

Intercropping Pulses and Oilseeds

South East Research Farm

Producer Driven Research

Redvers, SK

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Farming is in my blood...



Grandpa Lawrence Wallis in one of his best crops, near Rosetown, SK

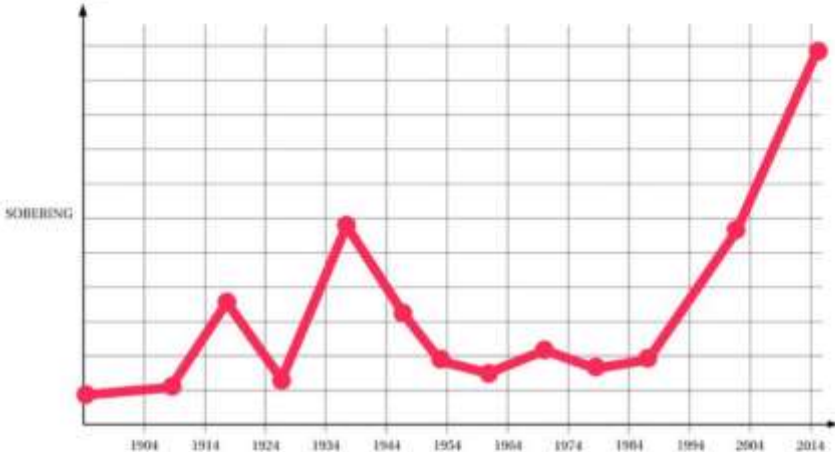
NEWS IN BRIEF

Study Finds 79% Of Statistics Now Sobering

8/20/14 11:25am

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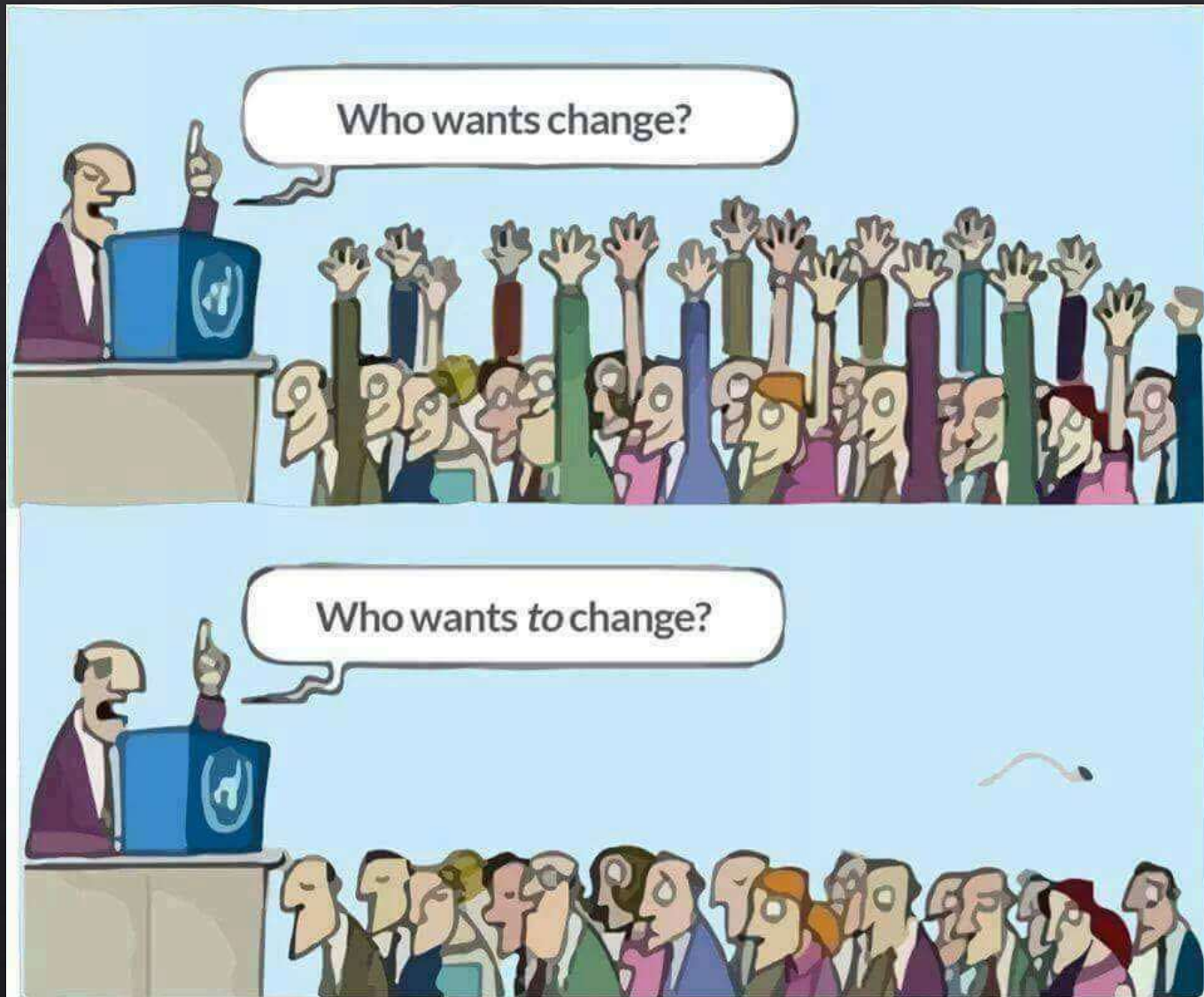
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TWO YEAR CROP ROTATIONS



Intercropping in Saskatchewan!



