November 2016 to January 2017

#### Summary

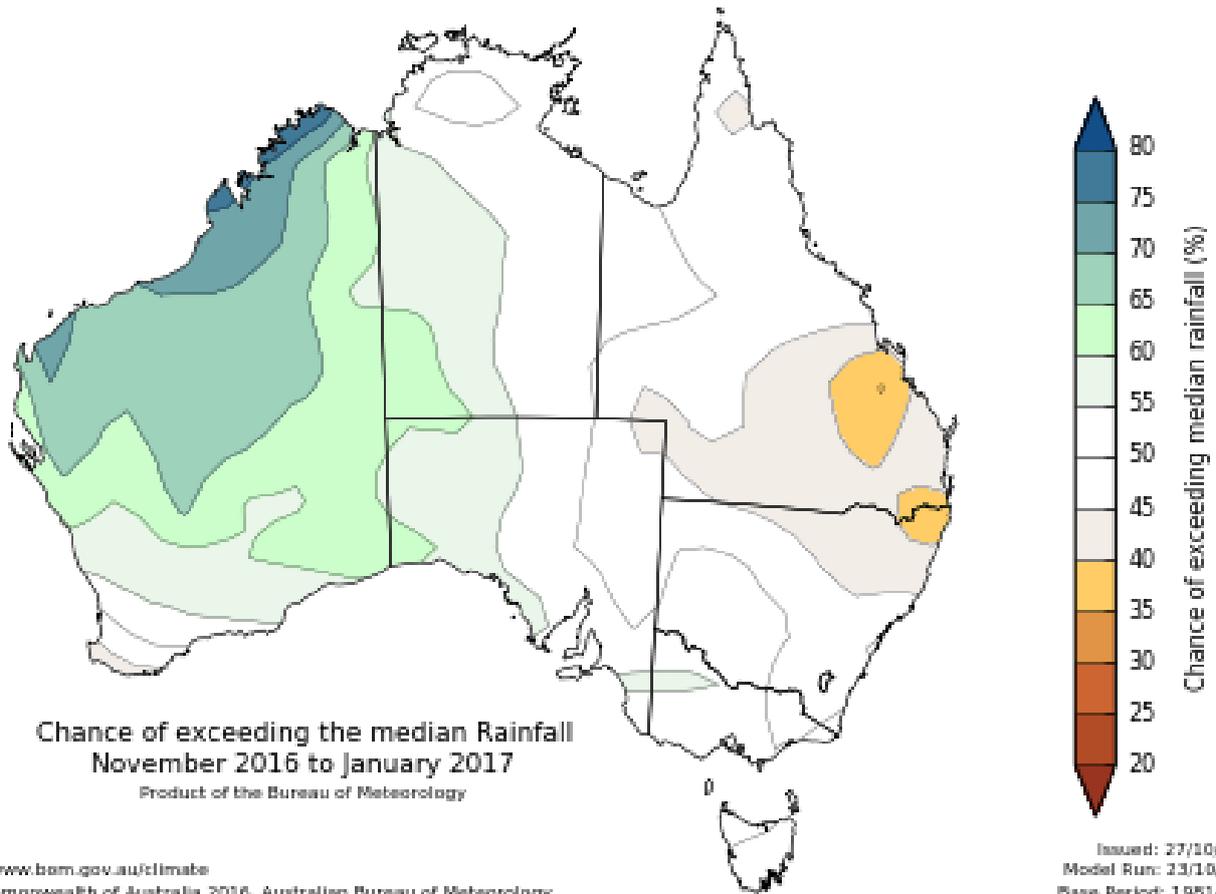
- November to January rainfall is likely to be above average across large parts of WA. Conversely, rainfall may be below average in some areas of southeast Queensland.
- Warmer days and nights are likely across parts of eastern Australia and far western WA, with cooler days and nights likely for other areas of WA.
- Climate influences include a weakening negative Indian Ocean Dipole, an ENSO-neutral tropical Pacific, and warm seas around northern Australia.

#### Rainfall

- November is likely to be drier across southern mainland Australia, but wetter across northwest Australia.
- November to January rainfall is likely to be above average across most of WA, except the southwest. A small area of southeast Queensland is slightly more likely to be drier than average. For other areas, the chances of a wetter or drier three months are roughly equal.
- The current outlook reflects a weakening negative Indian Ocean Dipole and an ENSO-neutral tropical Pacific. For November, a strong climate influence is likely to be a shift north in the position of westerly winds (the "Southern Annular Mode") that affect southern Australia.
- Historical outlook accuracy for November to January is moderate to high over eastern and western parts of Australia, and parts of the Top End of the NT. Across central Australia, extending from eastern WA to western Queensland and much of SA, accuracy is low.

#### Temperature

- November to January days are likely to be warmer than average for parts of eastern Australia and far western WA. Days are likely to be cooler than average in eastern WA.
- Night-time temperatures are also more likely to be warmer across eastern Australia and far western WA, with nights more likely to be cooler than average for southern WA.
- The current outlook reflects a weakening negative Indian Ocean Dipole, an ENSO-neutral tropical Pacific, and warm ocean temperatures around Australia's northern and eastern coastlines.
- Maximum temperature accuracy is moderate to high over most of Australia, except to the south of the Gulf of Carpentaria, where accuracy is low. Minimum temperature accuracy is moderate to high over much of the country.



<http://www.bom.gov.au/climate>  
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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 August to October 2016](#)
- [WX Maps:16 day rainfall outlook](#)

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