

GROWING BARLEY IN THE GERALDTON REGION

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GRAINS RESEARCH
& DEVELOPMENT
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GROWING BARLEY IN THE GERALDTON REGION



What you are about to see and hear is general in nature and may not apply to your business or situation. Seek specific advice for your individual circumstances.

I am biased after 38 years working in agriculture.

Ask questions at any time! The “dumbest question is the one not asked”!

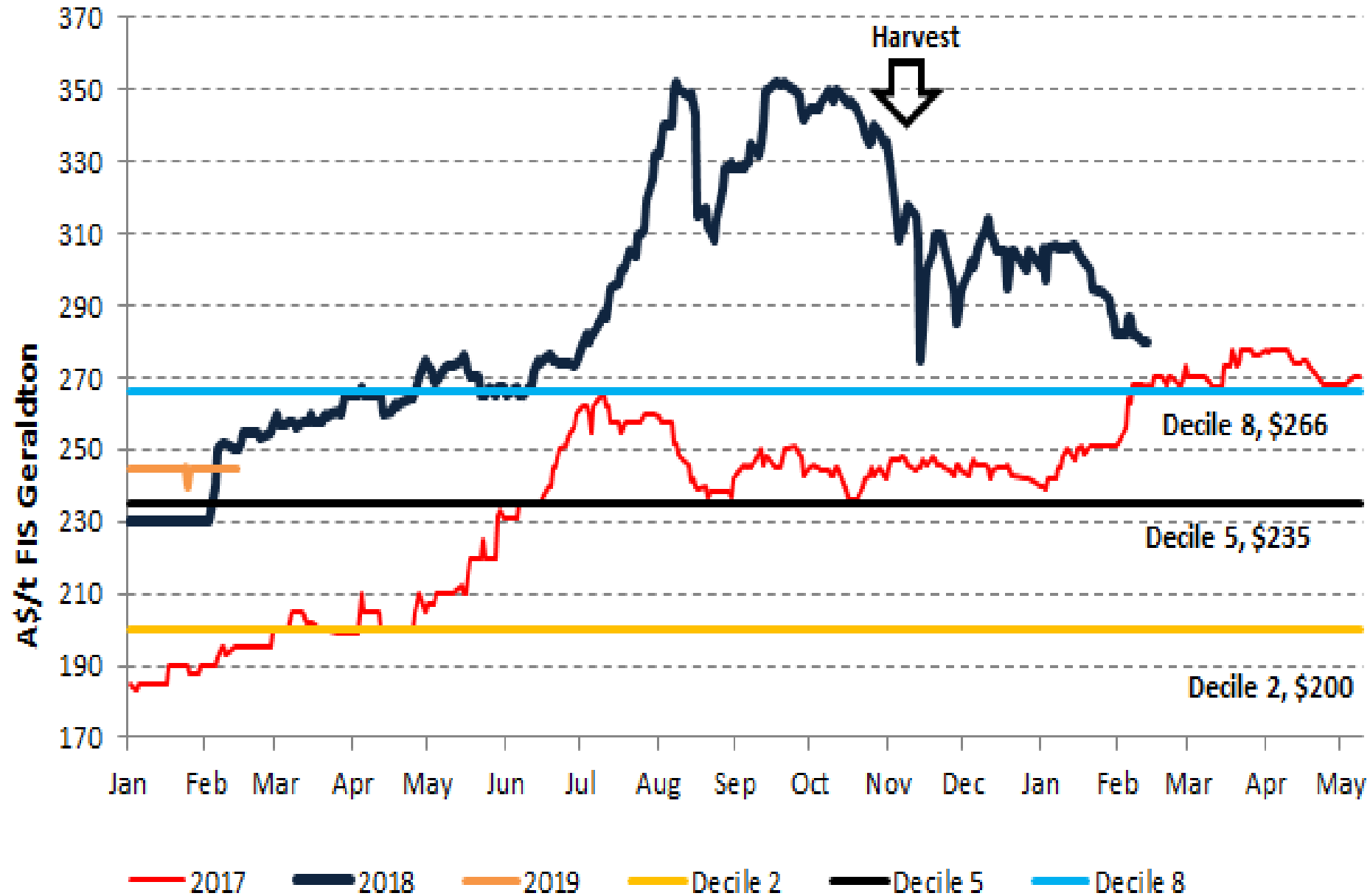
Pull my talk and our discussion apart and decide if some of it applies to your business.