Mixed Grain Intercrops in SK

- ◇ If not here, where?
 - ◇ Flax, mustards, camelina
 - ◇ Diverse pulses: chickpea, lentil, faba, pea
 - ◇ Local markets and handling facilities

- ◇ If not now, when?

FAQ – Mixed Grain Intercrops

Is anyone actually doing this?

- ◆ Yes. In SK, MB, AB, ND, SD. (see Twitter)
- ◆ SCIC - 34,000 acres insured in 2017
- ◆ Estimated 45-50 thousand acres in 2017 in Sask
- ◆ Interest is huge

FAQ - Who is intercropping?

- ◆ Both “conventional” and organic producers
- ◆ Younger generation of farmers
- ◆ Mid-size farms



FAQ - Intercropping

- ◆ Hybrid of organic and “conventional” techniques
- ◆ “New Conventional”?
- ◆ Sustainable Intensification

Derek and Tannis Axten Win Saskatchewan Outstanding Young Farmers Award

📅 Published: 22 June 2017

✍️ Written by Neil Billinger



Intercropping Challenges

- Both must be compatible with herbicide
- Changes to seeding and harvest techniques
- Over-yielding can be inconsistent
- Practical separation of harvested product
- Deficit of knowledge, research...

Chickpea Flax Intercropping Trials

- ◆ Replicated Trials
- ◆ Redvers 2013-2017 (SERF)
- ◆ Indian Head 2015,2017 (AAFC, Bill May)

- ◆ Chickpea Seeding Rates (2013-16)
- ◆ Alt vs Mixed Rows (2016, 2017)
- ◆ Flax Seed Rate, N (2017)

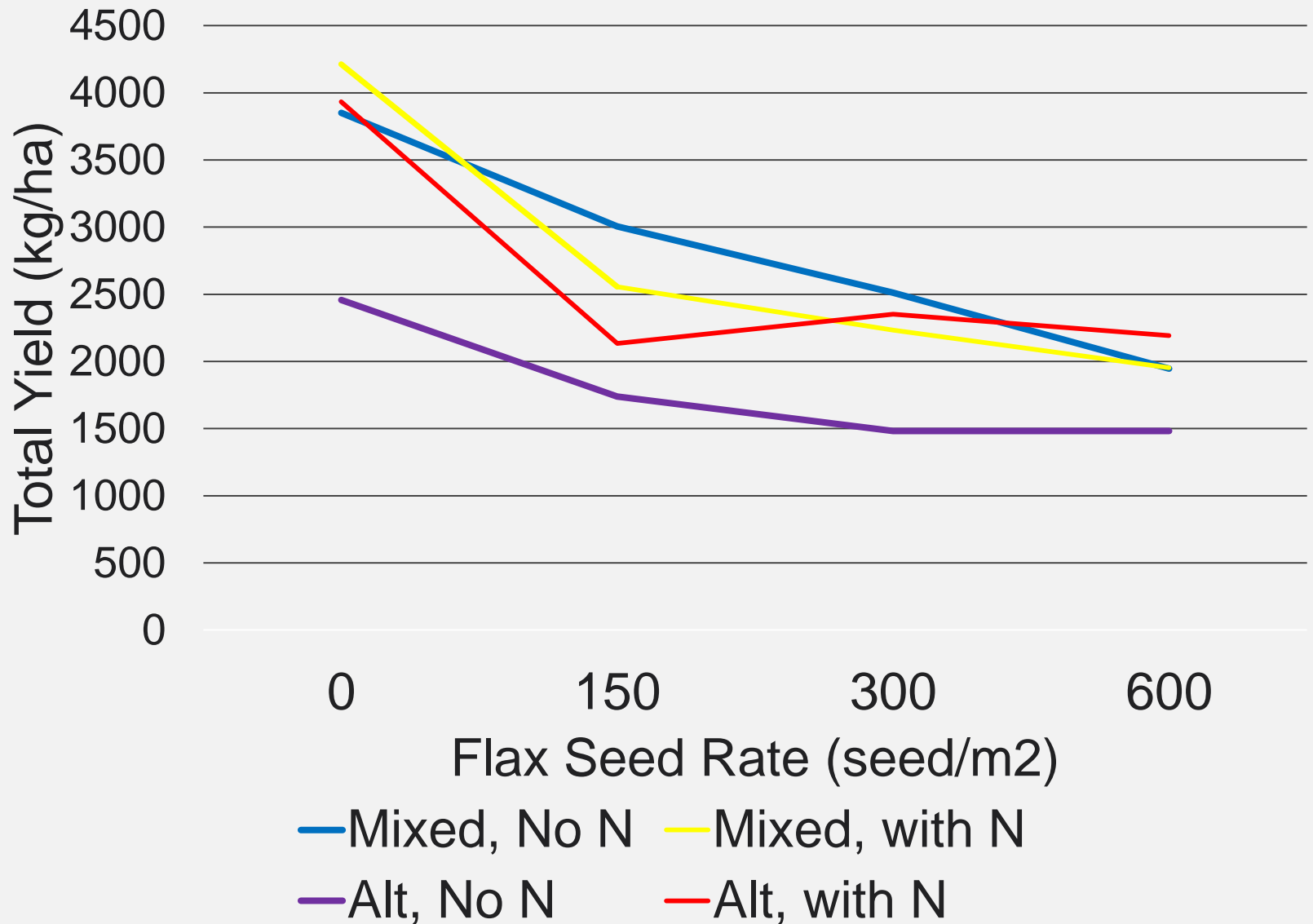
Chickpea Flax (2017 Redvers)

