

Medicated Feed Additive Serial Dilutor Calculator Guide Prepared by Shane Gadberry, Professor – Animal Science

The **Medicated Feed Additive Serial Dilutor Calculator** is an educational tool for calculating the quantity of a medicated feed additive for a feed group and applying a one, two, or three step sequential dilution to achieve a more manageable feed mixing and delivery rate.

1. Enter the Target Medicated Feed Intake and rate (Drop-Down Menu) as either mg/animal or mg/lb weight.

Target Medicated Feed	Select from Drop-				
Intake	Down Menu				
	mg/animal	~			

- 2. Herd and Feed Inputs
 - a. Enter the Number of Animals (animals) in the feeding group.
 - b. Enter the Average Size (lbs/animal) of animals in the feeding group.
 - c. Enter the Total Daily Supplemental Feed Rate (lb/animal).
 - d. Enter the Target Batch Mix Size (lb).
 - e. Enter the Concentration of the Medicated Feed Article (g/lb) as stated on the label.

Herd and Feed inputs									
Number of Animals in the Feeding Group		animals	Target Daily Supplemental Feed Rate		lb/animal				
Average Size of animals in the feeding group		lbs/animal	Total Daily Supplement Feed for the Group	0	lb/d				
Target Daily Medicated Feed Intake		mg/animal	Target Batch Mix Size		lb				
Dose Per Unit of Animal Weight	0	mg/lb	Number of Days Feeding Per Batch	0	days				
Concentration of Medicated Feed Article g/lb									

3. Dilutions - Up to 3 serial dilutions are available (Dilute 1, Dilute 2, and Dilute 3). For dilute 1, enter the pounds of concentrated medicated feed from the bag to be mixed with a non-medicated feed of similar particle size to achieve the first level of dilution. A one-to-one dilute for example will reduce the medicated feed concentration by 50%. For Dilute 2, the medicated feed from Dilute 1 is further diluted with a non-medicated feed to achieve an even more dilute form of a medicated feed mix. The Dilute 2 mix can be further diluted to achieve Dilute 3 mix. Subsequent dilution amounts of a medicated feed should not exceed previous dilution total.

Dilute 1			Dilute 2		Dilute 3			
Amount of concentrated medicated feed	1	lb	Amount of DILUTE 1 Medicated Feed	1	lb	Amount of DILUTE 2 1 Ib Medicated Feed		
						Amount of non-medicated [1] Ib		
Amount of non-medicated feed supplement for dilution	1	lb	Amount of non-medicated feed supplement for dilution	1	lb	Concentration of Final 0.000 g/lb Dilute 3 Medicated Feed		
Concentration of Final	0.000	g/lb	Concentration of Final Dilute 2 Medicated Feed	0.000	g/lb	If the total amount of Dilute 8.000 lbs		
Total Amount Dilute 1	2	lbs	If the total amount of Dilute 1 is used to make Dilute 2, available Dilute 2 =	4.000	lbs	Dilute 2 used to make Dilute 3, available Dilute 3 =		

4. Mixing Summary - Determine which option [Option 1 (full strength), Option 2 (Dilute 1), Option 3 (Dilute 2), or Option 4 (Dilute 3)] is most practical to blend with the final non-medicated feed for daily feeding.

Mixing Summary									
	Calculated Concentration Batch	0	mg/lb						
	Quantity that would be ne		Ib batch	ı mix					
	Mixed Feed Options	Non- Fe	Medicate ed Lbs.	d	Total Feed Lbs.				
Option 1	Fully Concentrated Medicated Feed Article	0.000	+	0		-			
Option 2	Dilute 1 Medicated Feed Mix	0.000	+	0		=			
Option 3	Dilute 2 Medicated Feed Mix	0.000	+	0		=			
Option 4	Dilute 3 Medicated Feed Mix	0.000	+	0		=			
*Choose the number of dilutions for a final mix option that is most accurate and practical.									

5. Unit Converter - convert medicated feed options from pounds to either ounces or grams for weighing and mixing.

Example 1.

The objective is to provide **200 mg per animal** of a medicated feed additive to **60** stocker steers weighing **550 pounds** that will be supplemented at **5.5 lbs supplement per calf**, daily. A total of 2,000 lbs feed will be mixed per feed batch.

The label of the medicated feed purchased indicates **90 grams (g)/lb** active ingredient.

Using a series of 3 dilutions at a 1:2 dilution rate, dilution 1 would have a concentration of 30 g/lb, dilution 2, 10 g/lb, and dilution 3, 3.333 g/lb.

The calculated concentration of medicated feed per batch is 36.364 mg/lb for each of the 4 blending options. Multiplying the medicated feed 36.364 mg/lb x 5.5 lb/animal daily feeding rate equals the target 200 mg/animal.

Blending option 1 would require 0.808 lb of the concentrated medicated feed added to 1999.192 lb nonmedicated feed to get to the final 2000 lb batch size.

Blending option 4 would require 21.821 lb of the 3rd Dilution Level added to 1978.179 lb feed to get to the final 2000 lb batch size.

