



## Lentil & Beans: waterlogging, disease and varieties – AirEP



Dry Start



# The Pulse Season L&MRZ (Vic)

Good Yield



Variable  
Establishment



Terbyne  
Damage

Frost



'But mild weather &  
rain following'

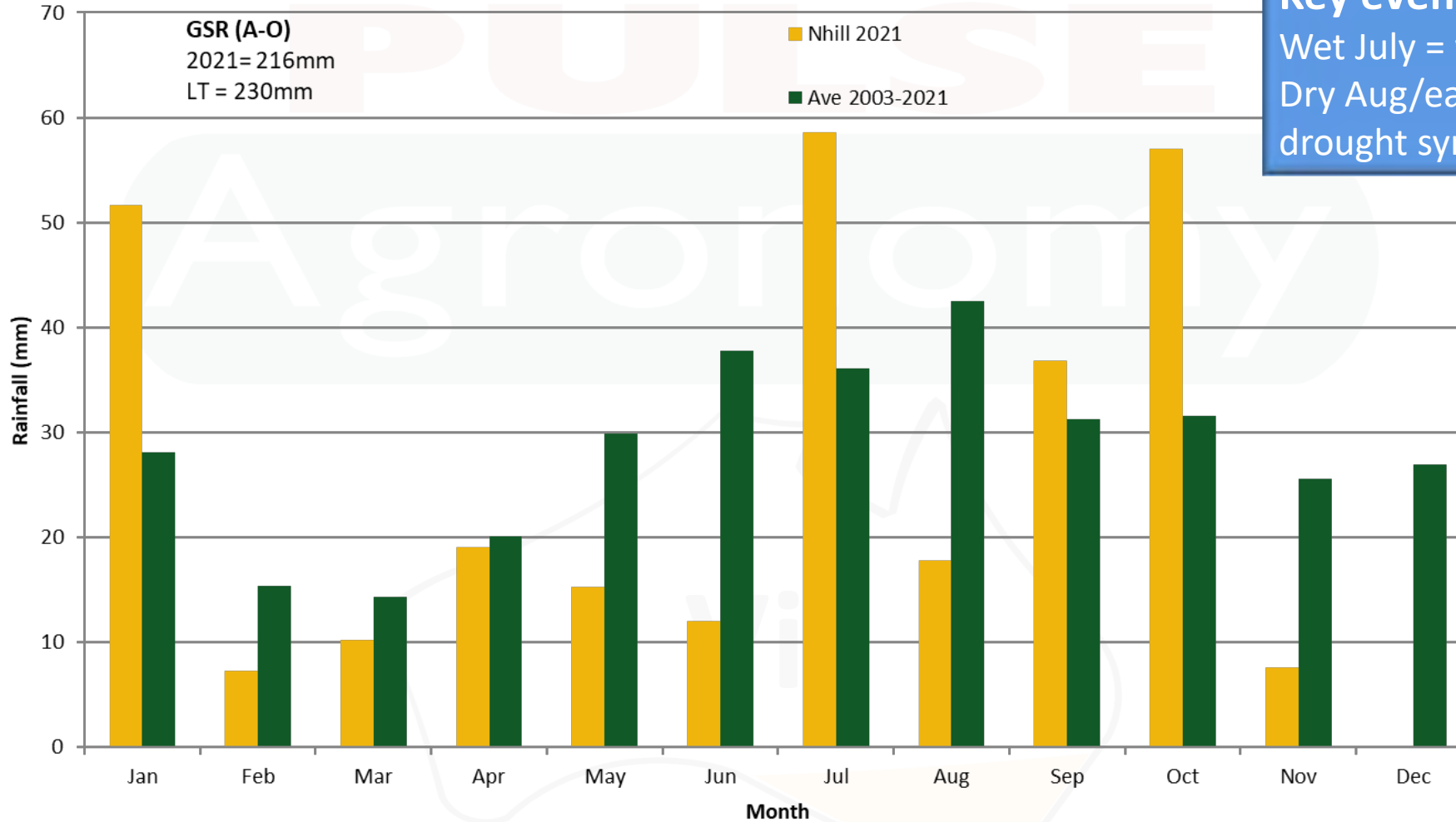


Relatively Low  
Biomass



# Waterlogging in Lentil

## Rainfall



### Key events

Wet July = waterlogging in lentils  
Dry Aug/early Sept = early drought symptoms

# Waterlogging

**LENTIL: Waterlogging on duplex soil at Nhill (in a dryish year)**

➤ Lentil will die with short term waterlogging – particularly during reproductive phase



➤ Also noted under pivot irrigation – PBA Jumbo2 more susceptible to wet feet than PBA HighlandXT



# Waterlogging

➤ Beans can sit in water for a number of days, but yield declines



Vite Vite North Rainfall



2021 – SW Vic

14% yield loss from mild to severe waterlogging stress



# Disease Management in HRZ

## Chocolate Spot - Summary

- Agronomy is just as important as varietal resistance
- Choose a more resistant variety
- Fungicides are essential
  - Be proactive and keep on top of disease – it is aggressive
  - There are some good options for rotation of fungicides
- Environment is key

*\*\*Josh Fanning, AgVic*



# Disease Management in HRZ

Moderate Disease Intensity

Lake Bolac – 2020 \*\*No disease control (20 Oct)



