

# Effective statistical evaluation of grower group on-farm trials

## Session Overview

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- who are we?
- what is **S**tatistics for the **A**ustralian **G**raains **I**ndustry
- why are we presenting this information session?
- session overview

# Introduction

- who are we?

- what is **Statistics for the Australian Grains Industry**



Project Leader: Brian Cullis (UoW)

Research & Collaborative  
Projects (RCP)

Julian Taylor (SA)  
Alison Smith (UoW)  
Simon Diffey (UoW)

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(ILT)

Alison Kelly (DAFF)  
Bev Gogel (UA)  
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Dini Ganesalingam (UWA)  
Chris Lisle (NSWDPI)  
Susan Fletcher (DAFF)  
Gaby Borgognone (DAFF)  
Clayton Forknall (DAFF)  
Daniel Tolhurst (UoW)

Software Development (SD)

David Butler (DAFF)

## Introduction

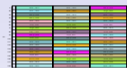
- why are we presenting this information session?
  - Trent asked us
  - *to ensure most reliable information given to growers* crucial that on-farm experimentation is as effective and efficient as possible ...
  - given GRDC investment and role of SAGI for GRDC = our role to give this information
- thanks for this opportunity

# Five fundamentals of on farm experimentation



1. decide on aim of research: the theory to be addressed/the question to be answered ...

2. generate statistically valid experimental design to address **RQ** ...



3. conduct a successful on-farm trial ...



4. do a valid statistical analysis ...  $y = X\tau + Zu + e$

5. make sound statistical inference/ draw some valid conclusions ...



## **Session 1:** Concerning trial design

- research question, basic design principles, demonstration trials, testing over multiple sites...

## **Session 2:** Concerning analysis of data and interpretation of results

- analysis of standard trials, ANOVA, importance of a model fitting process, spatial methods of analysis, analysis of a data example...

## **Session 3:** Software

- what we use/ what you use...