California Commercial Feed Label Review Checklist

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The California Department of Food and Agriculture's (CDFA) Safe Animal Feed Education Program (SAFE) guidance materials are provided for educational purposes only and do not guarantee adequacy of procedures or compliance with regulations.

California Commercial Feed Label Review Checklist

Basic Label Review

Example labels and further guidance are provided in the Commercial Feed Label Guide: https://www.cdfa.ca.gov/is/ffldrs/pdfs/California_Commercial_Feed_Labeling_Guide.pdf.

1. Is the feed label complete?

The label contains each of the following basic components:

- ○ Product name, brand name, or trademark.
- ○ Name and principal address of the manufacturer.
- ○ Net weight or volume unless accompanied by a weight certificate.
- ○ Guaranteed analysis.
- ○ Complete list of ingredients using the recognized official name.
- ○ Adequate directions for the safe use of the feed.
- ○ Applicable warnings and caution statements.

2. Does the packaging, advertising or product label contain any drug claims?

Food and Agricultural Code (FAC) Section 14928. "Drug" means any substance which is intended, or represented, for use in the diagnosis, cure, mitigation, treatment, or prevention of any disease in any animal, and any other substance, except feed, which is intended to affect the structure or any function of the body of any animal.

- ○ Feeds medicated with an U.S. Food and Drug Administration (FDA) approved new animal drug only have claims consistent with the Code of Federal Regulations (CFR) approval and indication of use for that drug and species of animal.
- ○ Any other claims may need to be removed from the label, or the product may need to be reviewed by the Livestock Drug Program by emailing shelly.king@cdfa.ca.gov.

3. Does the guaranteed analysis correctly display all required components?

- ○ Guarantees based on as-fed/as-is values, NOT 100% dry matter.
- ○ Minimum percent of crude protein.
- ○ Minimum percent of crude fat.
- ○ Maximum percent of crude fiber.
- ○ Maximum percent of ash.

- ○ Guarantees for the minimum and maximum percentage calcium, minimum percentage phosphorus, and maximum percentage of sodium (or salt) may be stated in lieu of the ash guarantee.
- ○ If ash is over 9%, the calcium, phosphorous and sodium/salt, as stated above, must be guaranteed if ingredients which provide the nutrients are added.

- ○ Maximum percentage of moisture when moisture exceeds 15.0%.
- ○ Maximum percentage of sodium (or salt) if sodium is over 0.5%.
- ○ Numerical value for any special quality claimed on the label, including vitamin potency, amino acid content, or mineral content.

4. Are all ingredients and additives approved for use in feed?

- ○ California Code of Regulations, Title 3 (3 CCR), Article 14 provides recognized official names and definitions of feed ingredients. View 3 CCR Article 14 here: https://www.cdfa.ca.gov/is/docs/FeedLaw_Regs.pdf.

If you are unable to determine all ingredients are approved for use in feed, contact SAFE at safe@cdfa.ca.gov with inquiries.

5. Does the ingredient list correctly display all required components?

Ingredient list is not required for a single ingredient using the recognized official name.

- ○ The "recognized official name" of each ingredient is used.
- ○ Ingredients are listed in order of decreasing amounts.
- ○ Trademarked products, if listed, are followed by parenthesis with the ingredients in the product listed in decreasing amounts present.
- ○ There is NO use of misleading and indefinite statements concerning ingredients and value of ingredients of the feed.
  - Included within this prohibition is the use of such terms as "better", "high", "increased", "greater", "low", "decreased", "less".
- ○ The ingredient list does NOT contain any collective terms, except for:
  - "Grains", including only those specified in 3 CCR Section 2778.
  - "Roughage products" only in labeling medicated, mineral and vitamin premixes if the labeled recommended use level of the premix in the total ration is specified to be one percent or less of the total ration. Roughage Products may include those specified in 3 CCR Section 2778.
- ○ Maximum percentage of inert materials contained in a formula feed (such as bentonite), must be guaranteed if they singly or collectively make up more than 1.0%.