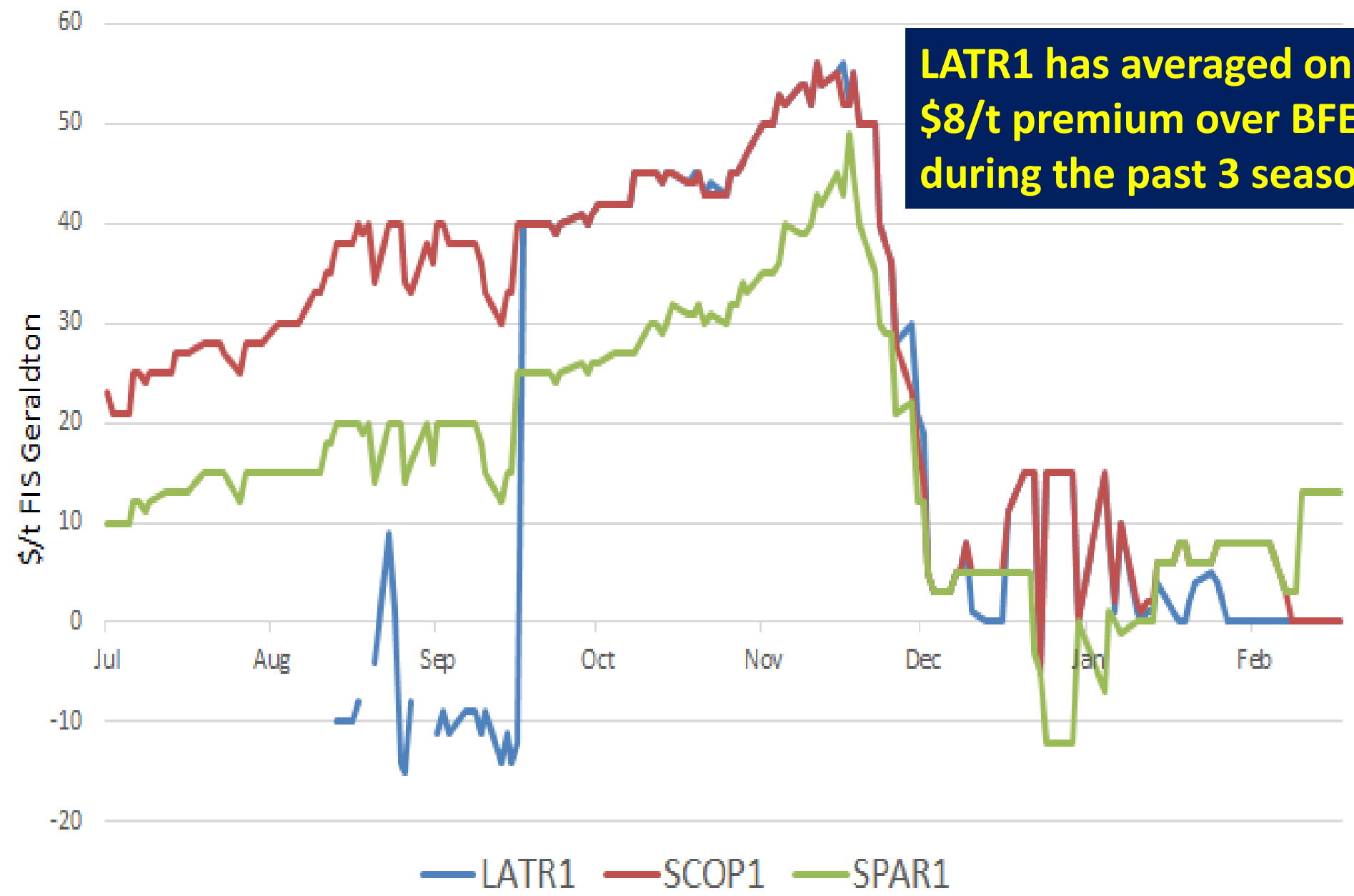
Four years of on farm results from East Mingenew

Season	Wheat yield (tonnes/ha) averaged over all rotations	Barley yield (tonnes/ha) as third year cereal
2015	1.92	3.05
2016	3.75	4.86
2017	1.98	2.58
2018	3.5	4.5
Total tonnes	11.15	14.99