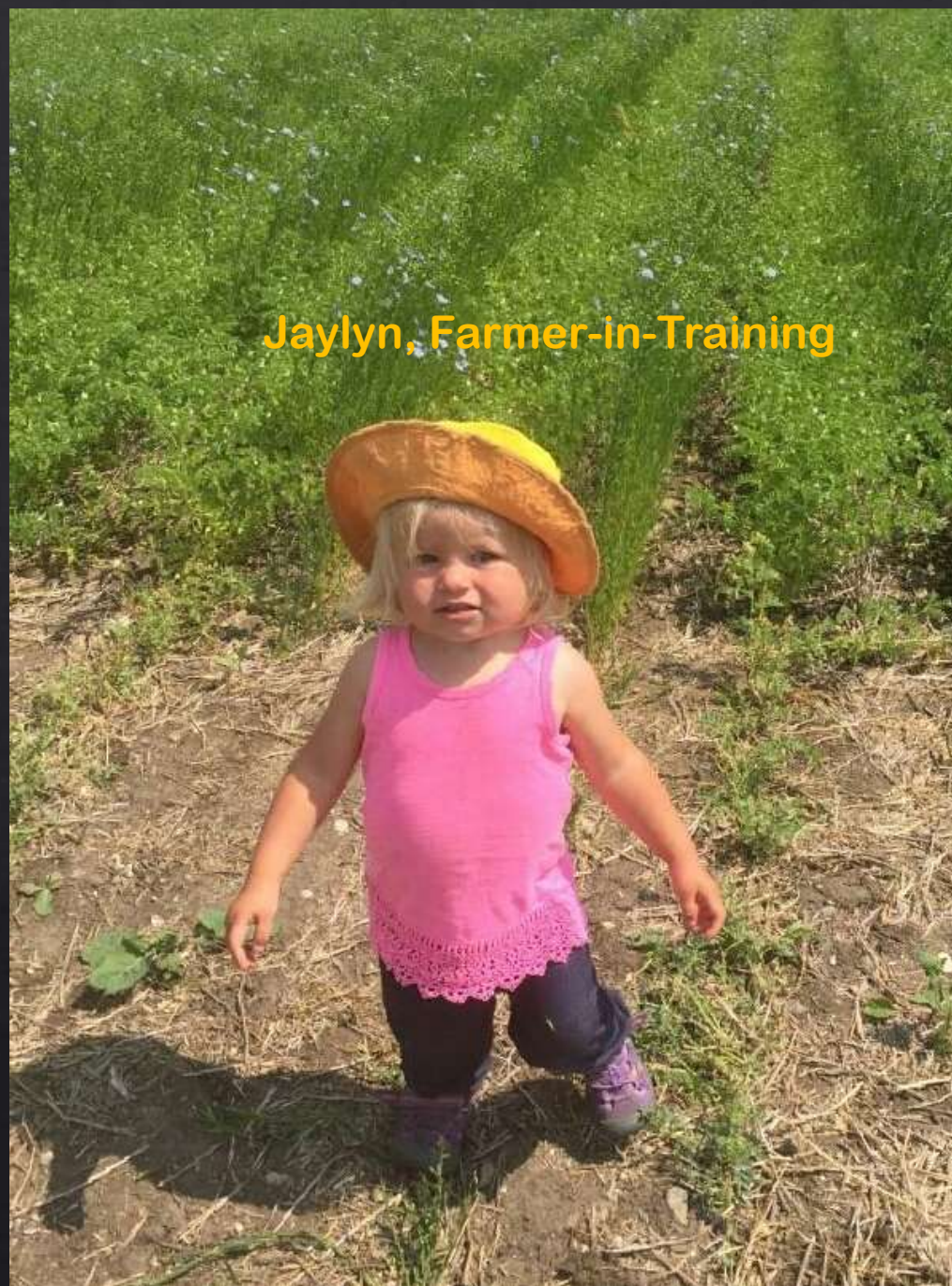


Sept 2, 2018

Monocrop chickpeas still flowering in low area.
Intercrop ripening well beside.

