

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

The medicated feed additive and serial dilutor calculator is an educational tool to demonstrate calculating the quantity of a medicated feed additive for a feed group and applying a one, two, or three step dilution to achieve a more manageable feed mixing and delivery rate.

Step 1. Enter the target medicated feed intake and rate (radio button) as either mg/animal or mg/lb weight.

Step 2. Enter the number of animals in the feeding group.

Step 3. Enter the average weight of the animals in the feeding group.

Step 4. Enter the target daily supplemental feed rate per animal.

Step 5. Enter the mixed feed batch size in pounds. This value may be represented by different values. For example, this value may represent a one ton batch or this value can be modified until the number of days feeding per batch reaches a target such as figuring the medicated feed mix for one week of feeding.

Step 6. Enter the concentration of the medicated feed additive as stated on the label.

Step 7. 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 diluted 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. An error message will appear if this occurs. For example, if the total amount of Final Dilute 1 is 2 pounds and 3 pounds is entered for Amount of Dilute 1 in the Dilute 2 section, an error will appear.

Step 8. Use the mixing summary to 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 or top dress with the final non-medicated feed for daily feeding.

Step 9. Use the unit converter to convert medicated feed options from pounds to either ounces or grams for weighing and mixing.

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

The first output below illustrates the results when Target batch mix size = 330 lb and Number of days feeding per batch = 1 days. Dilution set for Dilute1, 2 and 3 was 1lb : 2lb. Total amounts of Dilute 1, 2 and 3 available would be 3, 9 and 27 lbs. Based on the results, a three step dilution may be most practical for the producer that does not have a larger mixer and plans to top-dress the medicated feed mix onto the remaining daily ration. The mixing summary indicates that 3.6 lbs daily of dilute 3 should be fed to deliver the correct amount of medicated feed. Also note that 3.6 lbs/d of dilute 3 will provide 7.5 days of medicated feeding ($27 \div 3.6 = 7.5$)

Medicated Feed Additive and Serial Dilutor Calculator

The purpose of this calculator is to dilute a concentrated form of a medicated feed for increased accuracy of mixing

[Link to FDA Approved Animal Drugs Database Search](#)

Select from drop-down menu

Target medicated feed intake 200 mg/animal

HERD AND FEED INPUTS

Number of animals in the feeding group	60	animals
Average size of animals in the feeding group	550	lbs/animal
Target daily medicated feed intake	200	mg/animal
Dose per unit of weight	0.364	mg/lb weight
Target daily supplemental feed rate	5.5	lb/animal
Total daily supplement feed for the group	330	lb/d
Target batch mix size	330	lb
Number of days feeding per batch	1.0	days
Concentration of Medicated Feed Article	90	g/lb

DILUTE 1

Amount of concentrated medicated feed	1	lb
Amount of non-medicated feed supplement for dilution	2	lb
Concentration of Final Dilute 1 Medicated Feed	30	g/lb

DILUTE 2

Amount of DILUTE 1 Medicated Feed	1	lb
Amount of non-medicated feed supplement for dilution	2	lb
Concentration of Final Dilute 2 Medicated Feed	10	g/lb

DILUTE 3

Amount of DILUTE 2 Medicated Feed	1	lb
Amount of non-medicated feed supplement for dilution	2	lb
Concentration of Final Dilute 3 Medicated Feed	3.333333	g/lb

Required Entry Cells

Calculated Cells

Calculated Mixing Results

Total Amount

Dilute 1 lbs

If the total amount of Dilute 1 is used to make Dilute 2, available Dilute 2 = lbs

If the total amount of Dilute 1 is used to make Dilute 2 and the total amount of Dilute 2 used to make Dilute 3, available Dilute 3 = lbs

MIXING SUMMARY

Calculated concentration of medicated feed per batch 36.36364 mg/lb

Quantity that would be needed per 330 lb batch mix

	medicated feed lbs		medicated feed lbs		total feed lbs
Option 1 Fully concentrated medicated feed article	0.13	+	329.87	=	330
Option 2 Dilute 1 medicated feed mix	0.40	+	329.60	=	330
Option 3 Dilute 2 medicated feed mix	1.20	+	328.80	=	330
Option 4 Dilute 3 medicated feed mix	3.60	+	326.40	=	330


Choose the number of dilutions for a final mix option that is most accurate and practical.



The second output below illustrates the results when Target batch mix size = 6000 lb or 3 tons. This is enough feed for 18 days. A livestock producer with a large commercial grinder/mixer or mixer wagon may find that using the full concentrated medicated feed or the first dilution rate would be sufficient.

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Select from drop-down menu

Target medicated feed intake 200 mg/animal

HERD AND FEED INPUTS

Number of animals in the feeding group	60	animals
Average size of animals in the feeding group	550	lbs/animal
Target daily medicated feed intake	200	mg/animal
Dose per unit of weight	0.364	mg/lb weight
Target daily supplemental feed rate	5.5	lb/animal
Total daily supplement feed for the group	330	lb/d
Target batch mix size	6000	lb
Number of days feeding per batch	18.2	days
Concentration of Medicated Feed Article	90	g/lb

DILUTE 1

Amount of concentrated medicated feed	1	lb
Amount of non-medicated feed supplement for dilution	2	lb
Concentration of Final Dilute 1 Medicated Feed	30	g/lb

DILUTE 2

Amount of DILUTE 1 Medicated Feed	1	lb
Amount of non-medicated feed supplement for dilution	2	lb
Concentration of Final Dilute 2 Medicated Feed	10	g/lb

DILUTE 3

Amount of DILUTE 2 Medicated Feed	1	lb
Amount of non-medicated feed supplement for dilution	2	lb
Concentration of Final Dilute 3 Medicated Feed	3.333333	g/lb

Total Amount

Dilute 1 3 lbs

If the total amount of Dilute 1 is used to make Dilute 2, available Dilute 2 = 9 lbs

If the total amount of Dilute 1 is used to make Dilute 2 and the total amount of Dilute 2 used to make Dilute 3, available Dilute 3 = 27 lbs

MIXING SUMMARY

Calculated concentration of medicated feed per batch 36.36364 mg/lb

Quantity that would be needed per 6000 lb batch mix

Mixed Feed Options	medicated feed lbs	+	medicated feed lbs	=	total feed lbs
Option 1 Fully concentrated medicated feed article	2.42	+	5997.58	=	6000
Option 2 Dilute 1 medicated feed mix	7.27	+	5992.73	=	6000
Option 3 Dilute 2 medicated feed mix	21.82	+	5978.18	=	6000
Option 4 Dilute 3 medicated feed mix	65.45	+	5934.55	=	6000

Choose the number of dilutions for a final mix option that is most accurate and practical.