

WHEN you hear the term “climate driver” – particularly when it’s then followed by a flourish of positive rainfall predictions – you could be forgiven for dragging the planter out in readiness for the next big one. And then when you hear that a couple of these climate drivers are simultaneously in the sweet spot for favourable rainfall, you’re probably also on the phone to the seed merchant, the fertiliser supplier, and what the hell, *Greenmount Travel*, to book next year’s overseas trip.



The two climate drivers of particular interest at the moment are the El Niño–Southern Oscillation (ENSO) – because it is in an established La Niña phase – and the negative Indian Ocean Dipole (IOD) event. And when La Niña and negative IOD conditions combine, and I quote the Bureau of Meteorology here: “the likelihood of above average (spring) rainfall over Australia is further increased, particularly for the eastern half of the continent.”

We have good records for the past 40 years or so on IOD events plus we’ve been able to accurately identify ENSO phases for a lot further back than that. So I thought it would be an interesting exercise to pick a handful of eastern states’ grainbelt locations and go back about 40 years cross-referencing the spring rainfall amount for that area with years when a La Niña coincided with a negative IOD phase. It’s hardly rigorous science but at the very least, it’s an interesting way to check if that critical spring rainfall was higher than average in those periods at those locations.

BOM records indicate that since 1980 there have only been four years in which we have had a declared La Niña event (or La Niña alert) coinciding with a negative IOD phase leading into spring. The years have been 1998, 2010, 2020 and 2021. And we are right in the middle of another one this season. If you cross-reference the recorded and average spring rainfall in those four years for five representative locations (20 data points) – Emerald (Qld), Dalby (Qld), Dubbo (NSW), Horsham (Vic) and Kimba (SA) – some interesting numbers emerge.

In only three out of these 20 spring seasons was rainfall less than the mean for that location (Kimba in 1998 plus Dalby and Dubbo both in 2020). At Emerald, Dalby and Dubbo, rainfall was more than 25 per cent above average in nine of the 12 spring seasons, and more than double the average in four of them (i.e. Emerald in 1998, 2010 and 2021 and Dalby 2021).

On this simple analysis, when the ENSO (La Niña) and IOD (negative phase) climate drivers team up, they are pretty good predictors of above average spring rains to come for the eastern Australian states.

Another big winter crop on the way

We are mid-way through the third year in a row of very high growing season rainfall for winter crops. But there are many growers in central and northern NSW as well as southern Qld, who would argue just how favourable the persistent rainfall has been. According to ABARES, the upshot is a predicted winter crop of more than 55 million tonnes – the fourth biggest ever. And this year, the love is being shared with all states expecting harvests well above their 10-year averages.

Here’s hoping these expectations become grain in the bin.

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Nitrogen for nothing, protein for free

Nitrogen is key to producing the world’s crops – but it comes at a cost. New research from CSIRO is developing future crops that produce their own fertiliser.



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Revolutionising fertiliser production

Scientists have achieved a new breakthrough in their quest to develop a more sustainable ammonia production process. Ammonia is the source of most of the modern world’s fertilisers.



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Soil organic matter and carbon at work

Soil organic matter is critical for healthy soils and sustainable agricultural production. This is not ‘news’ to growers, agronomists, or indeed anyone with a vegetable garden or compost heap at home. We know that healthy soils with high organic matter levels grow better crops that are easier to manage.



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Interesting early crawlers

The origins of track laying or crawler tractors extend back to the 1850s, during the time of the Crimean War. Throughout the course of the conflict the British army utilised a steam powered tractor designed by a military engineer named J. Boydel, for the purpose of hauling heavy artillery weapons.



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Grain quality during storage

Until recently, aeration systems have relied on American research from 1951 to model fan performance requirements to overcome the backpressure of various types of grain at varying depths. In 2022 highly accurate pressure and airflow meters, combined with an investment from the GRDC, has enabled research to determine the backpressure and therefore fan performance required to aerate Australia’s commonly grown grains at typical storage depths.

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