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Pearson's Grain and Transport
Swan Hill Stockfeeds

Agronomy Newsletter August 2018

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Yield potential-

The crop on heavier soils are very underdeveloped and at risk of tiller abortion.

Lighter soils still look good- if we received the September median of 23mm a theoretical outcome of 1.5-2.0t/ha is possible.

Weather report

The season is starting to have that bad smell with fronts only delivering light showers, and the series of windy days. Recent rainfall at various locations is summarised below. I am now leaning toward using monthly medians as opposed to averages as averages can be drawn out by extreme historical rain events.

It's amazing how significant a few millimetres of rain assists crop health in a tight year. However we have been affected by the frost sequence in July, and the high winds in both July and August

	April	May	June	July	To August 16
Swan Hill 2018 actual	2.0	19.6	39.6	8.8	6.4
Swan Hill median	12.8	20.1	19.4	25.2	22
Ultima 2018 actual	3.0	27	39	13.4	11.3
Ultima median	14.5	32.3	29.1	29.9	36.3
Chinkapook 2018 actual	2.0	18.6	40.4	8.6	NR
Balranald 2018 actual	0.8	16.2	26.4	5.0	2.4
Balranald median	15.5	25.1	24.8	23	26.2

BOM climate models

SOI 12/8/18	-2.9	Neutral
90 day SOI	-1.9	Neutral
IOD 12/8/18	+0.16	Neutral
SAM	positive	El Nino influence

Throughout the year the two main weather indicators, the SOI and IOD have remained in neutral territory, yet clearly most of the south east seaboard is in dry conditions to severe rain deficit.

On the 14/8 the BOM reminded us that the currently positive Southern Annular Mode (SAM) is likely to be driving the winter rainfall pattern. In short, a positive SAM pushes the westerlies southwards and creates room for more high pressure systems over the inland.

Usually positive SAM events favour rain in NNSW and QLD, so again there is some inconsistency with predictive weather modelling. BOM do note that cool ocean temperatures to Australia's north-west has also been an influence.

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Chemical update

Le-Mat: omethoate registration in crops has been renewed. There are some details on latest application timings. Cereal Z29, canola and pulses GS 30 beginning of stem elongation. Nil harvest WHP and 14 day grazing WHP. A renewed pasture registration is imminent, also with a defined spray timing cutoff.

Evergol Energy: this cereal seed dressing has been reformulated with metalaxyl (Apron) to pick up Pythium and Crown rot and improved rhizoctonia suppression. The use of the Enteco oil is no longer necessary

Glyphosate: under scrutiny in California, USA and Brazil. In 2015 the WHO classified glyphosate as a "probable carcinogen". We all get asked about our chemical use by various people, so here is the logical response- The following *substances* are also classified by the WHO as "probable carcinogens"; red meat, very hot beverages. The following *activities* are classified as "probably carcinogenic"; deep frying, glass manufacturing, indoor wood fires, night work, hairdressing/barbering. The reality is, Green movement is selective with the facts and the Californian Judge has a career based motive…Will they try to shut down every coffee outlet and butcher shop too?

Weed trends

The dry year has influenced weed spectrums in crops; grass emergence in the break crops is down (so we expect brome to germinate next year), and lighter populations of turnip and mustard than usual.

It has been simple to clean up brassica weeds with 2,4-D on advanced crops with 2 or more tillers, or MCPA 750 on less advanced crops on heavy ground. Reminder: Whilst we can use amine products August onwards, phenoxy application rules still apply

We cannot use sulphate trace elements with 2,4-D or MCPA Amines, however ***ZIntrac and Coptrac*** are compatible.

Pretty much all of the vetch has had a grass clean, but not all medic pastures. If the grass in these pastures becomes too moisture stressed, our fallback position is a double spraytop with paraquat.

Zulu Evo 720 is a 720g/L 2,4-D DMA salt (a high load Surpass type) that is effectively priced for both the in-crop and knockdown markets.

Diseases

Spot form of net blotch has been seen in every Spartacus CL crop, but the severity varies quite a lot. Worst cases are where there is 2 year old barley stubble present- propiconazole use has certainly been a case by case basis, where it is seen to be moving to the new upper leaves.

No asco on lentils naturally- let's hope the heavens open up and we see a little bit!

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Light hay crops still an option

One of the challenges we had in 2015 was raking two windrows into one; more dirt and stubble in the final windrow. These windrows were also uneven and not well combined, leading to more wind disturbance.