Feed Barley Prices Since 2009

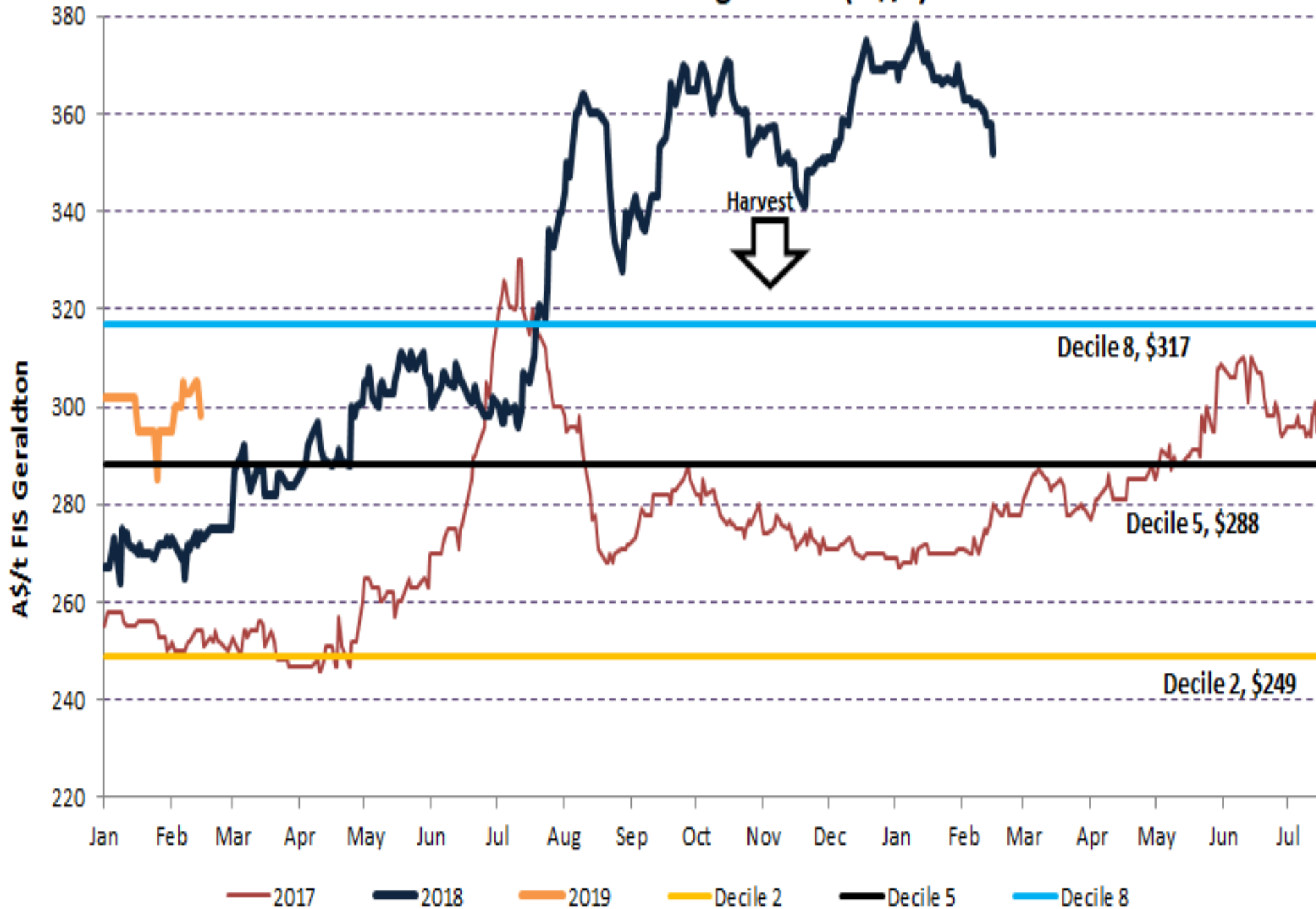


2018 Malt Premiums over Feed



LATR1 has averaged only \$8/t premium over BFED1 during the past 3 seasons

APW Wheat Prices Post Deregulation (A\$/t)