PBA Amberley  
3.66 t/ha



PBA Samira  
3.73 t/ha



PBA Bendoc  
3.28 t/ha



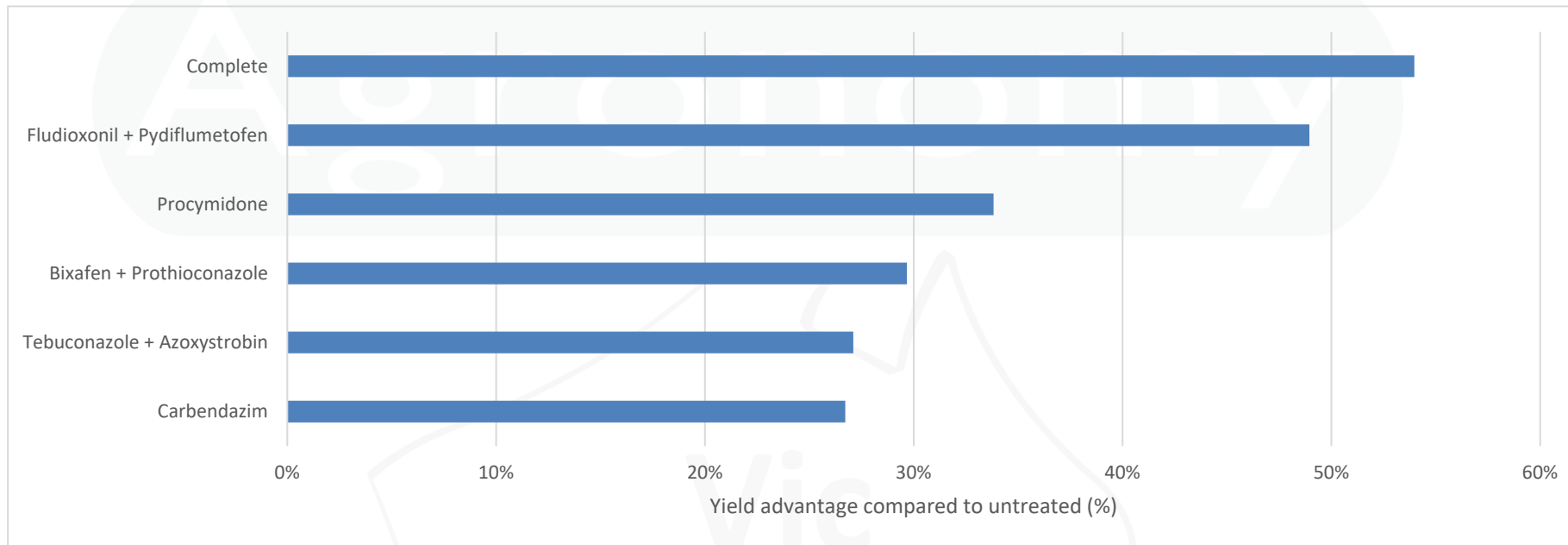
Fiesta  
3.03 t/ha

\*\*Josh Fanning, AgVic

# Disease Management in HRZ

## Chocolate Spot

Lake Bolac – 2020 – Yield Advantage (cf Untreated @ 3.4t/ha)



All treatments except untreated had a tebuconazole at 4 node stage  
Significant main effects only of treatment and variety

*\*\*Josh Fanning, AgVic*





# Disease Management in HRZ

Very High Disease Intensity

Lake Linlithgow – 2020 \*\*No disease control (20 Oct)



PBA Amberley  
2.75 t/ha



PBA Samira  
1.27 t/ha



PBA Bendoc  
0.62 t/ha



Fiesta  
0.72 t/ha

\*\*Josh Fanning, AgVic



# Disease Management in HRZ



Tebuconazole +  
Azoxystrobin

Bixafen +  
Prothioconazole

Fludioxonil +  
Pydiflumetofen

*\*\*Josh Fanning, AgVic*

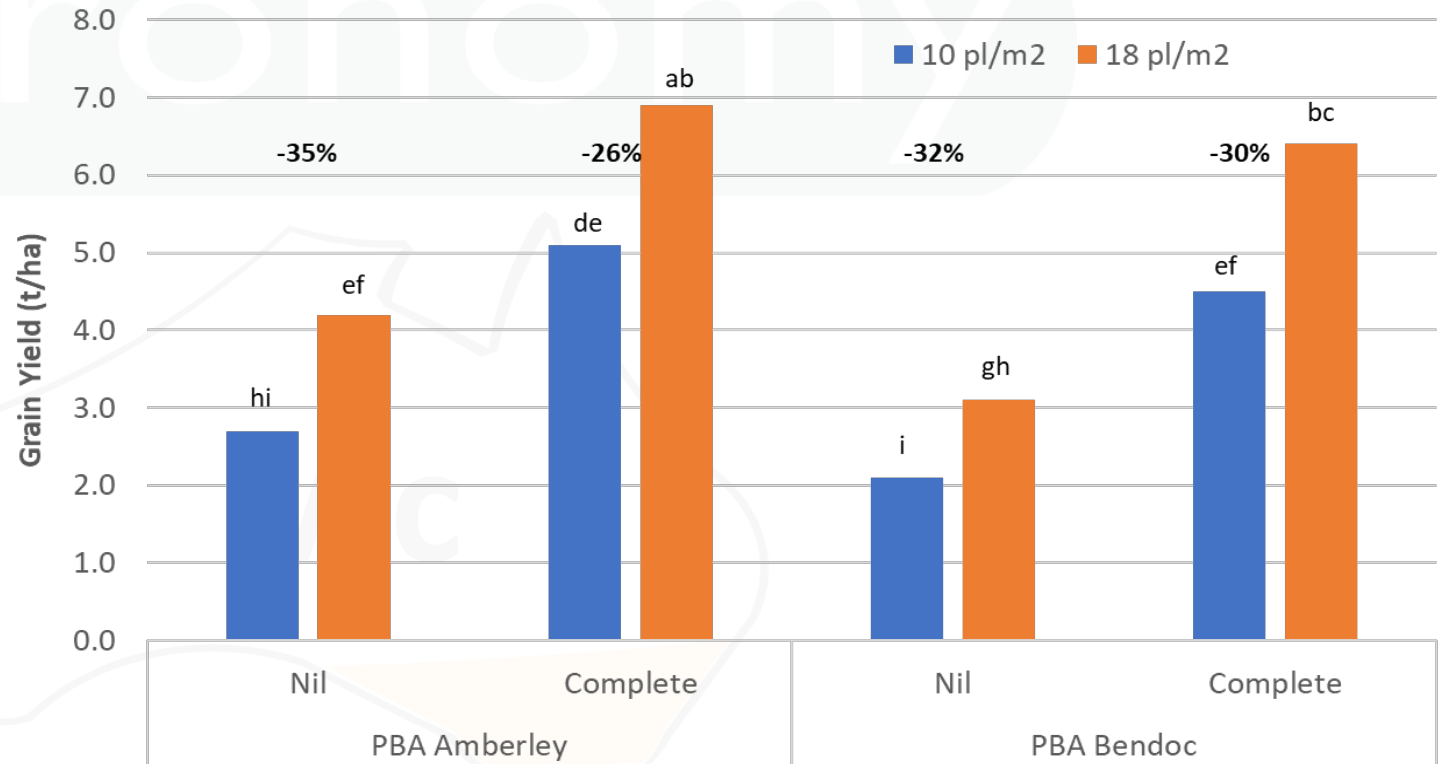


# Disease Management in HRZ

## ➤ Disease Management

- New products = better control, less applications & greater flexibility
- Observed 50% loss with no sprays in 2021