Chickpea Flax Intercrop, Redvers 2017





Jaylyn, Farmer-in-Training

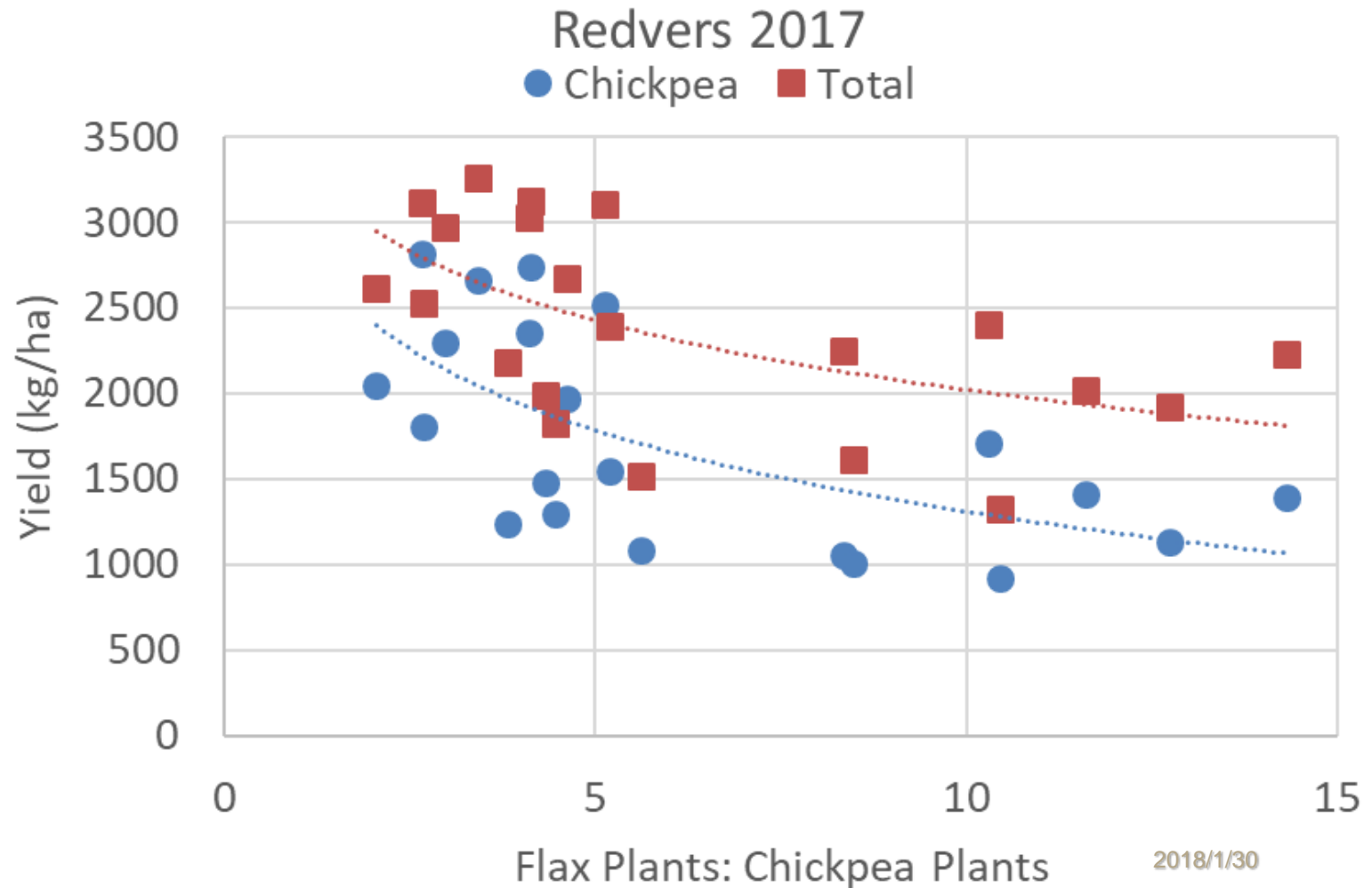
Preliminary Conclusions

Chickpea Flax 2017 Redvers

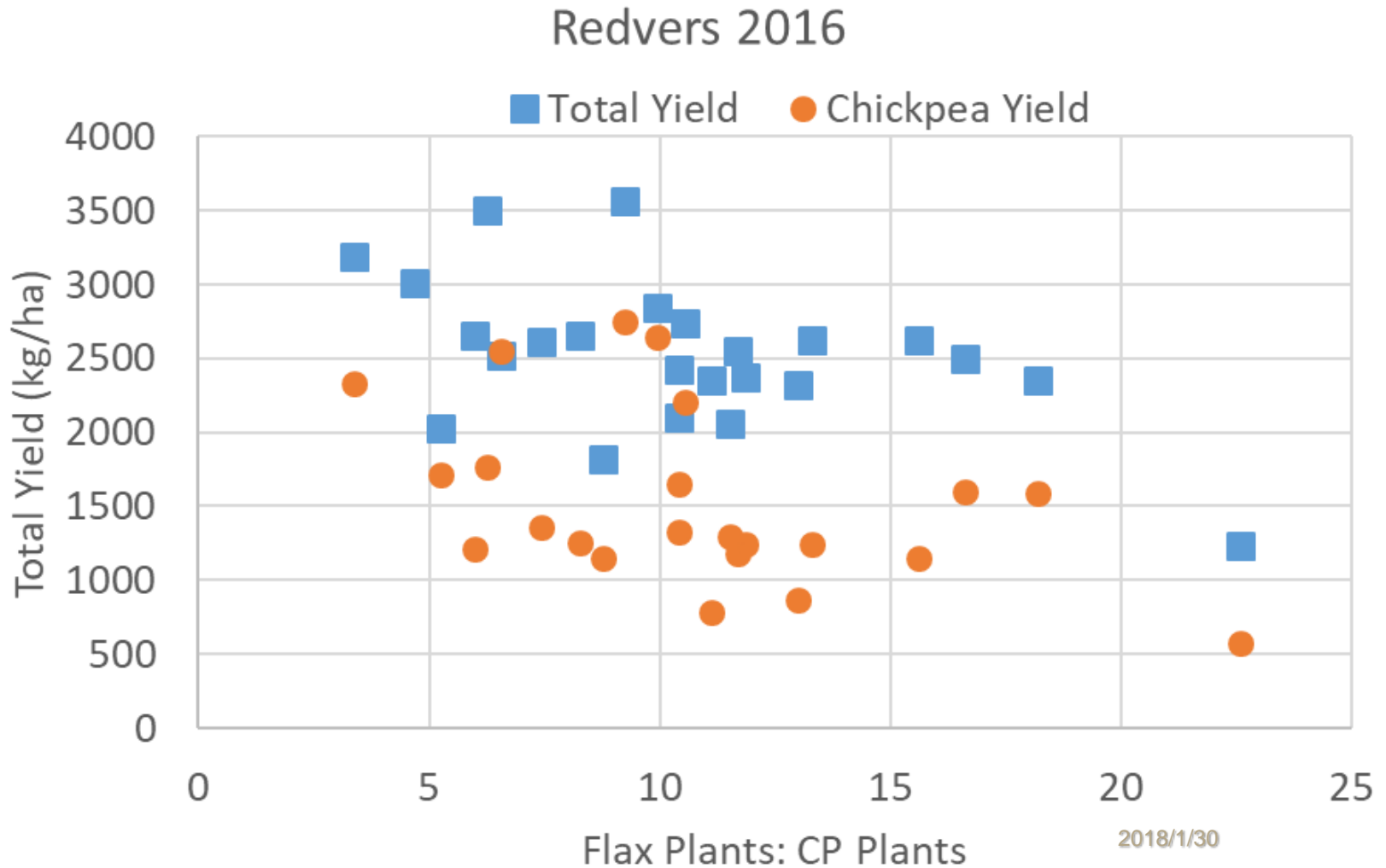
- ◆ Best Intercrop Treatment (1 site year):
 - ◆ 10 lb/ac Flax, mixed rows, no N
- ◆ Seeding rates less crucial in Alt rows
- ◆ Flax:Chickpea ratio and flax seed rate important for mixed rows.