Scott Douglas Contracting has a 30' Krone merger with 2 pickups- he can easily combine two windrows with minimal stubble and dirt

Scott can be contacted on 0428 871520

A self-propelled mower/merger in action

The green revolution

The contribution of crop breeding is sometimes forgotten in our progression in yields. Traditional breeding techniques deliver the equivalent of +1% per year. Clearly we have been tackling erratic rainfall, dry spells and frosts, so this gain isn't always obvious.

Recently the ***International Wheat Genome Sequencing Consortium*** announced they have fully mapped the genetic makeup of modern wheats. It has taken a while, but the modern wheat genome is actually 5 times larger than the human one, as the crop is basically a three way hybrid. The IWGSC has isolated 21 chromosome sequences and 107891 individual genes.

We have heard nutritionists saying it is a breakthrough for coeliacs and gluten intolerances. The big winner is being able to use DNA markers for the genes responsible for both biotic and environmental stresses. The IWGS believe annual genetic gains will be more like 1.6% p.a.- it is possible however the gains could be much greater for new wheats with tolerance traits bred in challenging environments like ours, where moisture stress, frost and heat are common.

Results of the 2016/17 national barley residue testing

1342 tests were conducted for chemical residues on barley nationally on 50 fungicide, 67 herbicide and 90 insecticide compounds.

The molecules tested to exceed MRLs and frequency were;

Fungicides; metalaxyl (1), thiabendazole (1) **Herbicides**; Paraquat (1) **Insecticides**; Imidacloprid (1)

The two fungicides detected are seed treatments, which suggests a hygiene issue. The paraquat herbicide case could be a crop topping error. No phosphine residues were detected, so people are doing well with observing withholding periods and aeration times.

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Managing off target spray drift

We are seeing district fruit trees and almonds in full bloom now, and vines at the woolly bud to budburst stage. It is a visual reminder that we have a responsibility to manage potential off target impact of any broadacre spraying activity.

Another thing to consider is the drift of certain products onto adjacent pastures or fodder crops, not so much for plant effects, but MRL implications for livestock. Whilst ***Velocity*** has a 6 week grazing withholding period for the cereal crop treated, it has a mandatory 250metre downwind buffer to pasture or land producing livestock feed. Similarly ***Precept*** has a 200 to 400 metre downwind buffer, because no MRLs have been established for those products on non-cereal crop plants.

There are 3 types of off target drift;

1. Droplet drift- a very common, but very manageable issue. Working with wind speed and direction is the key as gravity plus air turbulence pushes the droplets onto plant surfaces
2. Particle drift- happens when a droplet containing chemical evaporates in mid-air before the droplet is absorbed, and is carried by wind or inversion layers off site
3. Vapour drift- vapours are the gas phase of chemicals which are the result of evaporation from leaf surfaces, and most likely soil as well. Particle drift and vapour drift are very small and light particles and molecule groups so they can potentially move many kilometres from the actual spray locations.

Some action points-

Have a quality functioning weather meter such as the ***Kestrel 3000*** on hand, to help make decisions when to commence, or stop spraying. It also helps greatly with documenting spray operations. We will have a few in stock shortly.

Attend a spray application workshop- the local ag. Industry is organising two one-day events presented by experts in this field in September.

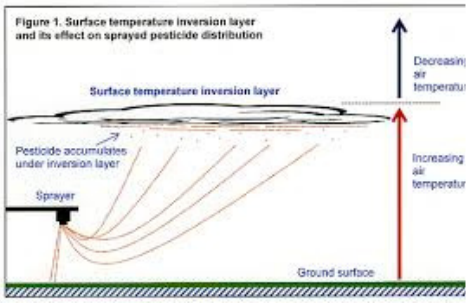
Always watch for inversion layers- these have the most potential to move large volumes of spray droplets or particles long distances

Reconsider night spraying- you may not be able to detect the presence of an inversion layer. Install on-board weather monitoring if intending to night spray.

Inversion layer meaning

A temperature inversion is where still warm air at ground level is trapped by a layer of denser cold air above it. Dust, smoke or spray droplets and spray particles can rise up to the point of elevation where the layers meet.

This height could be 150-1000 metres, so a minor inversion is like having a boom height of 150m. When the wind finally picks up, the chemical can potentially travel many kilometres.



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