Lower plant density reduces disease **& Grain Yield**



**8-9t/ha is possible**

# Disease Management in HRZ

- Gnarwarre 2021: Responses similar in both cultivars despite different disease resistance
- Newer chemistry as effective in 2 spray strategy as 3 or 4 spray approaches of existing approaches

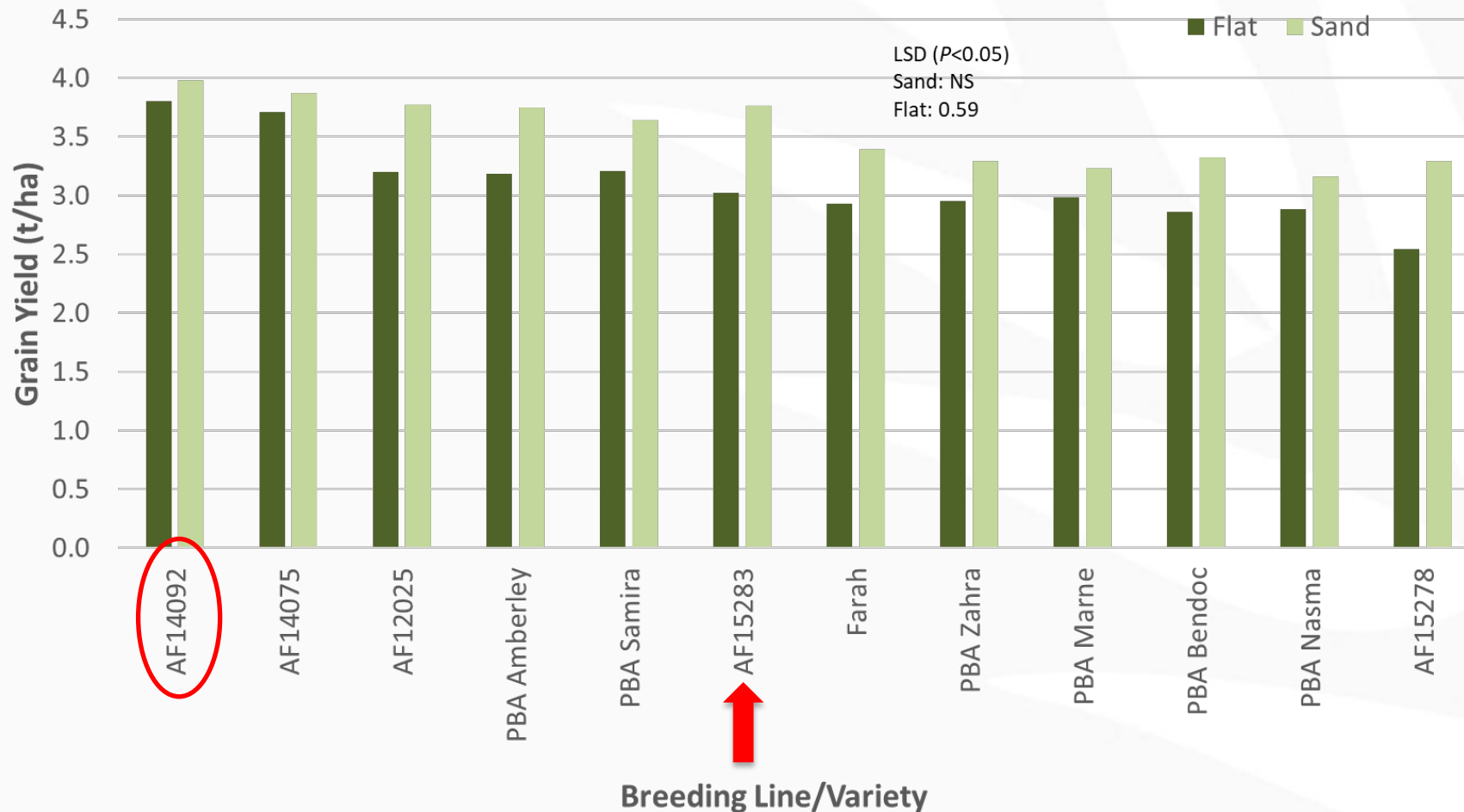
Fungicide	4 Node 24-Jun	1st Flowers 28-Aug	1st Flower +14 days 15-Sep	1st Flower +28 days 12-Oct		Grain Yield (t/ha) Amberley	Grain Yield (t/ha) Bendoc
Untreated						4.29	4.57
1 Fungi				Chlorothalonil 2.3l/ha + Carbendazim 0.5l/ha		6.01	6.05
2 Fungi			Chlorothalonil 2.3l/ha + Carbendazim 0.5l/ha	Chlorothalonil 2.3l/ha + Carbendazim 0.5l/ha		6.25	6.59
3 Fungi		Mancozeb 750 2.0l/ha	Chlorothalonil 2.3l/ha + Carbendazim 0.5l/ha	Chlorothalonil 2.3l/ha + Carbendazim 0.5l/ha		7.50	6.86
4 Fungi	Tebuconazole 145ml/ha	Mancozeb 750 2.0l/ha	Chlorothalonil 2.3l/ha + Carbendazim 0.5l/ha	Chlorothalonil 2.3l/ha + Carbendazim 0.5l/ha		7.34	6.85
2 Fung \$\$\$			Miravis Star 0.75l/ha	Veritas 0.75l/ha		7.45	6.70
Flexible				Veritas 0.75l/ha		5.56	5.18