- ◆ Thanks to SPG for the funding

Chickpea Flax – Mixed Rows, 2017

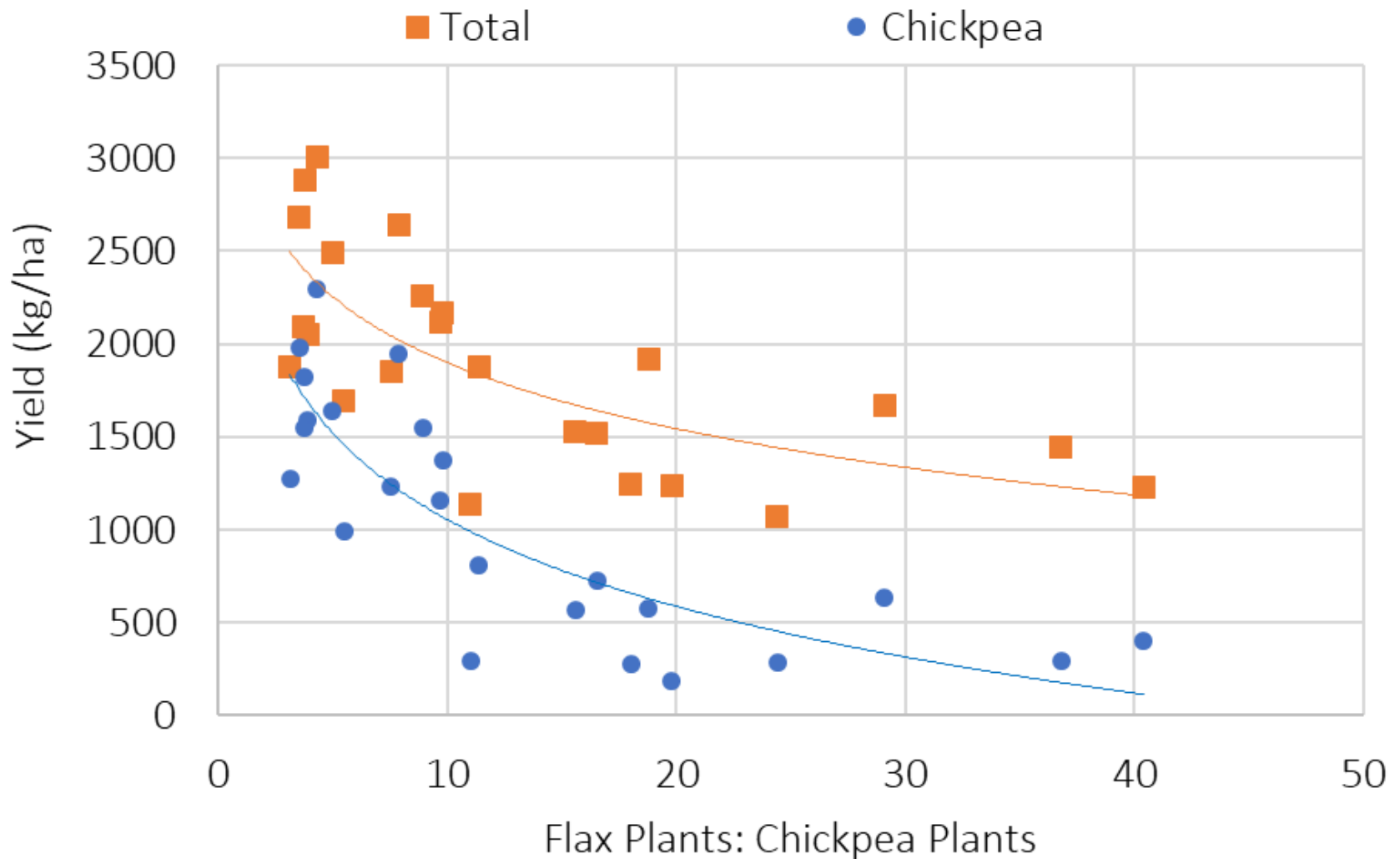


Chickpea Flax – Mixed Rows



Chickpea Flax – Mixed Rows

Redvers 2015



Chickpea Flax Intercrop

Best Advice So Far

- ◇ Start with small acreage
 - ◇ Target monocrop chickpea density
 - ◇ Flax rate 10-25 lb/ac (preliminary), do strip trials
 - ◇ Seed chickpeas deeper than flax
-
- ◇ Chickpeas thresh the flax bolls
 - ◇ Intercrop compensates, lowers risk
 - ◇ Maturity is generally better in intercrop

Mustard-Lentil Intercrop

- ◆ Replicated 2016, 2017 at Redvers (ADOPT, SPG funded)
- ◆ Why?
 - ◆ Reduce lodging, improve harvest standability
 - ◆ Could reduce disease pressure
 - ◆ Possible overyielding, higher value
 - ◆ Better weed competition