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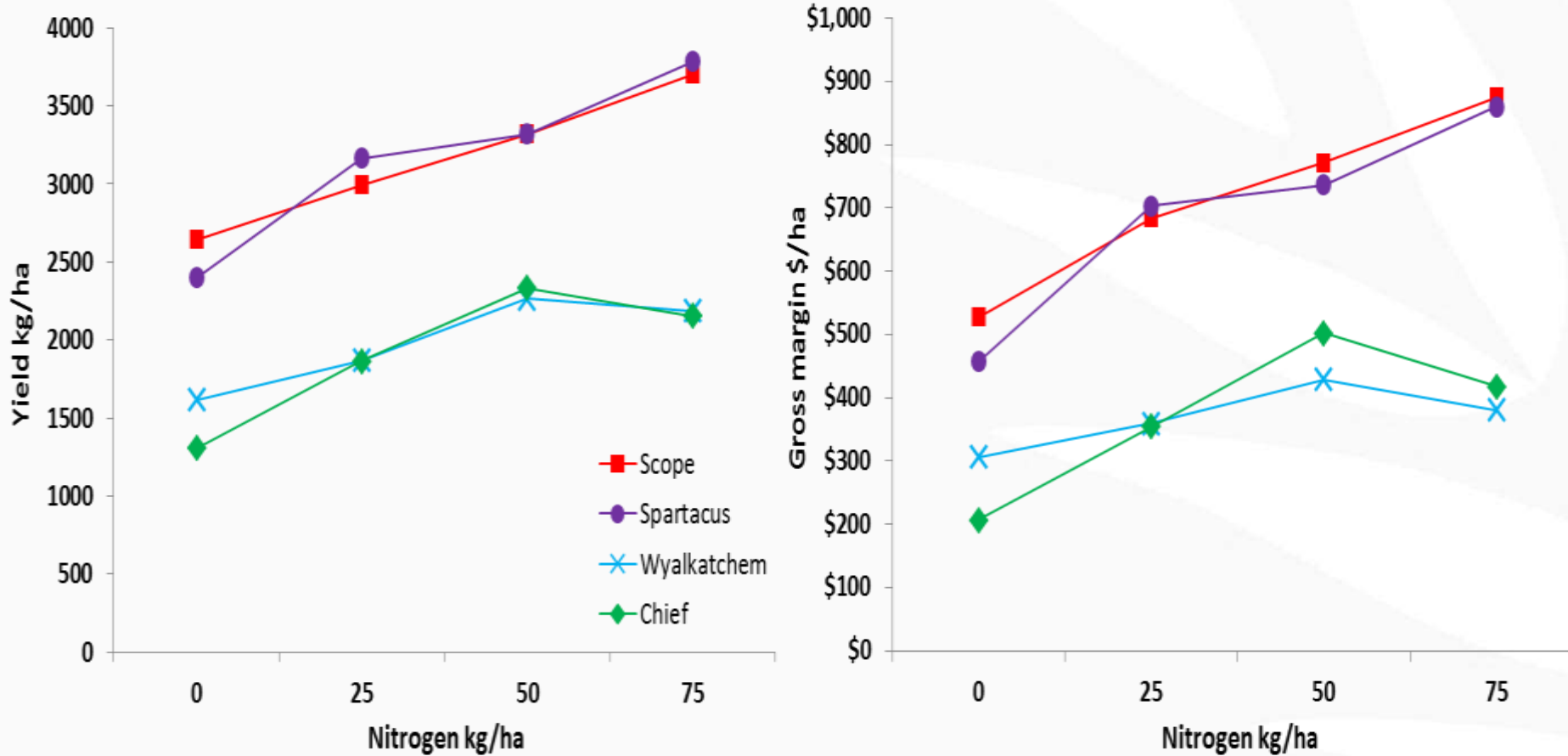
Gross income derived from all wheat and barley as third year cereal -:

Assume APW1 @ Decile 5 Gero price = 11.15t/ha x \$288/t FIS = \$3,211

Assume Feed @ Decile 5 Gero price = 14.99t/ha x \$235/t FIS = \$3,522

How does barley go vs wheat on paddocks with “grunt”?

Barley Vs Wheat on serradella pasture at Yallabatharra, (West Binu) 2018



Yields (left) and gross margins (right), of the barley and wheat varieties in the trial.
Prices as at 23/10/2018.

Courtesy of Adriano Rossi, DPIRD, Geraldton

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Variety selection -:

1. Rosalind (feed) – most consistent yielding over last five years.
2. **Spartacus (malt) – Most consistent yielding (slightly better than LaTrobe) and has option of utilising Imidazolinone herbicide chemistry.**
3. **Buff (feed possible malt) – White aleurone and acid tolerant with similar yield to Rosalind in last 3 years. Best barley where soil pH < 4.8 anywhere in soil profile.**
4. RGT Planet – (Malt) European direct import - Seems susceptible to stresses but when season is good it has very high top end yield.