# New Variety Yield Stability

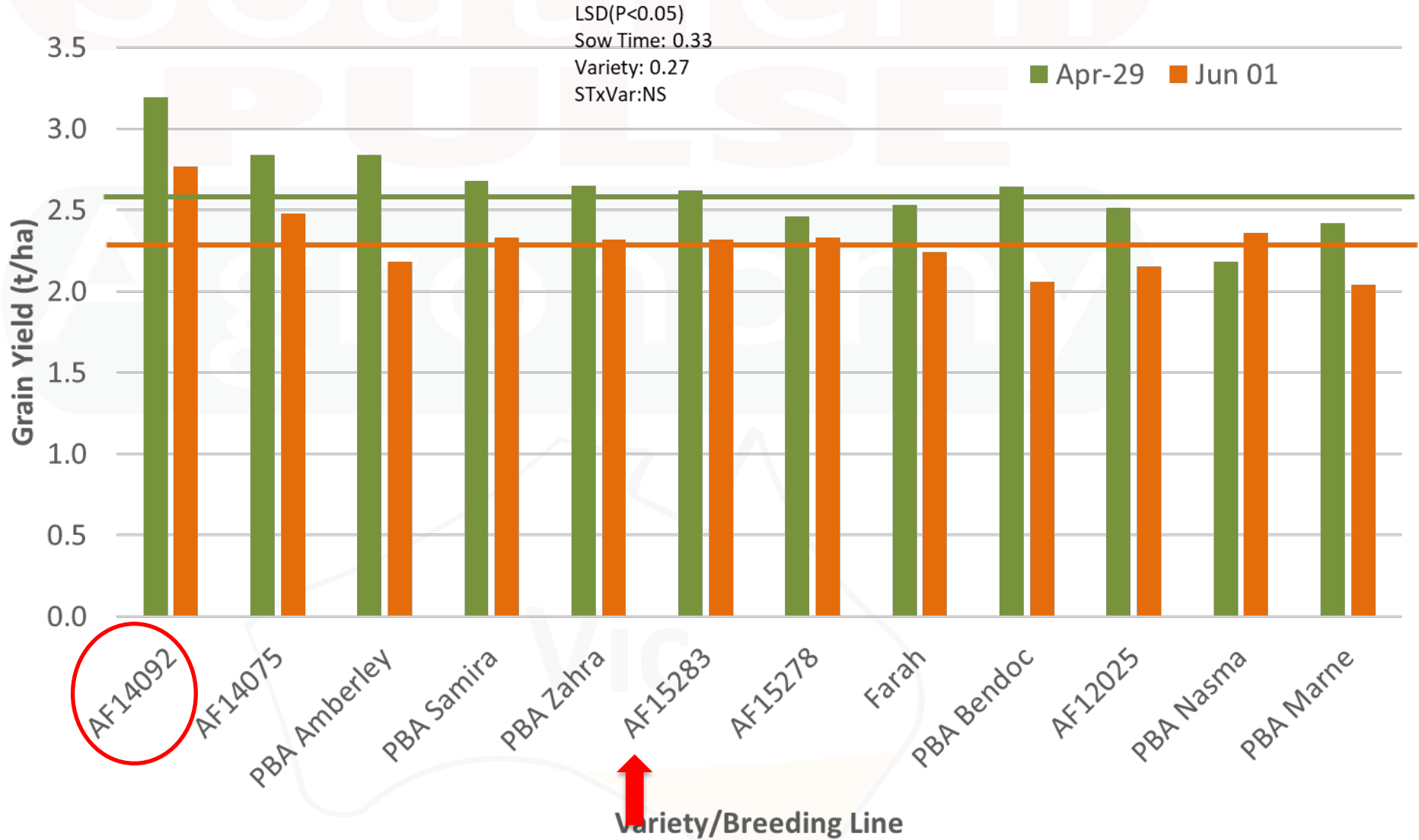
## FABA BEAN

➤ Impact of soil types at Propodollah 2021, west Wimmera



# Sowing Time Response

Faba Beans





# Faba Beans

Metribuzin Tolerance



AF14092



PBA Samira



# New Variety Yield Stability

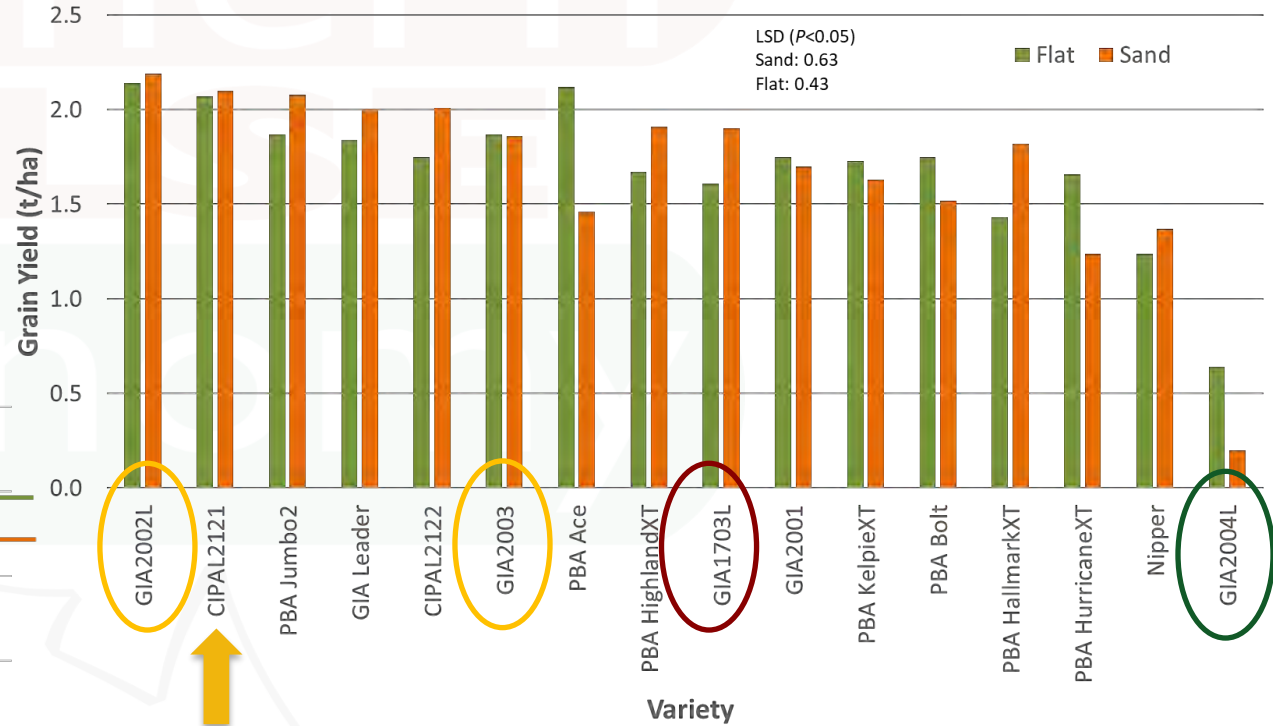
**LENTILS**

**'Imi'**

**'Imi'/'Lontrel'**

**'Imi'/'Metribuzin'**

## ➤ Impact of sowing dates at Curyo, southern Mallee



## ➤ Impact of soil types at Propodollah, west Wimmera



# Novel Herbicide Tolerance



**GIA1703**  
 'The only one surviving in the distance'

+/- Vetch



Vetch

GIA1703L



GIA2004L

PBA KelpieXT

PBA HallmarkXT

PBA Jumbo2

Nil

Conv

Gp B

Gp B/C

Gp B/I

PBA Jumbo2 = Conventional

PBA HallmarkXT = 'Imi'

PBA KelpieXT = 'Imi' + Large Seed

GIA2004L = 'Imi' + 'Metribuzin'

GIA1703L = 'Imi' + 'Lontrel Residue'