Large Green Lentil – Yellow Mustard



Not Lodged

Lrg Green Lentil
with Yellow Mustard

Green Lentil – Mustard

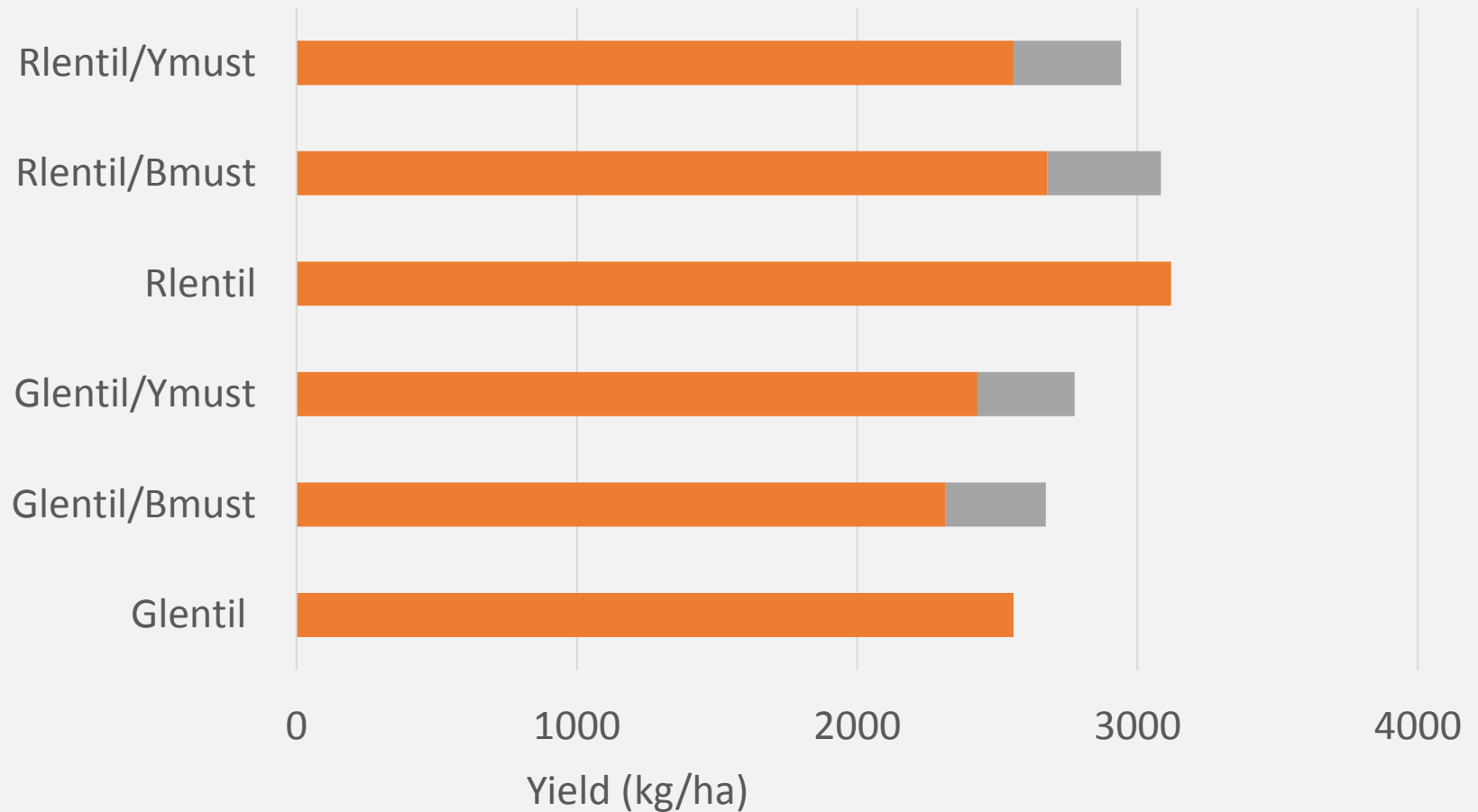
- ◆ 2017 Redvers Trial
 - ◆ 2200 lb/ac Green Lentils (95% of monocrop Green Lentil yield)
 - ◆ 300 lb/ac bonus mustard
 - ◆ More crop value
 - ◆ Easier to harvest, taller



