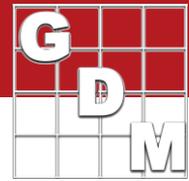
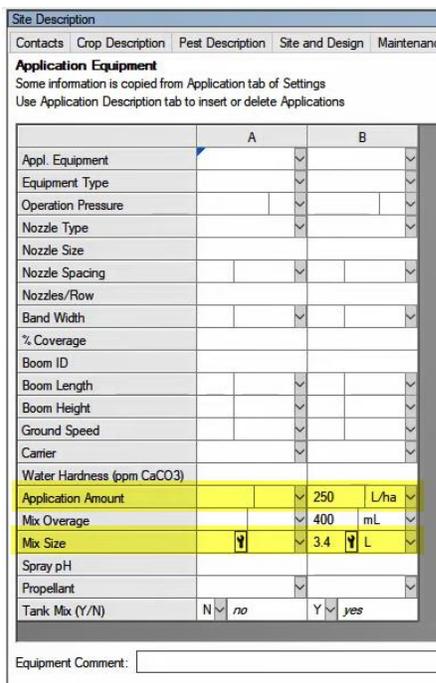
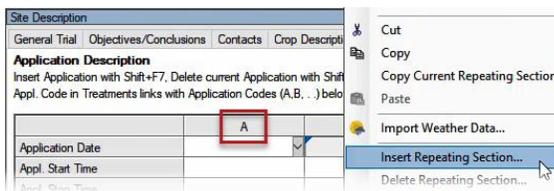
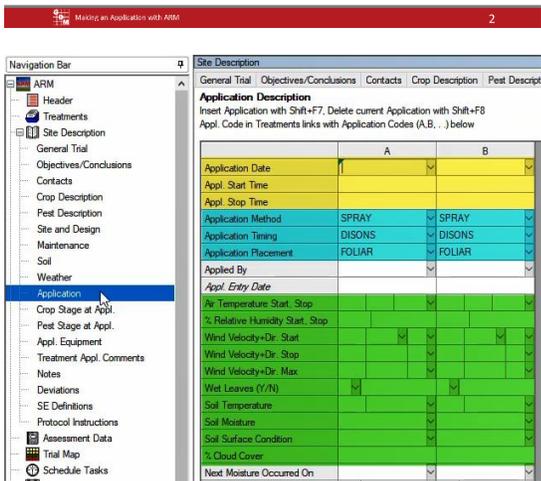


Making an Application with ARM



In this video...

- Application details -> Site Description
 - Application Amount, Mix Size
- Mix Size Calculator
- Spray/Seeding Plan report



In this video, we discuss how to plan and document treatment applications in a trial. We will explore the Site Description tabs that are used to fill in application details, especially the Application Amount and Mix Size values. We will also use the Mix Size Calculator and the Spray/Seeding Plan report to calculate the exact amount of product to measure for each treatment application.

Let's begin by opening the tutorial trial 'MakeAnApplication'.

An application is documented within a Trial primarily on the Application and Application Equipment tabs of the Site Description. Enter the time, method, weather and soil details at the time the application is performed, on the Application tab.

Applications are denoted with letters instead of numbers, so here we can see the two applications planned for this study, A and B. Use the 'Insert Repeating Section' command to add an additional application to the study, if necessary.

The Application Equipment tab is used to fill in details about the equipment used to make the application. This includes the Application Amount and Mix Size, used in calculating chemical product amounts to measure for the application.

The Application Amount (previously called the Spray Volume) is the amount or volume *per unit area* to use when applying treatments. In our example, we dilute treatments in water before application, so the Application Amount is the amount of water plus formulated product that is applied to our experimental units on a per-area basis.

The mix size is the amount of mix (diluent + formulated product) that is to be prepared in a single "batch" while making the application to all experimental units of the treatment component.

Making an Application with ARM



Water Hardness (ppm CaCO3)			
Application Amount	200	250	L/ha
Mix Overage		400	mL
Mix Size		3.4	L
Spray pH			
Propellant			
Tank Mix (Y/N)	N	no	Y
			yes

If these fields are left empty, ARM uses the values in Settings. However, it is recommended to always fill the information in the Site Description. In fact, just clicking into a field auto-fills the values from Settings!

Mix Size Calculator - Application A

Application amount: 200 L/ha

Mix Size

for Application	A
Treatments	1
Replicates	5
'Plot' EU size	24 m ²
Application amount	200 L/ha
Mix size unit	L
Minimum	2.4 L
Overage	10 %
Calculated mix size:	2.64 L
User-defined mix size:	

OK

1. Access the Mix Size Calculator by clicking on the Tool icon in the Mix Size field.
2. ARM calculates the minimum amount of mix needed to cover the area of 1 treatment across all reps, based on the size of the experimental unit and the application amount.
3. Then enter an Overage value to account for filling the lines or to ensure proper coverage – it can be expressed as a percent or a set volume.
4. ARM adds the overage to the minimum mix, and sets this as the calculated mix size.

