Frost 2019

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I'm a Freelance Agricultural Consultant based at Nhill in Western Victoria. I have farmed in Canada, Saudi Arabia and all mainland states of Australia.

Each year I undertake frost assessments as a senior consultant for Agri Business Consultancy Group via its Geelong Office. This has seen me assessing the impacts of freeze events from Victoria to Western Australia. In the assessing of insurance claims for other perils I also quite often have to take into account the presence of frost impact.

In Victoria the last several years have seen serious frost impact to predominately those areas north of the Great Dividing Range, and these events have been exacerbated by dry conditions and crops under stress.

Unfortunately, there have been several severe frost impacts in the Western District of Victoria in crops suffering little stress and seemingly beyond the Frost impact 'Danger Zone'.

There is no absolute safe flowering zone to aim for to mitigate frost impact. I have seen severe impact from early booting stage to grain fill. These more catastrophic events now seem to bookend the flowering impact in cereals that we have dealt with in the past.

There is much conjecture about what has brought the widening of the impact window, and even more as to what can be done to negate it.

The last three seasons in Western Victoria have had wet winters and dry springs. This has resulted in good crop germinations and excellent canopy development.

The dry Spring period has lead to a depletion of the soil moisture profile and the crop has begun to stress. This combined with the prevalence of intense high-pressure systems that track through the Great Australian Bight and load up with cold Antarctic air masses before passing over Western Victoria over a period of two nights, provides the ideal conditions for a heavy frost impact.

Frosts impact has perhaps been amplified with producers planting at earlier dates to maximise early growth and for example, aid in ryegrass suppression, with the aim to finish the crop several weeks earlier to avoid the tight finishes that have become the norm in the last decade.

Likewise, the latter season applications of nitrogen have perhaps lead to the synchronising of all tillers of the cereal plant to be flowering closer together and thus a greater percentage of the developing grain is exposed to any severe event.

Climate

These are just two examples of modern-day broad acre grain production that result in higher levels of exposure. And they are both derived from what is now a necessity to farm profitably.

On farm cropping logistics now requires the operator to be "before time and at worst on time", because to be late can lead to greatly eroded gross margins.

How to achieve timeliness and not increase exposure to severe frost events?

The two are inseparable, so maximise your attention to operational detail to mitigate the inevitable consequences. Be prepared to accept some loss to frost. A well-maintained crop has great potential for recovery. I have

seen many cereal and oilseed crops recover from 30% impact to less than 10%.

Diversify your varieties, and plant them both strategically regarding flowering and topography.

Apply a greater share of the crops' nitrogen requirement at the start of the season and become less reliant on topping up after tillering in susceptible areas. Aim to retain the plants' natural staggering of tiller maturity work for you.

Monitor stressed paddocks as a priority. They have less resilience to an event, less grains per head to lose and less ability to recovery. They also make the worst hay so are a commercial liability when baled.

When there is a frost event, visually inspect the paddock within three days, then return within the next week. This will enable you to truly know where your crop was before and after the event.

If you are going to make a decision to cut for hay, do not make it lightly as all potential for recovery of grain is eliminated once it is cut.

The grain that recovers often does so into a market that is rising in value. Look after those additional grains with sound management.

It appears that frost impact is the new normal

If there are no commercially available insurance products available that can offer adequate coverage and return, consider methods of self-insurance.

If you have a mixed farming operation, increase the number of livestock. Often the best return for the hay that you make from a frost impacted crop is by turning it into lamb, mutton or beef.

Purchase hay equipment to help ensure that the product you make - either for your own consumption or sale - is of optimum quality.

Conclusion

I believe that very rarely have we produced a broad acre crop without some level of frost impact. Be it 5% or 10%, the natural ability for the crop to recover has ended up with no net loss. The advent of modern farming practices and a changing climate has resulted in more consistent losses beyond the crops' ability to recover. Another modern farming practice is to accept this and manage this.

And most importantly, manage yourself to also recover from the personal impact frost can have. If you don't recover, your crop certainly won't.