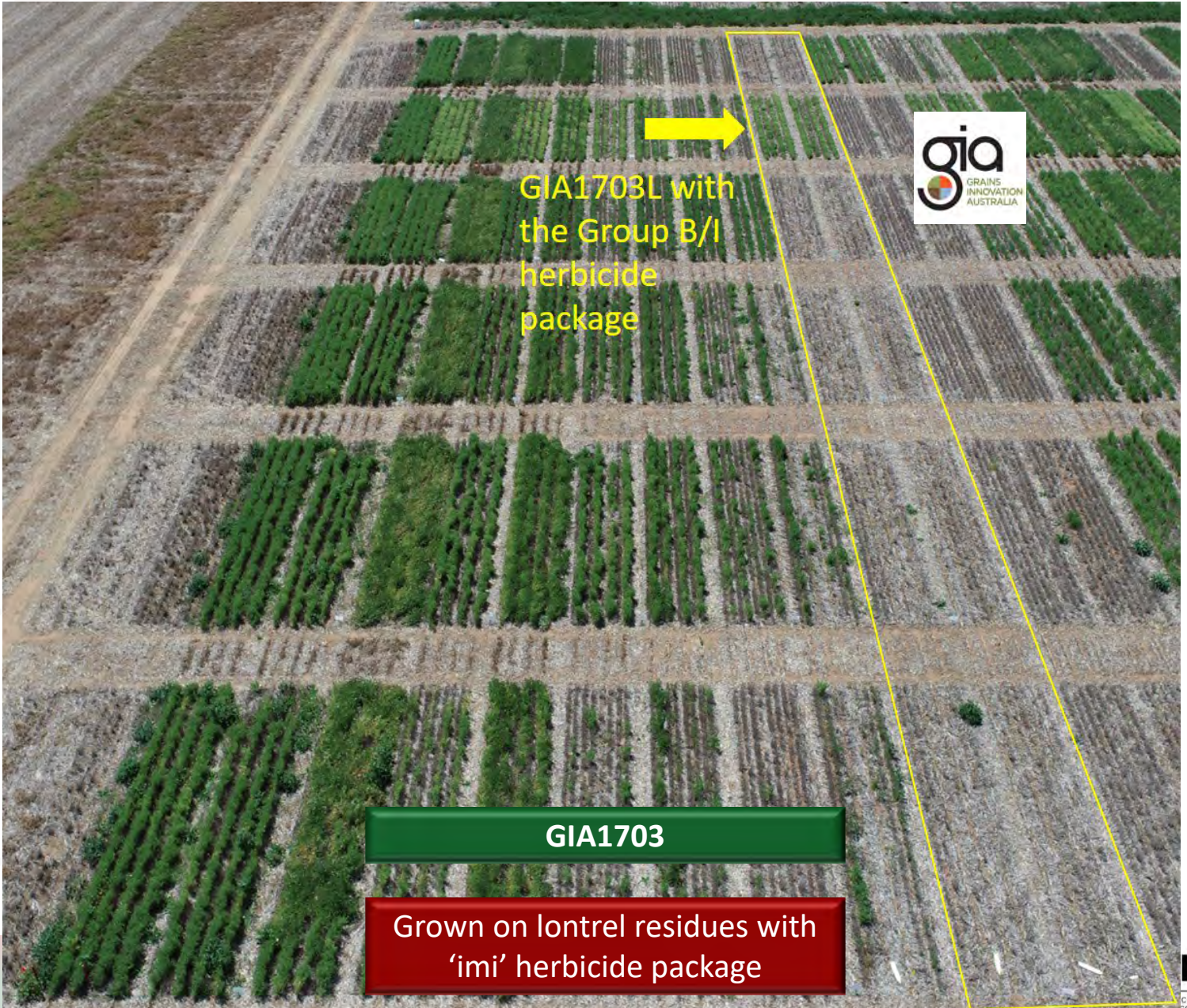


# Novel Herbicide Tolerance

## Vetch Competition - Grain Yield Reduction (Curyo & Propodollah)

- No herbicides = 60%
- Conventional strategy = 23%
- 'Imi' strategy = 0%

\*\*However only the 'Imi'/'lontrel' strategy prevented seed set.\*\*



Southern

PULSE

Agrionomy

**Questions**





# Lentil Vegetative Frost

GIA Lentil  
Breeding Trial

31 Aug



## Key events

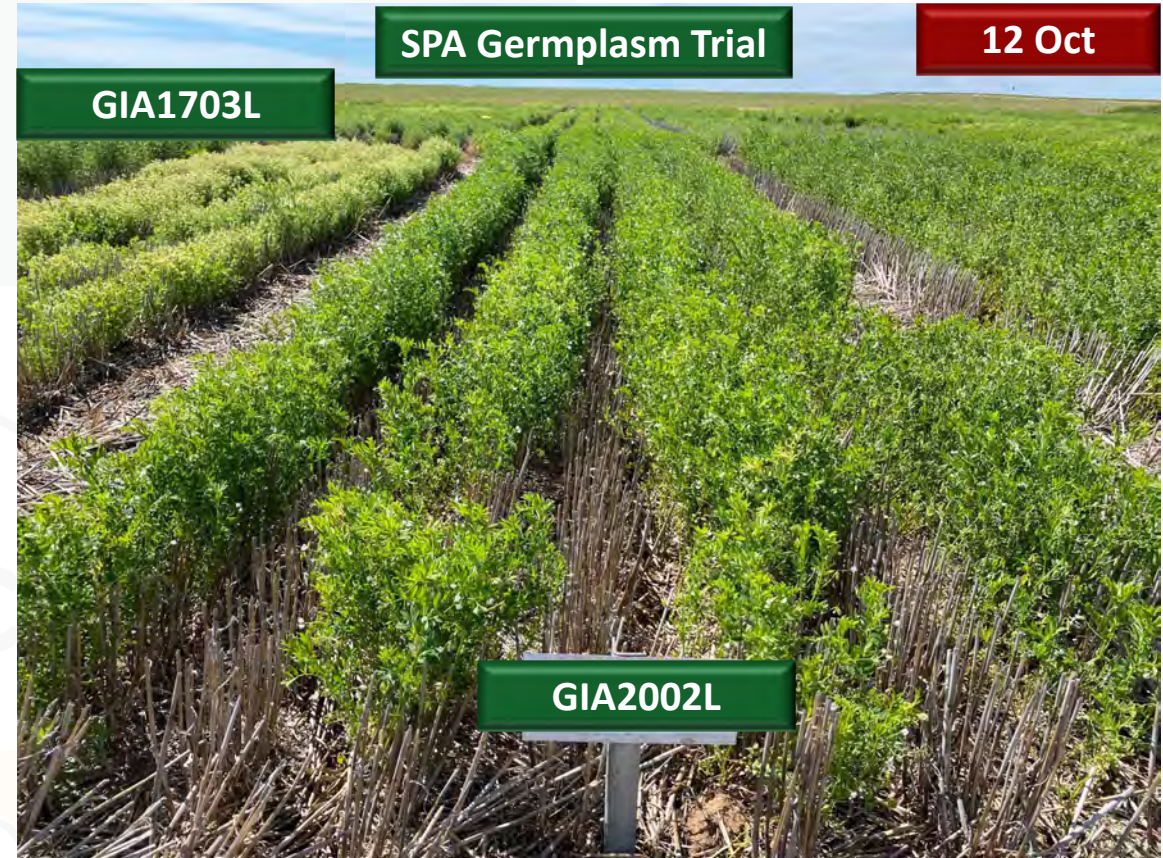
Aug 26&27: -2.2 & -2.9

Oct 11&12: -0.8 & -0.2

