

# Intercropping Pulses and Mustards

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

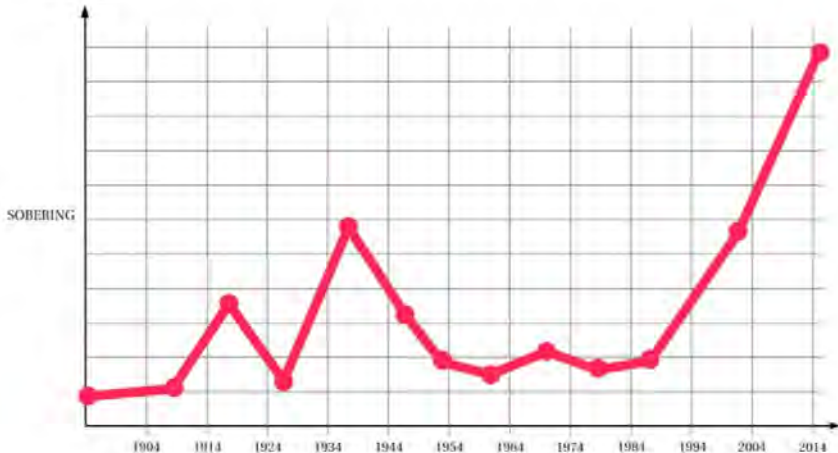
NEWS IN BRIEF

# Study Finds 79% Of Statistics Now Sobering

8/20/14 11:25am

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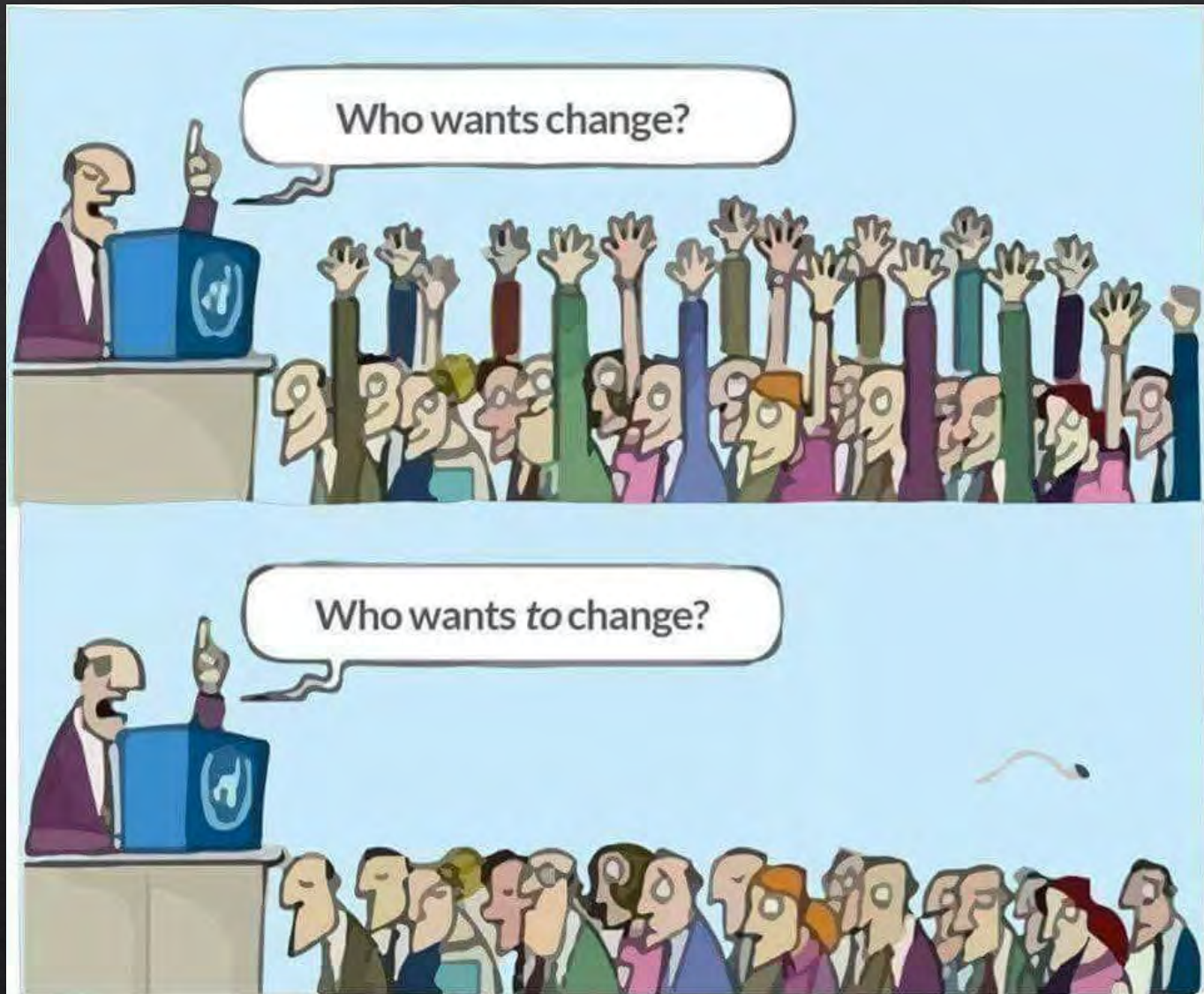