- ○ Maximum percentage of low-nutrition ingredients in a formula feed (such as rice hulls), must be guaranteed if they singly or collectively make up more than 1.0%.

6. Are the directions for use adequate?

- ○ The directions for use of formula feed provide a true intended feeding rate of the feed, such as;
  - Feed as sole ration (complete feed).
  - Feed “x” pounds per head per day.
  - Feed “x” pounds per pound of bodyweight per day.
  - Offer as free choice. Animals should consume “x” (pounds, ounces, grams) daily.
- ○ If the feed is intended to be further mixed or diluted prior to feeding, mixing directions are provided.
- ○ Directions are capable of being followed.
- ○ Directions are likely to be followed in usual feeding practices.
- ○ Single ingredients may not need specific directions for use.

7. Is this feed label for a single ingredient product (i.e. almond hulls)?

- ○ Single ingredients may have additional specifications for the guaranteed analysis. Reference 3 CCR Article 14 for label requirements within each ingredient definition.
- ○ If the single ingredient does not provide any protein, fat, and/or fiber, the guarantees may be replaced with guarantees pertinent to the ingredient. For example, a mineral ingredient should guarantee the mineral content rather than crude protein, crude fat, and crude fiber.

8. Is the feed intended primarily for special purposes (i.e. drug or vitamin content)?

- ○ The guarantees may be replaced with guarantees pertinent to special purpose commercial feeds. For example, a vitamin/mineral premix which is not intended to provide any protein, fat, or fiber should be guaranteed for vitamin and mineral content rather than crude protein, crude fat, and crude fiber.

9. Is the feed a liquid feed (molasses)?

- ○ Label shall include the minimum percentage total sugar expressed as invert and maximum percentage of moisture or minimum percentage of dry matter.
- ○ Guarantees for crude fat or crude fiber are not required in liquid feed when there is less than 1% of either constituent.

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Label Review of Formula Feeds Containing Regulated Substances

The remaining items in this checklist are applicable when feed contains certain feed additives or drugs which require additional label statements.

10. Does the feed contain more than 0.3 ppm added selenium?

- ○ Selenium minimum and maximum ppm is guaranteed.
- ○ The statement "Caution: Follow label directions: Feeding added selenium at levels in excess of 0.3 ppm in the total diet is prohibited."
    - Premixes may state "Caution: Follow label directions. The addition to feed of higher levels of this premix containing selenium is not permitted."
- ○ Feeding and/or mixing instructions regarding selenium are provided.
    - ○ The instructions provided are accurate to result in a total ration which does not exceed 0.3 ppm in the total daily ration and does not exceed maximum permitted use levels per species **(See Example 1, Table 2).**

11. Does the feed contain non-protein nitrogen (NPN)?

- ○ The maximum percent of equivalent crude protein from non-protein nitrogen appears immediately below the guarantee for the minimum percent of crude protein. **(See Example 2 for calculation of equivalent crude protein).**
- ○ If the commercial feed, including liquid feed, contains more than 8.75 percent equivalent crude protein from all forms of non-protein nitrogen, or if the equivalent crude protein from all forms of non-protein nitrogen exceeds one-third of the total crude protein, the label shall bear this warning statement followed by feeding directions for the safe use of the feed.
    - ○ **WARNING EXCESSIVE CONSUMPTION MAY RESULT IN ADVERSE TOXIC REACTION USE ONLY AS DIRECTED**
    - ○ The directions shall include the following: "Consumption should be carefully controlled until animals become adjusted to the feed. Additional care should be exercised with starved, stressed, or debilitated animals."
    - ○ Recommended daily intake levels shall be given, as well as the statement that all manufacturer's directions for use must be followed carefully.