Tit Line	Tit No.	Type	Treatment Name	Other Rate	Other Rate Unit	Appl Code	Appl Description
1	1	CHK	Untreated Check				
2	2	HERB	Stomper Plus	2.67	LB A/A	A	toliar at disease onset
3	3	HERB	Stomper Plus	3.12	LB A/A	A	toliar at disease onset
4	4	HERB	Super Stomp	0.335	LB A/A	B	toliar Tank Mix at disease onset
5	4	ADJ	NIS	1.12	LB A/A	B	toliar Tank Mix at disease onset
6							

Once the applications are configured for the study, then specify which treatment components are applied at each of these applications, on the Treatments editor.

In our example, treatments 2 and 3 are applied with the same equipment – Application A. Then both components of Treatment 4 are applied together as a tank mix as Application B on the same date.

Treatment Name	Form Conc	Form Unit	Form Type	Description	Rate
Untreated Check				not treated	
Stomper Plus	480	gA/L	EC		3

Form Type	Term	Form State	Undiluted	Obsolete	Definition
EC	emulsifiable concentrate	Liquid			A liquid, homogeneous formulation
ED	electrochargeable liquid	Liquid	Yes	Y	Special liquid formulation for electro
EG	emulsifiable Granule	Dry			A granular formulation to be applied
EO	emulsion, water in oil	Liquid			A fluid, heterogeneous formulation
EP	emulsifiable powder	Dry			A powder formulation to be applied
ES	emulsion for seed treatment	Liquid			A stable emulsion for application
EW	emulsion, oil in water	Liquid			A fluid, heterogeneous formulation
F	flowable	Liquid			
FG	fine granule	Dry	Yes	Y	A granule in the particle size range
FK	smoke candle			Y	Special form of smoke generation

Also note the Formulation Type field, which is critical for performing treatment calculations. Unit conversions and product calculations depend on whether the treatment formulation is a dry or a liquid, and whether it is applied undiluted, so it is important to specify the right Form Type to begin with.

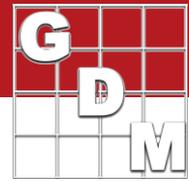
Print Reports

Available Reports

- Protocol
- Trial
 - Assessment Footnotes
 - Data Collection
 - Named View
 - Selected Tabs
 - Spray/Seeding Plan
 - Standard
 - Spray
 - Seeding
 - Status Report

All of this information is used to calculate the amount of each treatment product to measure when making an application. ARM performs this calculation on the Spray/Seeding Plan report. (Review the basics of the Print Reports process from the video 'Generating a Protocol Report'.)

Making an Application with ARM



Conducting a Trial with ARM - tutorial video series

Trial ID: MakeAnApplication
 Protocol ID: CreateTrial
 Project ID: Conducting a Trial

1 3 2

Treat	Treatment Name	Form Conc	Form Conc Unit	Form Type	Rate	Appl Code	Appl Code	Mix Size	Amnt Product to Measure	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
1	Untreated Check									102	103	106	101	103
2	Stomper Plus	480 g/L	EC	3 kg a/ha	A	200 L/ha	2.64 L	62.5 mL/mx	202	204	206	401	404	404
3	Stomper Plus	480 g/L	EC	3.5 kg a/ha	A	200 L/ha	2.64 L	98.25 mL/mx	201	203	205	302	403	403
4	Super Stomp NIS	75 %AW/W	DF	375 g a/ha	B	250 L/ha	3.4 L	6.8 g/mx	101	104	105	402	405	405

This report includes:

1. Specified treatment information
2. The experimental units to apply each treatment to, and
3. The calculated amount of product to measure for each treatment. In this case, it is calculated based on the entered mix size.

Spray/Seeding Plan Report Options

Report Options Report Preview

Product amounts based on

Mix size

Area of one 'Plot' experimental unit

Area of one treatment

Application code

Sort by

Print selected

Multifactor Designs

Include treatment tables grouped by factor level

We can change to calculate amounts based on the area of an experimental unit or treatment. And we can also print a separate table for each application. Now only treatment line components linked to that application are included in that table.

Product quantities required for listed treatments and applications of trials included in this table:

Amount*	Unit	Treatment Name	Form Conc	Form Unit	Form Type	Lot Code
203.125	mL	Stomper Plus	480	g/L	EC	
7.500	g	Super Stomp	75	%AW/W	DF	
21.250	mL	NIS	100	%	SL	

- * 'Per area' calculations based on 5 replicates of 4 by 6 meters 'Plot' experimental units (area of one treatment).
- * 'Per area' calculations based on application amount= 250 L/ha, mix size= 3.4 L (mix size basis).
- * Product amount calculations increased 25 % for overage adjustment.
- * 'Per volume' calculations use spray volume= 250 L/ha, mix size= 3.4 L.

At the end of this report is the Product Amount Totals section. This lists the total quantity of product needed across all applications and treatments in the study.

Spray/Seeding Plan Spray/Seeding Plan Page Setup Product Amount Totals

Calculation basis

Mix size

Area of one treatment

Overage

Include overage

From study setting

Fixed percentage

25 %

Units reported

mL & g

L & kg

Keep with previous page

OK Cancel Help

More Options

An overage defined for product amount totals is not used for individual product calculations on the Spray/Seeding Plan report. It only is used to adjust total quantity of each product on the product amount totals table.

There can also be an overage added to these totals as well. This differs from the overage defined within the mix size, and is instead applied only to the amounts listed in this table to ensure the proper amount of product is ordered or received.

This overage can be a fixed percentage defined here, or use the overage that is entered on the Application tab of Settings in the study.