Lentil – Mustard Intercrop

2017 Redvers Yields

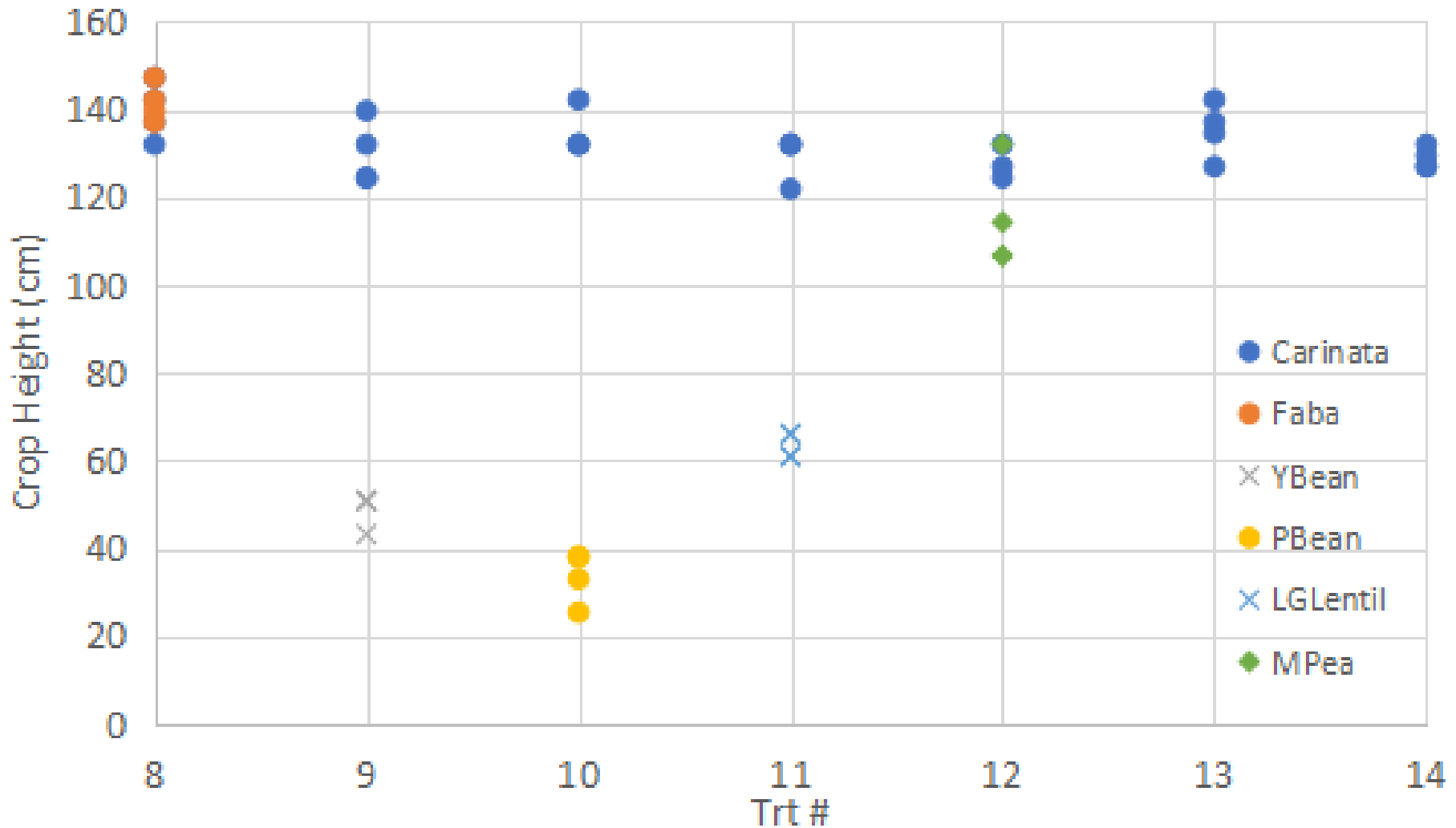
■ Lentil ■ Mustard



Other Redvers Intercrop Trials (Preliminary)

- ◆ Peas (inc. maple) with mustard & canola
- ◆ Faba with canola (tricky, maturity & shattering) & *B. carinata* (promising)
- ◆ Dry bean with *B. carinata* (promising)
- ◆ Conv. Soybean with flax or *B. carinata*
- ◆ Triple Crop (Ymust, Lentil, Pea)

Relative crop height is important



What about seeding rate?

- ◆ Very important for crop balance / competition
- ◆ Aim high for pulses (>75% of monocrop)
- ◆ Aim low for oilseeds and cereals (50% or less)
- ◆ >100% combined
- ◆ Weed competition and higher yield



FAQ-Intercropping

- ◆ What do you do with the mixed grain
 - ◆ Separate if worthwhile (amount / quality)
 - ◆ Sell grain with high dockage if not worth separating



David Ediger, MB: KwikClean set-up

How do you separate it?



- ◇ Large seed size difference is important
- ◇ Dockage cleaners have capacity

Catch 22 is Over

- ◆ Farmers can do this, so what are we waiting for?
- ◆ We need research funding to optimize
- ◆ Multidisciplinary, exciting agronomy
- ◆ AAFC, SSCA and PAMI are interested

- ◆ Opportunities for
 - Equipment manufacturers
 - Agronomy consulting

Get on Twitter to learn more



Colin Rosengren
@RosengrenFarms

Anyone else have trouble with green growth of turnips plugging their return when combining corn soybean?

2:33 PM · 21 Oct 16



Leeann Minogue @Grain... · 21 Oct 16
Replying to @RosengrenFarms
That might be just you. #EarlyAdopter



RealAgriculture
@realagriculture

Intercropping can sound overwhelming and complicated, so where to begin?

@SE_ResearchFarm shares her advice for intercropping rookies:
bit.ly/2CJsbfv

11:52 AM · 03 Jan 18

3 Retweets 8 Likes



Intercrop Innovators Workshop

- ◆ Jan 24 Workshop, Regina (Italian Club)
- ◆ Check Sask Ministry of Ag events for the poster
- ◆ Twitter info #IntercropInnovators



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*Thanks to Sask Pulse Growers, Agri-ARM program,
ADOPT, Government of SK*

Twitter: SE_ResearchFarm
#IntercropInnovators