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Yield components of barley -:

- **Plant density (NOT Sowing rate)**
- **Stem density**

RGT Planet

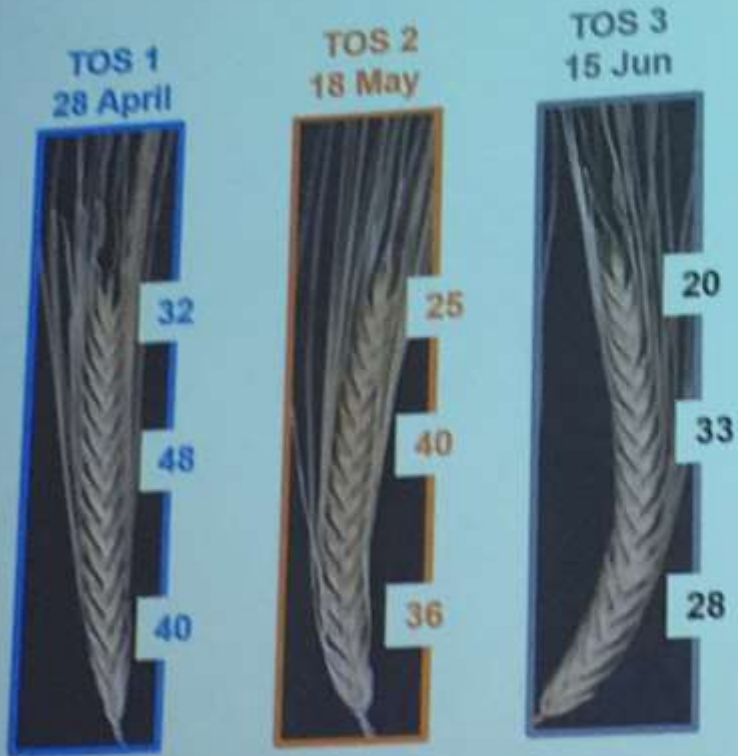
Latrobe

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Yield components of barley -:

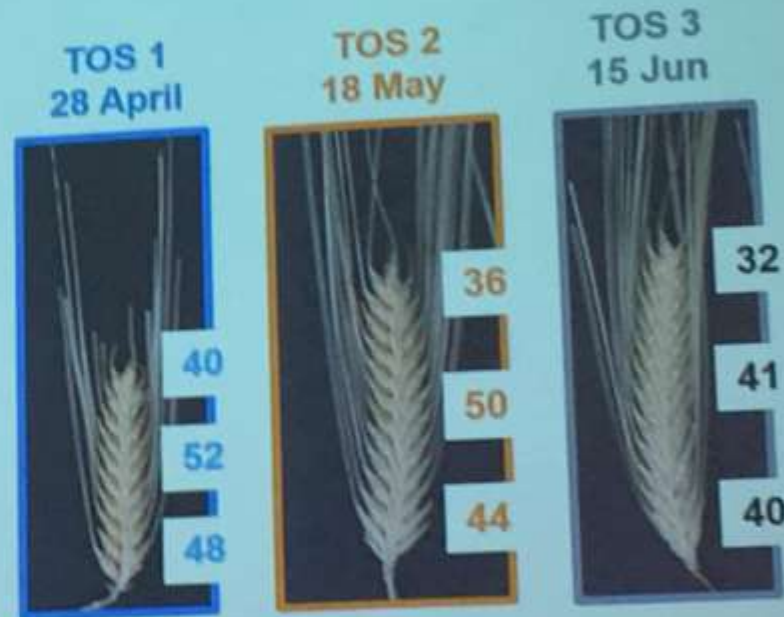
- **Plant density (NOT Sowing rate)**
- **Stem density**
- **Head length (Fertile Florets)**

RGT Planet: Grain weight



Planet needs a big source to fill its sink

Compass: Grain weight



Compass needs a bigger sink from early sowing

Peirce et al 2017 (in press) Courtesy D. Pierce (SARDI)

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Need to design a management package for each variety x environment X seasonal flexibility

Spartacus :-

100 plants/sqm

Early sowing (pre May 10)

Higher soil nitrogen (post legume)

Low weed burden

Higher clay content soil (>15%)

TO

150 plants/sqm

Later sowing (post May 25)

