

## Primary Objectives of Study Rules:

- **Time savings:** Automating validation reduces the need for manual checks.
- **Consistency:** Ensuring all required data fields are completed uniformly.
- **Improved data accuracy:** Reducing errors and missing information before submission.

Some study rules act as **powerful tools** beyond basic validation, allowing for greater **automation** and **customization**.

Instead of just identifying missing information, these tools help **streamline trial management** and **improve overall data quality**.

This video takes a deeper dive into ARM Study Rules. We will review GDM's recommended Study Rules and how to leverage them to improve your research. Watch our Intro to Study Rules tutorial video for a basic overview of study rules.

ARM Study Rules create directions to follow when conducting a trial. Having a predefined set of rules ensures standardization and consistency across all trials. The primary objectives of study rules are:

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- **Consistency** – Ensuring all required data fields are completed uniformly.
- **Improved data accuracy** – Reducing errors and missing information before submission.

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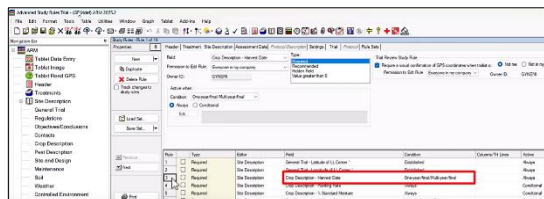
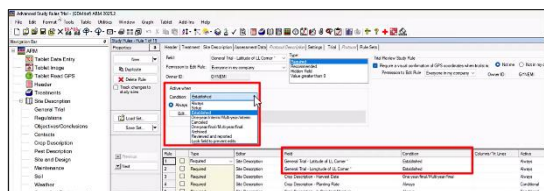
The following study rules provide the most significant value by unlocking key capabilities and functionalities based on any field in the trial.

This first item is not a study rule itself but rather a **feature** in ARM: conditions applied to study rules. Conditions allow you to define **when** a study rule should be activated based on any field in the trial.

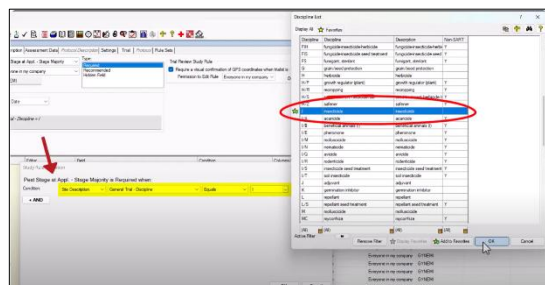
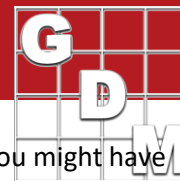
Previously, the trial status served as the primary trigger for study rules. For example:

- **GPS coordinates** might be required as soon as the trial is established.
- **A harvest date** is not required until the trial status is set to "Final."

With **conditional study rules**, you are no longer limited to trial status. You can now trigger a rule based on **any field** in the trial. This feature **adds flexibility** and allows for more **precise control** over when study rules are applied.



# Advanced Study Rules

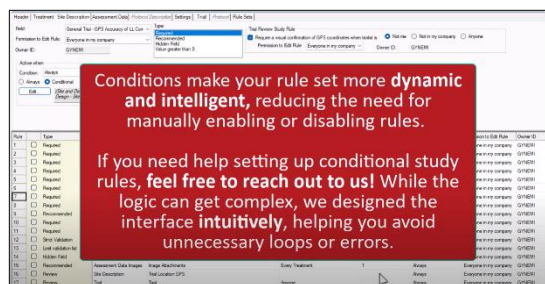
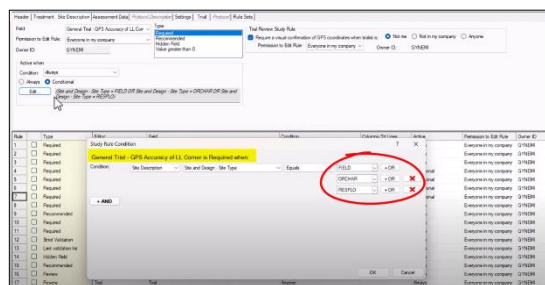


Our next example involves **global rule sets**. You might have **baseline rules** that apply to every study (e.g., requiring GPS coordinates). With **conditional study rules**, you can add more specific rules that only trigger during certain scenarios. For example, if the Discipline is set to insecticide, you may require pest stage at application fields, whereas in a biostimulant study, they are not. The ability to require fields in certain types of trials but not others makes the system more adaptable without unnecessary restrictions.