12. Is it medicated feed?

Additional guidance and example labels are provided in the SAFE Medicated Feed Label Guide: https://www.cdfa.ca.gov/is/ffldrs/pdfs/SAFE_Medicated_Feed_Label_Guidance.pdf.

- ○ The term "MEDICATED" is prominently displayed immediately above or below

the product name.

- ○ The name and quantity of each drug is guaranteed.
- ○ Lot number for feed sold without a weight certificate.
- ○ The indication of use for each drug, specific to animal species and production class stated on the label, matches the FDA Code of Federal Regulations (CFR) approved dosage. View FDA new animal drug approvals here: https://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfcfr/CFRSearch.cfm?CFRPart=558
  - ○ The concentration of drug in the feed (g/ton) is within the allowed range specified in the CFR for the stated indication of use (if applicable).
  - ○ The final dosage of drug (i.e. mg per head per day) is within the allowed range specified in the CFR for the stated indication of use (if applicable).
- ○ The feeding directions are adequate **(See Example 3 for medicated feed calculations):**
  - ○ Directions provide a feeding and/or mixing rate specific to the labeled feed. (It is NOT adequate to solely state the CFR approval of the drug).
  - ○ The feeding and/or mixing rate results in the approved drug dosage for the species and class of animal and indication of use stated on the label.
  - ○ The feeding rate is realistic, capable of being followed, and likely to be followed in usual feeding practices.
- ○ All relevant warnings, caution statements, limitations of use, and withdrawal time (if applicable) as indicated in the CFR.
- ○ If the feed contains a veterinary feed directive (VFD) drug, the label includes the statement: “Federal law restricts medicated feed containing this veterinary feed directive (VFD) drug to use by or on the order of a licensed veterinarian.”

13. Does the feed contain an insect growth regulator (feed through pesticide), such as diflubenzuron?

- ○ Use, labeling, and feeding rate is in accordance with the original product label that is registered with the U.S. Environmental Protection Agency (EPA). Learn more: FDA Summary of Feed Through Pesticide. (**See Example 4 for feed through pesticide example calculations).**

14. Does the feed contain a combination of drugs, feed through pesticides, selenium, and/or NPN?

- ○ The label provides feeding directions which are consistent with the approved and safe feeding levels of every component of the feed simultaneously. (**See Example 4).**
- ○ The label contains all required caution and warning statements.

Example Calculations for Feed Additives and Drugs

Table 1. Common Unit Conversion Factors	
grams (g) to milligrams(mg)	1 g = 1,000 milligrams (move decimal 3 places to the right or multiply by 1000)
ounces (oz) to pounds (lbs)	1 oz = 0.0625 lbs (divide by 16)
percent (%) to parts per million (PPM)	1% = 10,000 ppm (move decimal to the right 4 places or multiply by 10,000)
PPM to %	1 ppm = 0.001 % (divide by 10,000)
PPM to mg/lb	1 ppm = 0.45 mg/lb (divide by 2.2)
mg/lb to PPM	1 mg/lb = 2.2 ppm (multiply by 2.2)
PPM to mg/kg	1 ppm = 1 mg/kg
PPM to parts per billion (PPB)	1 ppm = 1000 ppb (move decimal place right 3 places or multiply by 1,000)
g/ton to mg/lb	1 g/ton = 0.5 mg/lb (divide by 2)
% to mg/lb	1% = 4,545.5 mg/lb (multiply by 4545.5)
mg/kg to mg/lb	1 mg/kg = 0.4545 mg/lb (divide by 2.2)

Example 1: Selenium Calculations

Directions for use and caution statements regarding selenium must result in a feeding rate that will not exceed the maximum level of selenium daily.

Table 2. Summary of maximum feeding level of selenium per species.

