SCC-33 2019
February 5th Key Largo, FL
Kyle Kepner

2 Years South Dakota State University Crop Performance Testing
9 Years Assistant Corn Breeder, AgReliant Genetics
6 Years Product Manager Wensman Seed Company
Our Mission

“Provide the research community technology to improve efficiency and accelerate innovation”
ARM Software is Trusted by Over 10,000 Researchers and Scientists Worldwide
Use ARM for all stages of an experiment.

To **plan** and **create** protocols, to **randomize** and **manage** trials, to **analyze** data and **report** the results.
ARM software provides a defined structure to enter information consistently, with master list dictionaries to standardize vocabulary, and has tools for every step of an experiment.
ARM the Industry Standard

The top 12 Agro-Chemical companies now depend on ARM Software worldwide.
Field License Bundle

This bundle brings ARM to the field to help improve efficiency and accuracy.
Leaf Wall Area

Software solution for an industry specific challenge. ARM facilitates the research techniques for future regulation of product applications.
Weather Data Import

Collaboration with ClearAg (Iteris) to build a new feature that allows you to import weather data.

ClearAg offers specific information by utilizing meteorology, agronomy, land surface modeling and crop production at specific GPS coordinates.
Marketing & Support

We hired a full-time sales and marketing associate to focus on our client communications.
The Year Ahead
Training Initiatives

Continue to expand our tools and resources to make it easier for our clients.

- Tutorials
- Coaching Events
- Webinars
Product Release

Work as a team to ensure every client is aware of the new features and how to use them to make their work more efficient.
Precision Ag

Work closely with South Dakota State University to provide support with development and implementation.

• Correlation of known variability
• UAV data analysis
Client Driven Development

Working closely with our clients to implement additional features and intuitive reporting.

Providing new features throughout the year.
ARM improves efficiency, increases accuracy, and promotes better quality of results.
Repeated Measures
Repeated Measures

Analyze repeated assessments across time

Enhancement

• Powerful statistical analysis which enable the control of factors which cause variability between treatments over time.

• Provides analysis of treatment means over time to determine if there is an overall time effect on the treatments performance.
Repeated Measures

• Assessments repeated at regular intervals during the trial season
Repeated Measures

Treatment x Time

![Graph showing repeated measures over time with multiple lines representing different treatments and dates. The x-axis represents rating dates, and the y-axis represents a percentage scale. The graph includes specific dates: Jun-8-2014, Jun-22-2014, Jul-5-2014, Jul-19-2014, and Aug-3-2014. Each line is color-coded and marked with symbols for identification.]
Repeated Measures

Define assessments for analysis:

1. Select a column to find potential repeated assessments.
2. ARM proposes fields to match other columns.
3. Diagnose issues with column selection.
4. Or load from history of column matches.
Repeated Measures

Means and comparison letters for:
- Treatments
- Rating Dates
- Treatment x Rating Date interaction

Apply correction to adjust for correlation (H-F-L or G-G)

Repeated Measures AOV table
Repeated Measures

Treatment x Time Graph
- Plot treatment means over time.
- Visually identify treatment interaction across assessment dates.
Study Review
Review Study

Mark a trial as Reviewed

- Track whether a trial has been reviewed
- Identifies who marked as reviewed
- Trial Settings > General tab

- 'Trial Reviewed' action is automatically logged in Notes tab of Site Description
- Checkbox is cleared when any change is made to data in the trial
Create a review group

• 'Review' study rule defines who is allowed to mark a trial as reviewed

• **Condition** field defines who to include in the group:
  - just protocol or trial owner(s)
  - everyone in my company
  - Anyone (i.e. no group)

• Example: Sponsor wants to ensure the study is reviewed internally. Contractor can still create their own separate review group to review before sending back to the sponsor by adding another 'Review' rule for their company.
Study Rules
Study Rules

Merge Study Information

• Easily copy information from study to study.
• Replaces “Save As” function.

Enhancement

• Choose to not merge study rules if the study is originated by your company.
• Offers new flexibility for internal researchers.

Feature in action
**Merge Study Rules**

**Enhancement**

- Limit study rules merged to only selected protocol/site description sections.
Study Settings
Layout Options

Clarified 'buffer' option text

- Changed to 'Alley width' - a more commonly used term
- Previously called 'Buffer' between blocks or plots
- Protocol/Trial Settings > Layout tab
Track Trial Progress*

Why document trial progress?

- Requested by sponsors.
- Provides visibility and credibility to timely data entry.
- Added new fields to track status and progress throughout the season.

*Coming in ARM 2019.1
Additional new fields to track status and progress throughout the season.

- Application tab > **Appl. Entry Date**
- Assessment Header > **Data Entry Date**
Tablet Data Collector (TDCx)
Display the current position in real-time

- Researchers now can determine the accuracy of the GPS device while documenting coordinates.
- TDCx will display: GPS coordinates, accuracy and altitude.

Where is this feature?

Choose “Tablet Read GPS Editor”
ARM Migration
Migrate Settings*

Copy settings when moving to a new PC

• Copy personal lists, report sets, ARM settings to new computer

What's new?

Prompt to create package before deactivating the old PC.

*Coming in ARM 2019.1
SE Definitions
SE Definitions*

Plan and define standard evaluations (SEs) and tasks to use in the study
• Simpler than importing SEs from file into assessment data editor

Use Tools > 'Build Header, Tasks' to create the SEs and tasks defined in this tab

Multiple rating timings create columns for each timing code
• Two-column SE F097_C2 times 3 rating timings A1-A3 = 6 total data columns

*Coming in ARM 2019.1
SE Definitions*

1. Display SE Name list
2. Select an SE, can search/filter descriptions
3. Preview assessment columns defined in SE

Can also define tasks on this tab to add to Schedule editor

*Coming in ARM 2019.1