Lower soil nitrogen (post cereal)

Medium weed burden

Lower clay content (<15%)

Be wary of :

Seed size and weight plus establishment conditions to decide on an appropriate seeding rate to achieve the target plant density.

e.g. Yagan vs Spartacus vs Scope

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Weed control tactics :-

Pre sowing – no till crop establishment –

Commonly used products include: Trifluralin, Triallate, Prosulfocarb, Metribuzin, Diuron

Post emergent –

Commonly used products include: Bromoxynil + LVE MCPA, Velocity, LV 680 2,4-D, Bromoxynil + Diflufenican

Specific Clearfield barley varieties (Spartacus) - Intervix

Utilising Clearfield Barley technology –

- Be aware of the performance and residual (carryover characteristics) of the various “IMI’s”.



Residual Herbicides – Clearfield

- **Imazapyr – (Arsenal, Unimaz)**
Half life in soil = 25 -141 days
- **Imazapic – (Flame, Ember)**
Half life in soil = 31 – 233 days
- **Imazamox – (Raptor, part of Intervix)**
Half life in soil = 35 – 118 days, mean of 59 days
Most degradation performed by soil microbes

Best conditions for microbial breakdown -:

- **Soil temp – 20 - 30°C**
- **Sandy loam >> Clay loam soil**
- **Soil pH >5**
- **Soil moisture > 5% FC but <75% FC**
- **Low organic matter**

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Nutrition :-

Phosphorous, Potassium, and Sulphur requirements are similar to wheat.

Nitrogen ???

Stirling Barley – Nitrogen all up front otherwise screenings problems and often lower yield!

Today's Barley's – Much prefer playing the season :-

At seeding 15 to 30 kg N/ha (depends on rotation, soil type, stubble load, summer rain)

Top up nitrogen – rate dependent on plant available water –

Timing – GS 30 to 32 (early tillering can result in too much resource waste, disease and pest development). This timing offers higher probability of making MALT!

All nitrogen upfront often results in lower yield and protein and higher screenings



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Disease

Loose smut (your disease) :-

Seed borne disease – very common in most barley varieties, particularly in Spartacus. Therefore 99% of the time farmers should treat their seed with a seed dressing!! Presently in-furrow fungicides do not control loose smut.

Control measures :-

1. Utilise seed from the cleanest paddock that can be found.
2. Treat seed with a “modern” normally stronger seed dressing.
Excellent -
 - a) Vibrance Extreme® - 325ml/100kg seed
 - b) Evergol Energy® - 130 ml/100kg seedVery Good -
 - c) Systiva® - 150ml/100kg seed



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Net Blotch – (spot and net form) - communal disease but greatly influenced by on farm management.

Can be carried on the seed but mainly carry's over on barley stubble. Wind borne spores from many kilometres away.

Can be confused with Boron toxicity and physiological spotting.



Spot form

Resistance to some DMI fungicides in the south is increasing!!!



Net form

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Net Blotch – (spot and net form) - communal disease but greatly influenced by on farm management.

Control measures :-

Remove Stubble – burn/graze/bale

Seed Dressing = Systiva 150 ml/100kg seed

Foliar fungicide :-

DMI – Propiconazole, Tebuconazole, Prothioconazole, Epoxyconazole (or combinations e.g. Prosaro®)

Strobi – Azoxystrobin or Pyraclostrobin combined with a DMI. (e.g. Amistar Xtra®, Radial®, Opera®)

SDHI – Bixafen combined with a DMI. (e.g. Aviator Xpro®)

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Barley Powdery Mildew :- Communal disease

Carried on stubble residue –

- Seen as the “ryegrass of foliar diseases” around the world.
- It adapts quickly to changes in farm management!
- Numerous generations in a season.

Control measures :-

Remove Stubble – burn/graze/bale

Seed Dressing = Systiva 150 ml/100kg seed

Foliar fungicide :-

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Photo courtesy of DPIRD

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How to grow barley?

1. Sow barley before wheat to minimise heat shock risk and it is more frost tolerant.
2. Target 100 to 150 plants/sqm and beware of seasonal seed size variation.
3. Most Barley prefers pH (CaCl₂) > 4.8 at all soil depths. (except Buff & Litmus)
4. Need to understand how each variety produces yield and apply nutrients appropriately.
5. Control leaf disease as it develops and under high disease pressure use strong seed dressings.

Perhaps give barley a go!



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