## TWO YEAR CROP ROTATIONS





# 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



# 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...





# 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



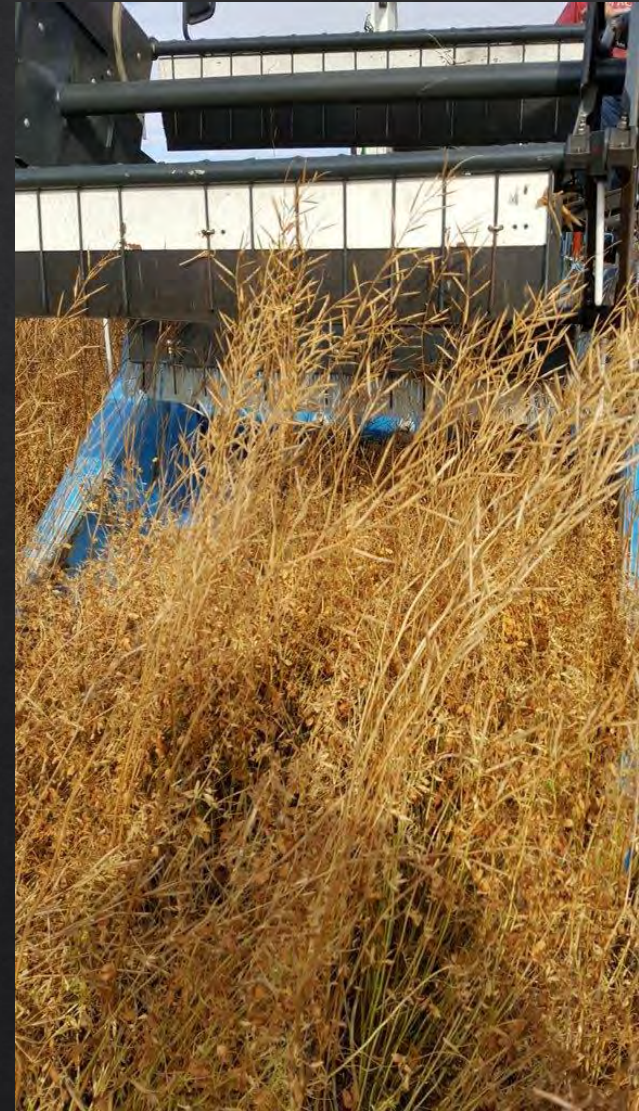
Not Lodged

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

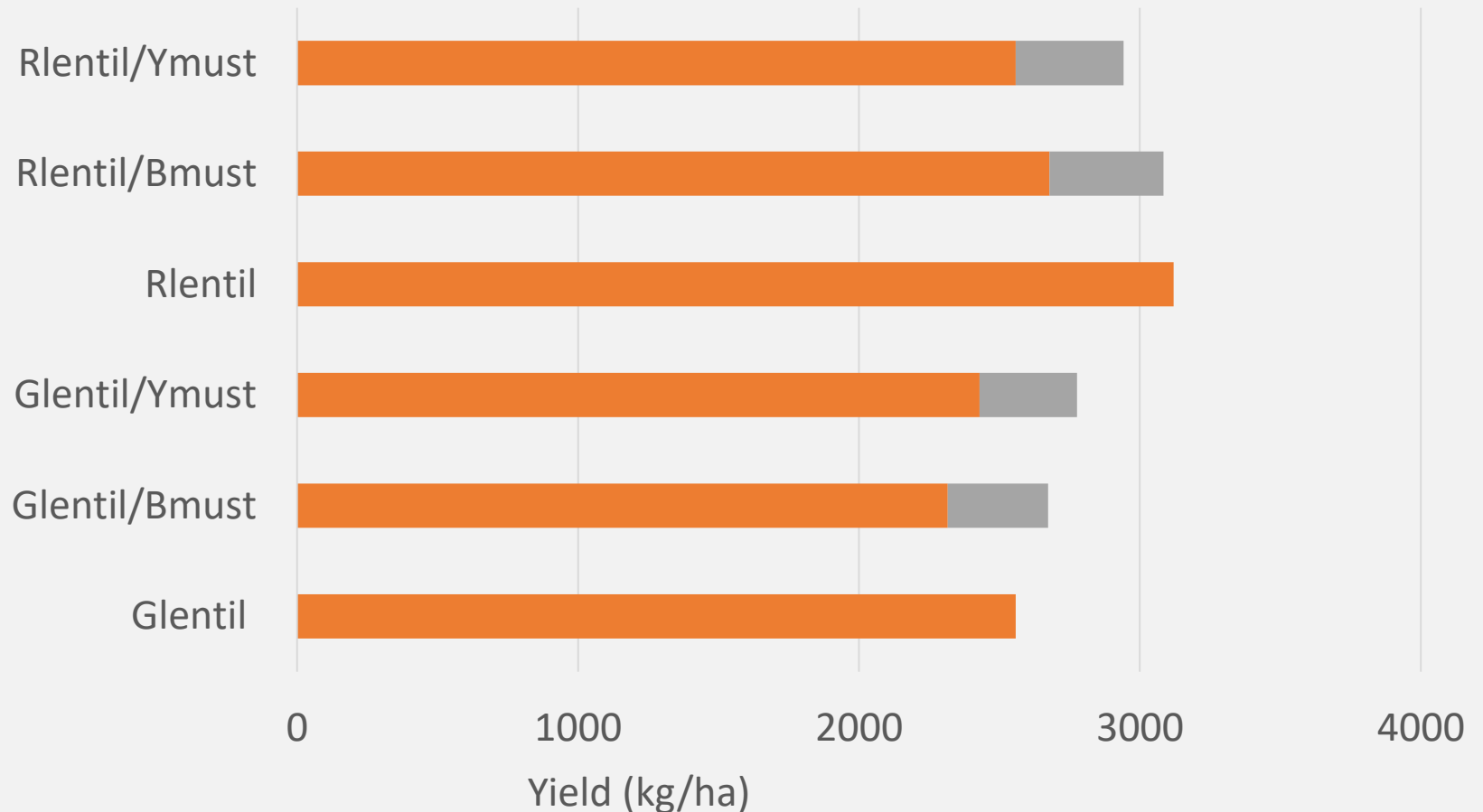




# Lentil – Mustard Intercrop

2017 Redvers Yields

■ Lentil ■ Mustard



# Mustard Intercrops Preliminary Testing

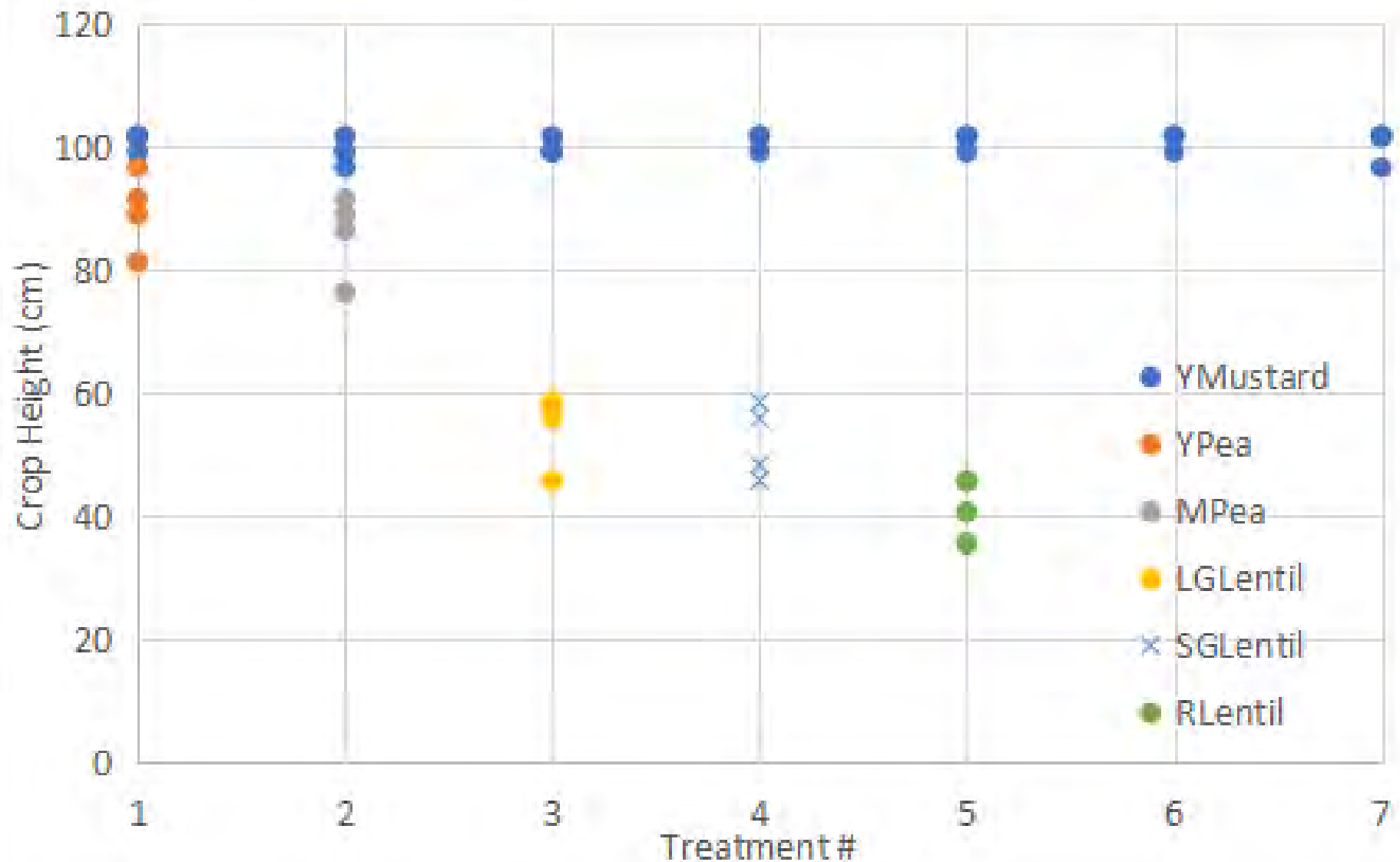
- ◆ Yellow mustard with peas (2016 ADOPT Trial)
  - ◆ 20 bu/ac maple pea, 711 lb/ac mustard
  - ◆ 19 bu/ac yellow pea, 641 lb/ac mustard
- ◆ Yellow mustard with red, small green, large green lentil (low yield)