You can build **sophisticated conditional rules** by specifying multiple criteria.

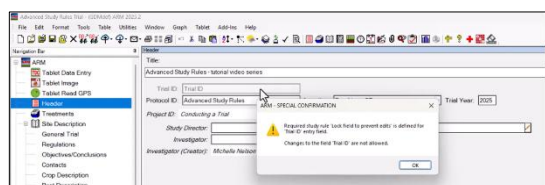
We will show this through an example of GPS Accuracy Requirements.

- If a trial is a **field study, orchard, or research plot**, then GPS accuracy must be recorded.
- If you conduct the study in a **greenhouse**, GPS accuracy is **not** required.
- Instead of creating separate rule sets, you can use **the and/or logic** to ensure the rule only applies when needed.

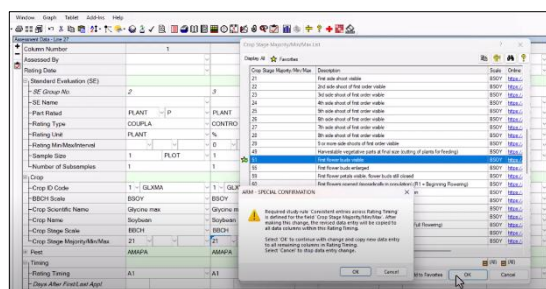
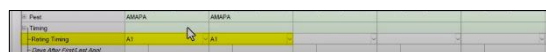
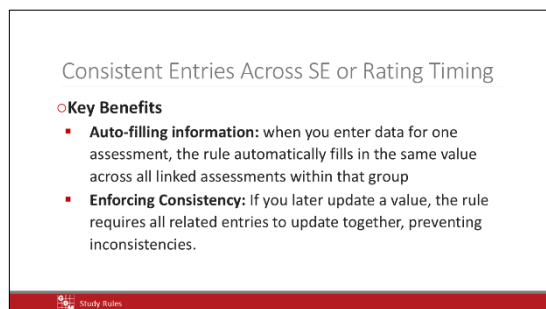
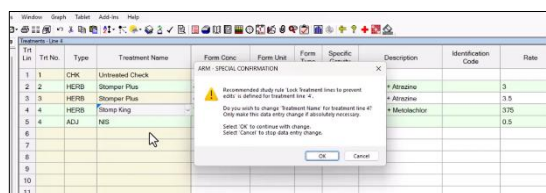
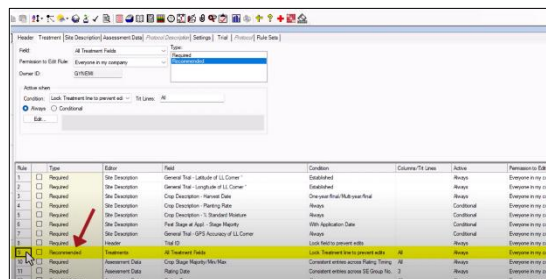


Conditions make your rule set **more dynamic and intelligent**, reducing the need for manually enabling or disabling rules. If you need help setting up conditional study rules, feel free to reach out to us! While the logic can get complex, we designed the interface intuitively, helping you avoid unnecessary loops or errors.

Next, the study rule "Lock field" prevents edits once you fill in the field. This ensures that **critical information remains unchanged**, preventing errors and maintaining data integrity. The most common use case is for **protocol writers** entering key data that trialists should not modify. You can lock a **wide range of fields**, though not necessarily every field.



For example, The **Trial ID** is a crucial identifier for internal systems. If changed, it could cause significant issues across multiple platforms. Locking it ensures stability.



Instead of making a field **fully locked ("Required")**, it is often best to set it as **"Recommended"**. If set to **"Required"**, the field **can never be changed**, and the only way to update it is by **sending the trial back to the protocol owner** for manual adjustments. If set to **"Recommended"**, the user will receive a **warning message** if they attempt to edit the field. This prevents **accidental changes** while allowing modifications in rare but valid cases without unnecessary delays. For example, if the treatment name field is locked, but you need to swap a product in a specific region.