If starting with 1 lb of concentrated medicated feed in Dilute 1 and using a 1:2 dilution ratio for Dilute 1, Dilute 2, and Dilute 3, the final Dilute 3 would yield 27 lbs of a 3.33 g/lb medicated feed mix. If Dilute 3 is used to produce Option 4 feed mixing, there would be 5.179 lb Dilute 3 remaining after mixing 1 2,000 lb feed batch.

Dilute 1		Dilute 2		Dilute 3						
Amount of concentrated medicated feed	1	lb	Amount of DILUTE 1 Medicated Feed		E 1 Medicated 1 lb		Amount of DII Feed	UTE 2 Medicated	1	lb
Amount of non-medicated feed supplement for dilution	2	lb	Amount of non-r supplement for a	nedicated feed dilution	2	lb	Amount of no supplement fo Concentration Medicated Fee	n-medicated feed or dilution a of Final Dilute 3 ed	2 3.333	lb g/lb
Concentration of Final Dilute 1 Medicated Feed	30.000	g/lb	Concentration o Medicated Feed	f Final Dilute 2	10.000	g/lb	If the total am used to make total amount of	ount of Dilute 1 is Dilute 2 and the of Dilute 2 used to	27.000	lbs
Total Amount Dilute 1	3	lbs	If the total amou used to make Di Dilute 2 =	nt of Dilute 1 is lute 2, available	9.000	lbs	make Dilute 3, available Dilute 3 =			
Mixing Summary Calculated Concentration of Medicated Feed Per 38.384 mg/lb Batch										
		Quantity that would be needed per 2000 lb l					ch mix			
	Mixed	l Feed Op	otions M	edicated Feed Lbs.	,	Non-Medicat Feed Lbs.	ed	Total Feed Lbs.		
Option 1	Fully Concentrat	ed Medica	ted Feed Article	0.808	+	1999.192	=	2000		
Option 2	Dilute 1 Medicated Feed Mix		2.424	+	1997.576	-	2000			
Option 3	Dilute 2 Medicated Feed Mix		7.273	+	1992.727	-	2000			
Option 4	Dilute 3 Medicated Feed Mix		21.821	+	1978.179	-	2000			
*Choose the number of dilutions for a final mix option that is most accurate and practical.										

Example 2.

The objective is to provide **0.5 mg/lb weight** of a medicated feed additive to **50 cows** weighing **1,200 pounds** that will be supplemented at **1 lb per cow**, daily. A total of 50 lbs feed will be mixed per feed batch.

The label of the medicated feed purchased indicates **50 grams (g)/lb** active ingredient.

Using a series of 3 dilutions at a 1:1 dilution rate, dilution 1 would have a concentration of 25 g/lb, dilution 2, 12.5 g/lb, and dilution 3, 6.25 g/lb.

The calculated concentration of medicated feed per batch is 600 mg/lb for each of the 4 blending options. Multiplying the medicated feed 600 mg/lb x 1 lb/animal daily feeding rate equals the target 600 mg/animal (1,200 lb weight x 0.5 mg/lb weight).

Blending option 1 would require 0.6 lb of the concentrated medicated feed added to 49.4 lb nonmedicated feed to get to the final 50 lb batch size.

Blending option 4 would require 4.8 lb of the 3rd Dilution Level added to 45.2 lb feed to get to the final 50 lb batch size.

Dilute 1	Dilute 2				Dilute 3							
Amount of concentrated medicated feed	1	lb	Amount of DILUT Feed	E 1 Medicated	1	lb	Amount of DIL Feed Amount of no	Amount of DILUTE 2 Medicated Feed Amount of non-medicated feed		Amount of DILUTE 2 Medicated		lb Ib
Amount of non-medicated feed supplement for dilution	1	lb	Amount of non-n supplement for d	nedicated feed lilution	1	lb	Concentration Medicated Fee	of Final Dilute 3	6.250	g/lb		
Concentration of Final Dilute 1 Medicated Feed	25.000	g/lb	Concentration of Medicated Feed	Final Dilute 2	12.500	g/lb	If the total amount of Dilute 1 used to make Dilute 2 and th total amount of Dilute 2 used make Dilute 3, available Dilut		8.000 3	lbs		
Total Amount Dilute 1	2	lbs	If the total amoun used to make Dil Dilute 2 =	nt of Dilute 1 is ute 2, available	4.000	lbs	=					
Mixing Summary												
		Calcu Batch	lated Concentration of	Medicated Feed	d Per 600.000) mg/lb						
	Quantity that would be needed pe				50	lb bat	ch mix					
	Mixed	Feed O	otions Me	dicated Feed Lbs.	N	Ion-Medicat Feed Lbs.	ed	Total Feed Lbs.				
Option 1	Fully Concentrat	ed Medica	ted Feed Article	0.600	+	49.4	=	50				
Option 2	Dilute 1 Medicated Feed Mix		1.200	+	48.8	=	50					
Option 3	Dilute 2 Medicated Feed Mix		2.400	+	47.6	-	50					
Option 4	Dilute 3 Medicated Feed Mix		4.800	+	45.2	=	50					
*Choose the number of dilutions for a final mix option that is most accurate and practical.												

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