# 2016 ADOPT Trial (4 reps, Redvers)

<b>Brassica Type</b>	<b>Pulse Type</b>	<b>Total Yield lb/ac</b>	<b>Pulse Yield lb/ac</b>	<b>Mustard Yield lb/ac</b>
Yellow Mustard	Yellow Peas	1862	1151	711
Yellow Mustard	Maple Peas	1840	1199	641
Yellow Mustard	Large Gr Lentil	1059	322	738
Yellow Mustard	Small Gr Lentil	1136	357	779
Yellow Mustard	Red Lentil	1093	400	693
Yellow Mustard	None	851	0	835



# Relative crop height is important



# Brassica carinata / Pulses

## ◆ Fababean

- ◆ 2016 – 48 bu/ac faba plus 1500lb/ac carinata

- ◆ 2017 – 75 bu/ac faba plus 1000lb/ac carinata

## ◆ Maple pea (27 bu/ac) & B. carinata (993 lb/ac)

## ◆ B. carinata with dry bean

- ◆ 2017 – 790 lb/ac Flor de Junio bean / 2050 lb/ac carinata

(Very viney type bean climbs 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 (not GMO) with flax or *B. carinata* (needs more work)
- ◆ Triple Crop (Ymust, Lentil, Pea)







# Mustard in Triple Crop





## 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
- ◆ Contamination of mustard with canola, wild mustard or cleavers is a barrier (color sorting?)



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



2



**RealAgriculture**  
@realagriculture

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

@SE\_ResearchFarm shares her advice for intercropping rookies:  
[bit.ly/2CJsbfv](http://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**