By using **"Recommended"** instead of **"Required"**, trialists are **warned before making changes**, but they still have the flexibility to adjust fields **when absolutely necessary**.

This feature helps strike the right balance between **data protection** and **operational flexibility**!

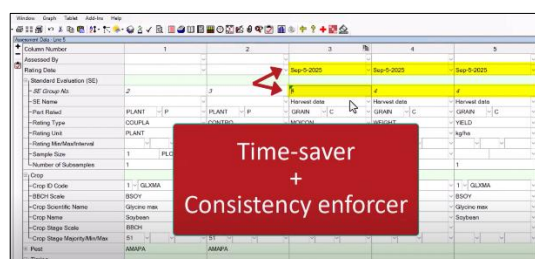
The study rule "Consistent Entries Across SE or Rating Timing" ensures that **related assessments** maintain **consistent values** across specific fields, such as **rating date**. It provides two key benefits:

1. **Auto-filling Information** – When you enter data for one assessment, the rule automatically fills in the same value across all linked assessments within that group.
2. **Enforcing Consistency** – If you later update a value, the rule requires all related entries to update together, preventing inconsistencies.

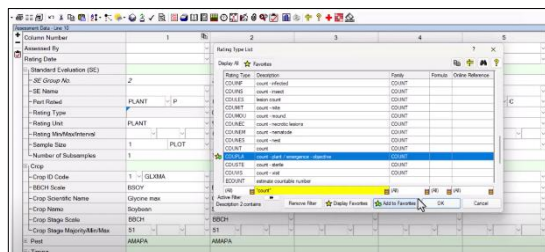
In the assessment editor, columns can be linked together for related assessments using the Rating Timing field. Or when columns are created from an SE, the SE Group Number field is automatically filled to link those columns. This linkage is used by this study rule to enforce consistent values. For example, creating a Consistent Entries rule for Crop Stage Majority ensures that the same stage value is entered for all columns with the same Rating Timing, by automatically filling the other columns. If a value is later changed, a confirmation popup appears, requiring the user to update all linked fields or cancel the change.

Another common example is the Rating Date, with the assumption that the linked columns were all performed on the same day.

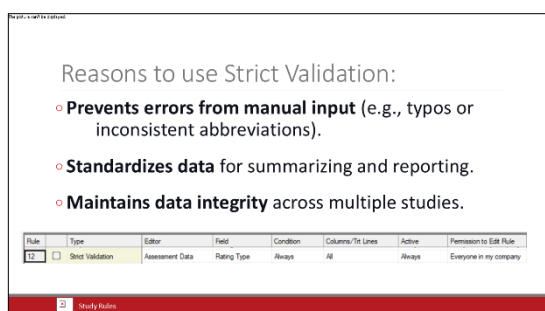
# Advanced Study Rules



This rule serves as both a **time-saver** (through autofill) and a **consistency enforcer**, preventing data discrepancies in related assessments.



The next study rule, Strict validation, requires that users select values **only from ARM's predefined list**, preventing **manual data entry** and enforcing standardization. Instead, ARM automatically displays either **the user's favorites list** or the **master list** (if no favorites are set). Users must select a value from the provided list, ensuring consistency across entries.

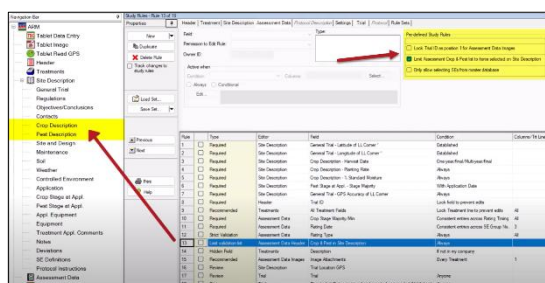


**Assessment** fields like Rating Type and Unit are common examples, but strict validation is also available in other fields. Choose fields carefully for strict validation, to ensure the predefined list is comprehensive enough to cover all necessary scenarios. Unlike **required** or **recommended** fields, strict validation **forces selection from a controlled list**, making it a powerful tool for maintaining data quality.

## Why Use Strict Validation?

- Prevents errors from manual input (e.g., typos or inconsistent abbreviations).
- Standardizes data for summarizing and reporting.
- Maintains data integrity across multiple studies.