SPA Germplasm Trial

12 Oct

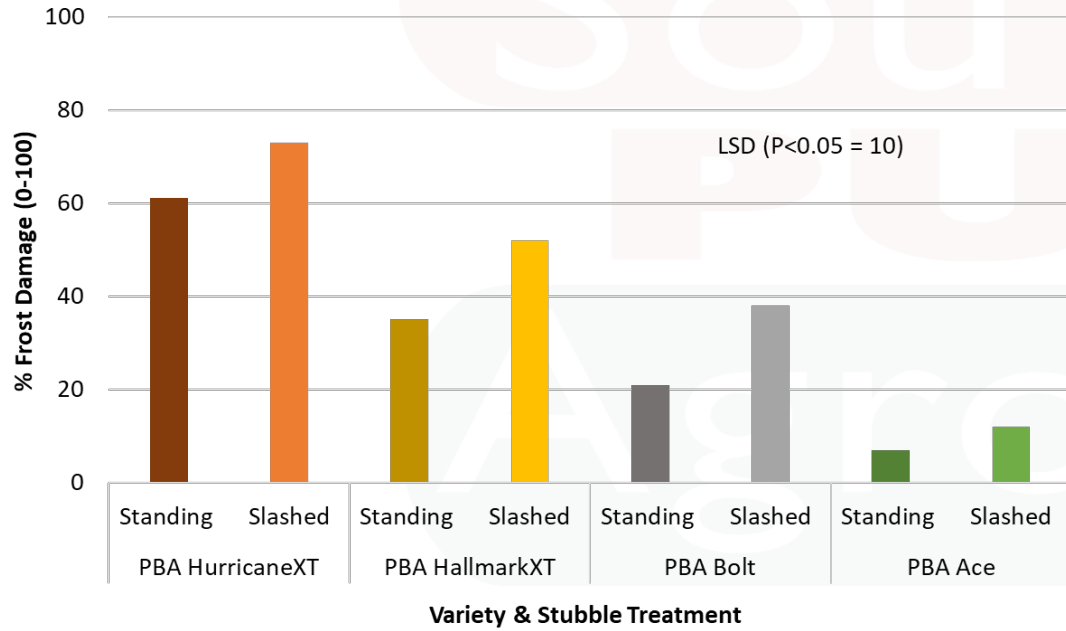
GIA1703L



GIA2002L

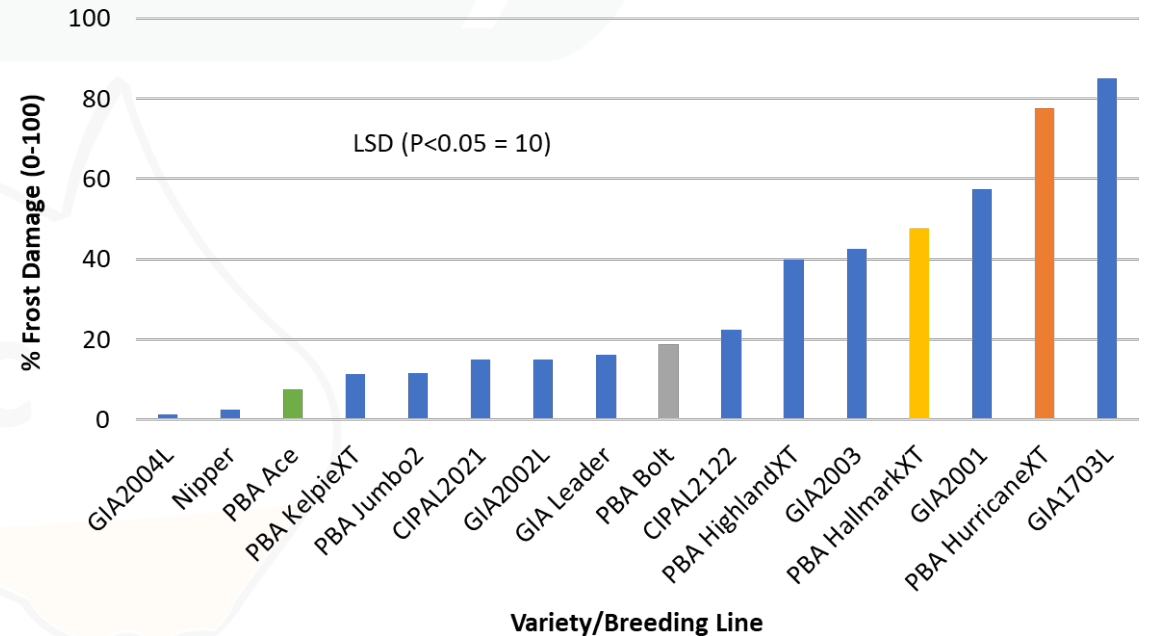


# Lentil Vegetative Frost



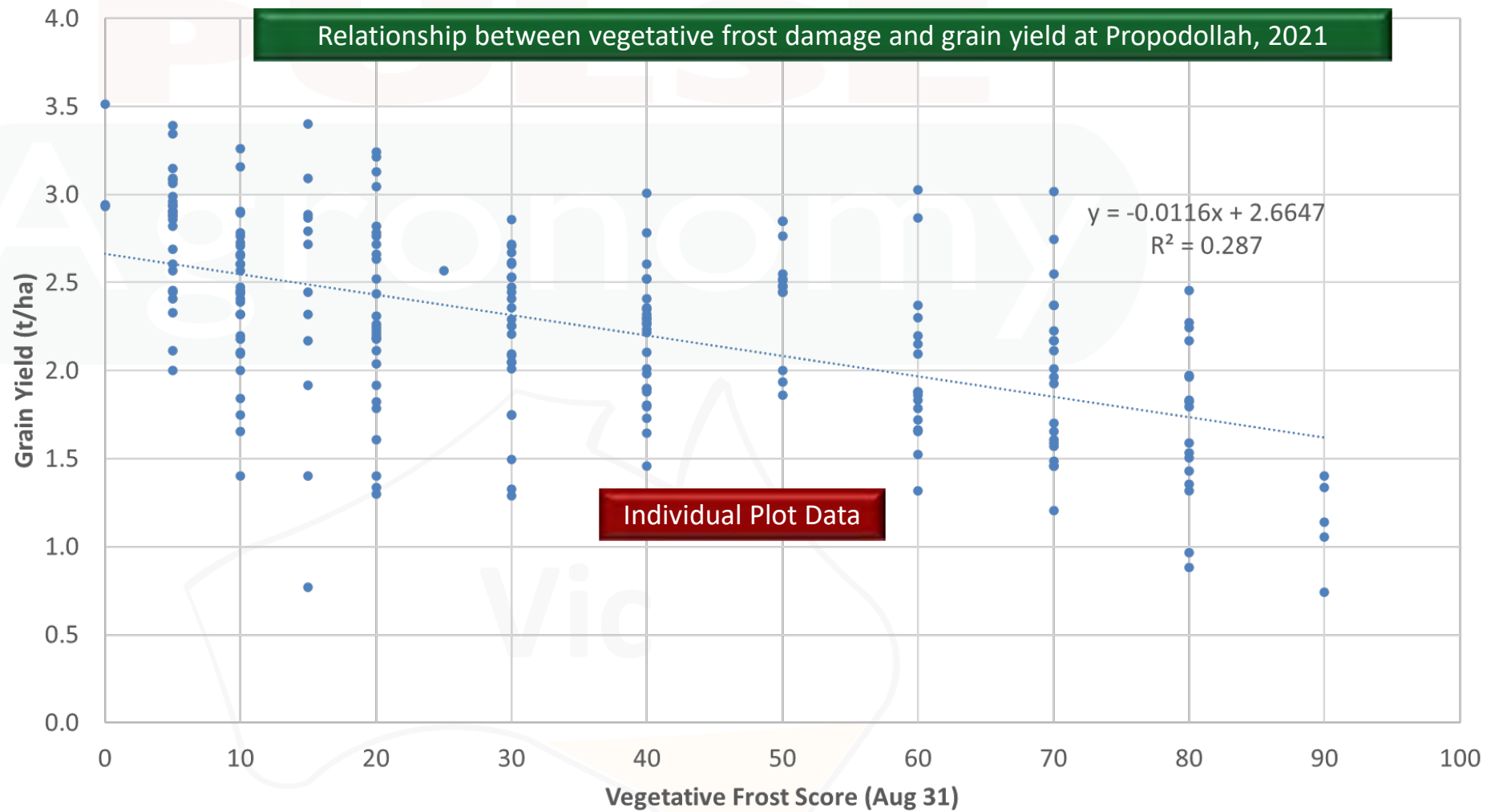
➤ Symptoms reduced in standing stubble

➤ Large Varietal Differences



# Vegetative Frost & Grain Yield

- Apparent link to grain yield needing to be explored

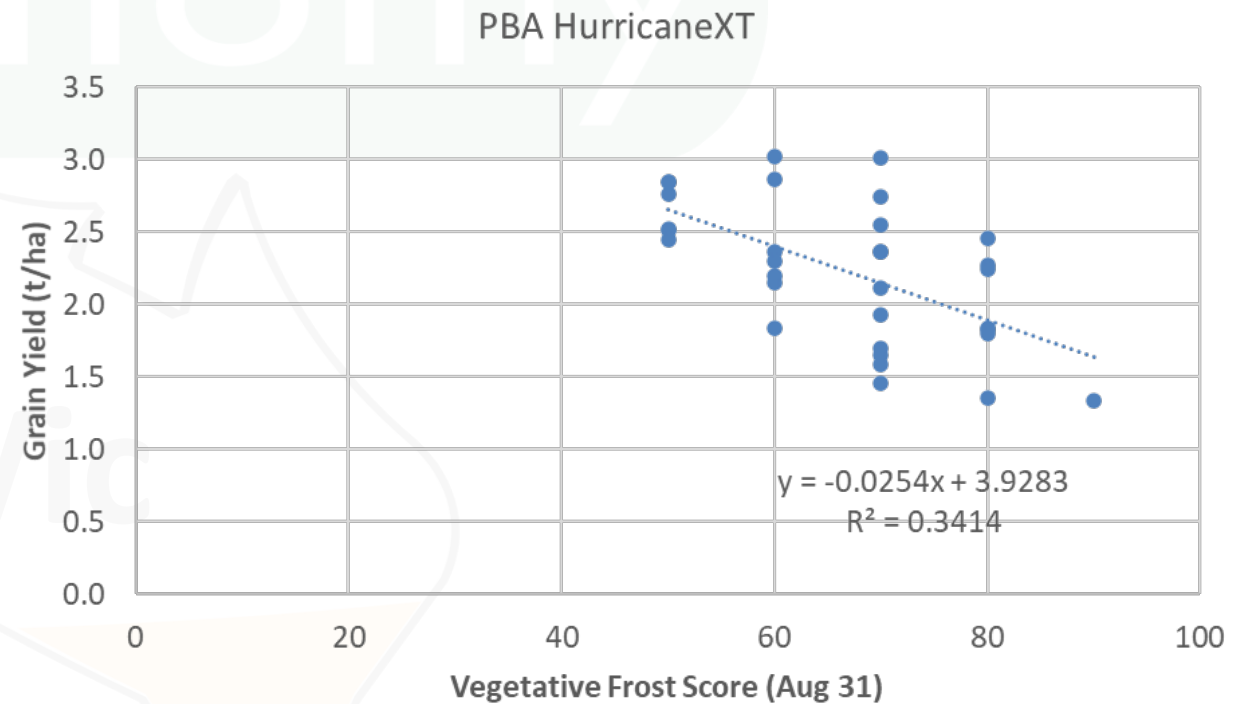
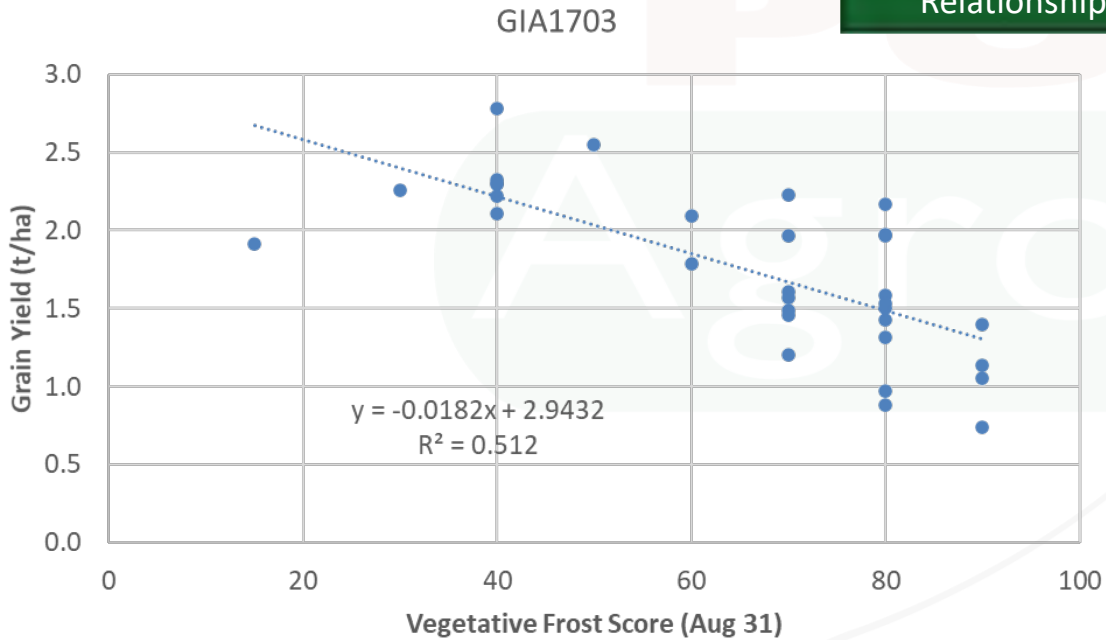




# Vegetative Frost & Grain Yield

➤ Apparent link to yield – Needs to be explored

Relationship between vegetative frost damage and grain yield at Propodollah, 2021



Individual Plot Data



67

32

44

J BRAND  
plotID: 1  
Rep: 1 Fl  
Row: 3 Col  
GI17031  
Mature biomass (Frost)

# Lentil Reproductive Frost



**No Varietal Difference**  
➤ In proportion of affected and unaffected pods & flowers

Are there likely to be canopy and maturity effects on yield response to frost?



# Herbicides - Reflex & Terbyne

## Reflex Damage

- Sub label rate applied
- Back tynes pushing into front rows
- Subtle symptoms
- Caution with Lupins



Reflex damage from soil throw – Vic Mallee



# Herbicides - Reflex & Terbyne



Terbyne Damage



- Symptoms kept getting worse after dry start
- Soil type and varietal differences



# Southern PULSE

## Agronomy

- Lentil in high moisture situations, and when are you better to switch to beans?
- Disease management in wet conditions
- A variety update on lentil and beans

