ARM 2024.2 Features and Enhancements
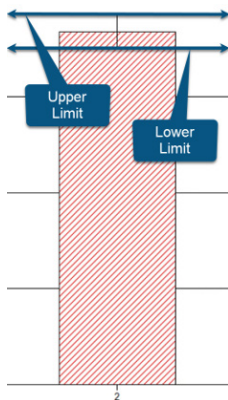
Run "Check for Updates" to take advantage of the latest developments! Find release notes on the website.

NEW! Equivalence Testing

What it does: determines if treatments are effectively the same.

Why use it: AOV has limitations - the same letter implies treatments are "not significantly different" but does NOT mean the two are "significantly the same."

*Example: We want to claim our newly developed product formulation is **just as good** as the industry standard product.*

Step 1: Researcher defines how large of a difference is **insignificant**:
- Percent of standard (e.g. within 3% of standard trt)
- Absolute value (e.g. within 5 bushel of standard)
- Effect size (Cohen's d = [Trt – Std] / StDev)

This creates an Equivalence Interval (called the **Limit** in ARM).

Step 2: Conduct hypothesis test for equivalence
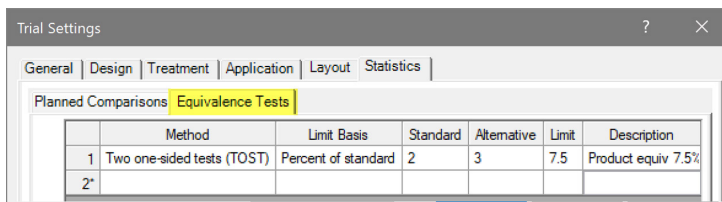Ho: The difference between the treatments is outside the equivalence interval.
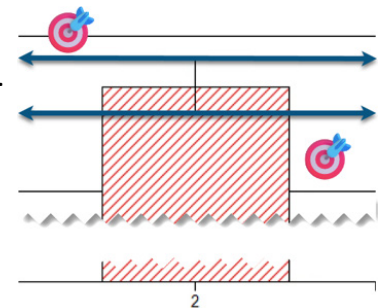
To reject Ho and confirm equivalence, we need to demonstrate that the difference is within this interval. This involves performing two tests:
- comparison treatment is less than the lower limit
- comparison treatment is larger than the upper limit

Example in ARM: 7.5% of standard
- Enter information on "Equivalence Tests" tab in Trial Settings
- Check "Include Equivalence Tests" in AOV Means Table Report Options
- Review P-values: (1) "smaller than lower" and (2) "larger than higher"

Equivalence Tests Product equiv 7.5%?	
Mean Difference	0.503
NHST t	0.074
NHST P (t)	0.942
TOST(Lower) t	2.107
TOST(Lower) P(t)	0.026
TOST(Upper) t	-1.959
TOST(Upper) P (t)	0.034
Equivalence established	
NHST Power	0.051

	Method	Limit Basis	Standard	Alternative	Limit	Description
1	Two one-sided tests (TOST)	Percent of standard	2	3	7.5	Product equiv 7.5%
2*						

*Need BOTH to be significant to have equivalence.
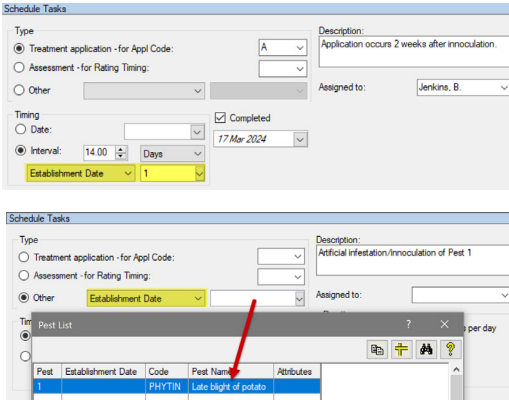
NEW! Pest Establishment Date in Schedule Tasks

Each protocol and trial file should include a list of tasks that are to be scheduled for the trial.

- Pest Establishment Date added to Type and Timing (Interval)
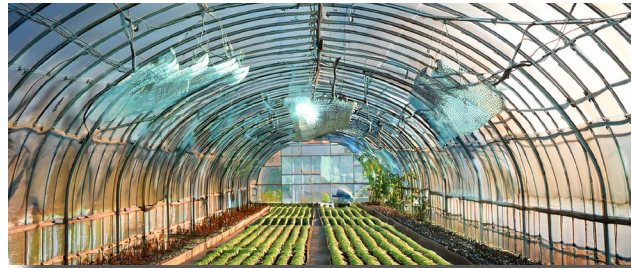
NEW! Required Field in Assessment Data Editor

Added Required field to header to describe necessity of assessment/SE:

- REQUIR - required rating which **must** be performed
- ALTERN - alternative, a rating is required but allows a **choice** of at least 1 of assessments/SEs marked as ALTERN
- OPTION - optional rating, but **recommended** if applicable

Cannot delete a column marked as Required.
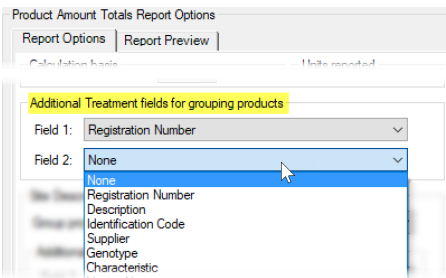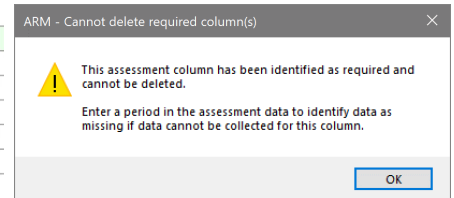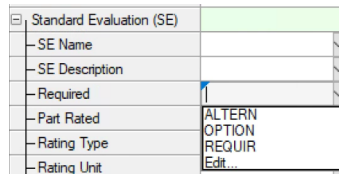
NEW! Product Amount Totals

- Add up to two additional Treatment fields to product totals table
- Used for matching and combining product amounts

Product quantities required for listed treatments and applications across multiple studies:

Amount*	Unit	Treatment Name	Registration Number	Form Conc	Form Unit	Form Type
15.900	mL	Tub	Reg123456789	250	G/L	EC
31.800	mL	Tub	R987654321	250	G/L	EC

GDM Representative Spotlight: Tobie Klerck

We depend on our representatives to provide local training, sales, and technical support in nearly 100 countries worldwide. Tobie joined our team in 2017 and serves Africa. Tobie has 30 years of experience in the agro-chemical R&D industry and over 20 years of ARM experience. Tobie utilizes his industry knowledge to help his clients maximize efficiency with ARM software.

Learn more about Tobie **HERE**.