The **Limit Assessment Crop & Pest List** rule ensures that assessment crop and pest selections are restricted to **only those defined in the Site Description**. This rule helps maintain data consistency by ensuring that assessments reference only **documented pests and crops**.



Found in the **Assessment Data** section of Study Rules, you can turn this rule **on or off** for individual trials or include it in a protocol to apply across all generated trials. Instead of displaying the entire **EPPO weed list** or a broad selection of pests, only those **documented on the Pest Description editor for the specific trial** are available. If a required pest or crop is missing from the list, users can quickly navigate to the Site Description and add it. This rule does not prevent adding new pests or crops but ensures proper documentation before being used in an assessment.

## Limit Assessment Crop & Pest List

### Key Benefits

- **Prevents Incorrect Entries:** Reduces risk of selecting the wrong pest or crop by mistake.
- **Ensures Documentation Completeness:** Any new pest or crop must be added to the Site Description, ensuring all relevant details are recorded.
- **Maintains Strong Data Links:** Keeps assessment data aligned with trial-defined parameters.

GDMD Study Rules

Utilizing this study rule has some key benefits.

- **Prevents Incorrect Entries** – Reduces the risk of selecting the wrong pest or crop by mistake.
- **Ensures Documentation Completeness** – Any new pest or crop must be added to the **Site Description**, ensuring all relevant details are recorded.
- **Maintains Strong Data Links** – Keeps assessment data aligned with **trial-defined parameters**, similar to how application codes must match those in the Treatment Editor.

| Trial Line | Trial No | Type | Treatment Name | Form Conc | Form Unit | Form Type | Description             | Rate  | Rate Unit | Other Rate | Other Rate Unit | Appl Code |
|------------|----------|------|----------------|-----------|-----------|-----------|-------------------------|-------|-----------|------------|-----------------|-----------|
| 1          |          | CHK  | Unreated Check |           |           |           |                         |       |           |            |                 |           |
| 2          |          | HERB | Stomper Plus   | 450       | gAL       | ES        | Butylate + Abamectin    | 2     | kg Alpha  | 2.67       | LB AIA          | A         |
| 3          |          | HERB | Stomper Plus   | 450       | gAL       | ES        | Butylate + Abamectin    | 3.5   | kg Alpha  | 3.12       | LB AIA          | A         |
| 4          |          | HERB | Stomper King   | 75        | %VW       | EP        | Abamectin + Metolachlor | 325   | g Alpha   | 0.335      | LB AIA          | B         |
| 5          |          | ADJ  | MIS            | 150       | %         | ES        | % V/V                   | 0.893 | LB AIA    |            |                 | B         |

## Hidden Fields Rule

### Once this rule is active:

- It completely hides the specified field from external users.
- It won't appear in the **Treatments Editor** or **Reports**.
- Even if all fields are displayed, the hidden field remains inaccessible.

| Rule | Type                     | Editor       | Field      | Condition   | Columns/Tri Lines    | Active | Permission to Edit Rule |
|------|--------------------------|--------------|------------|-------------|----------------------|--------|-------------------------|
| 14   | <input type="checkbox"/> | Hidden Field | Treatments | Description | If not in my company | Always | Everyone in my company  |

By effectively implementing study rules, trial data remains  
**accurate,**  
**secure,**  
**and consistent!**

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Another key study rule is **hidden fields**, which are particularly useful for **confidential information**. For example, in **treatment lists**, a sponsor might want to protect proprietary ingredient details while still maintaining them internally. Instead of removing this information, you can store it in a field like the **Description** column and apply a **hidden field rule**.

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- It won't appear in the **Treatments Editor** or **Reports**.
- Even if all fields are displayed, the hidden field remains inaccessible.

The key to making this work is **defining who should be restricted** from viewing the field. You can control this in the **Condition** setting by selecting "**If not in my company**."

Note: the rule owner can still see the hidden information, but when the file is opened by another licensee outside of your company, the information will disappear.

By effectively implementing study rules, trial data remains accurate, secure, and consistent!

For more information on validation, check out our tutorial video: <https://gdmdata.com/Resources/Video-Tutorials/Validate-Your-ARM-Trial>

Watch our Intro to Study Rules tutorial video for a basic overview of study rules: <https://gdmdata.com/Resources/Video-Tutorials/Intro-to-Study-Rules>

Study rules are powerful tools, whether you are a sponsor or a trialist.