	Chicken, Turkey, Duck, Swine, Dairy Cattle	Beef Cattle, Bison, Horse	Sheep, Goat, Llama, Alpaca
Concentration in total diet or complete feed	0.3 ppm	0.3 ppm	0.3 ppm
Feeding rate per head per day	N/A	3 milligrams	0.7 milligrams
Concentration in free-choice feed	N/A	120 ppm	90 ppm

Example A: Selenium Calculations as Percent of Total Daily Ration

Selenium Minimum…….... 1 ppm
Selenium Maximum……...1.2 ppm

Feeding directions: Do not feed as more that 25% of total daily ration to not exceed 0.3 ppm selenium in the total daily ration.

Equation:

Maximum Se ppm x % of total daily ration = Total Se ppm in daily ration

1.2 ppm x 0.25 = 0.3 ppm

The feeding directions are correct because they result in a total daily ration which does not exceed 0.3 ppm selenium.

Example B: Selenium Calculations as Pounds per Ton

Selenium Minimum……53 ppm
Selenium Maximum……..…56 ppm

Mixing directions: Blend this premix at a rate not to exceed 10 lbs/ ton to provide 0.3 ppm selenium in the total daily ration.

Equation:

(Pounds premix/ton x Maximum Se ppm) ÷ 2,000 =Total Se ppm in daily ration

(10 lbs x 56 ppm) ÷2,000 = 0.28 ppm

The feeding directions are correct because they result in a total daily ration which does not exceed 0.3 ppm selenium.

Example C: Selenium Calculations as Pounds per Head per Day
Selenium Minimum…….0.6 ppm
Selenium Maximum…….0.7 ppm

Feeding directions: Feed to sheep at a rate not to exceed 2 lbs per head day to provide no more than 0.7 mg/hd/day.

Equation:
lbs of feed x (max Se ppm ÷ 2.2) = mg Se per head per day

2 lbs x (0.7 ppm ÷ 2.2) = 0.7 mg per head per day

The feeding directions are correct because they result in a feeding rate which does not exceed 0.7 mg per head per day for sheep.

Example D: Selenium Calculations as Ounces per Head per Day

Selenium Minimum…….26 ppm
Selenium Maximum…….28 ppm

Feeding directions: Feed to beef cattle at a rate of 3.7 oz per head per day, providing 2.9 mg selenium per head per day.

Equation:
(oz of feed ÷ 16 oz/lb) x (max Se ppm ÷ 2.2) = mg Se per head per day

(3.7 ÷ 16 oz/lb) x (28 ÷ 2.2) = 2.9 mg per head per day

The feeding directions are correct because they result in a total daily ration which does not exceed 3 mg per head per day for beef cattle.

Example 2: Equivalent crude protein from non-protein nitrogen calculations.

Equivalent crude protein is calculated by multiplying the percentage of nitrogen by 6.25. For example, urea is 46% nitrogen (N): 46 x 6.25 = 287.5. Pure urea is 287.5% equivalent crude protein.

Calculate the total equivalent crude protein from NPN in a formula feed with the following equation:

(pounds NPN ingredient added per ton ÷ 2,000 lbs) x (% N of NPN ingredient) x 6.25

Example of formula feed with 400 lbs of urea (46% N) per ton:

(400 lbs urea/ton ÷ 2,000) x 46 x 6.25 = 57.5% equivalent crude protein from NPN.

Example 3: Medicated feed calculations.

These equations use a known drug concentration of the feed and approved dosage of the drug to determine the correct feeding directions. When checking a feed label feeding directions for accuracy, the answers from these equations should match what is stated on the label. The Association of American Feed Control Officials (AAFCO) provides a medicated feed calculator: https://www.aafco.org/Regulatory/Medicated-Feed-Calculators.

Directions to provide correct milligrams of drug per animal

Determine how many pounds of medicated feed are needed to provide the approved dosage when approved dosage is in milligrams per head per day (mg/hd/day) or milligrams per pound of bodyweight (BW) or milligrams per 100 lbs BW, etc.

- Step 1: if not already in mg/lb, convert feed drug concentration into mg/lb.
- Step 2: approved dosage ÷ concentration of drug in feed (Figure 1).

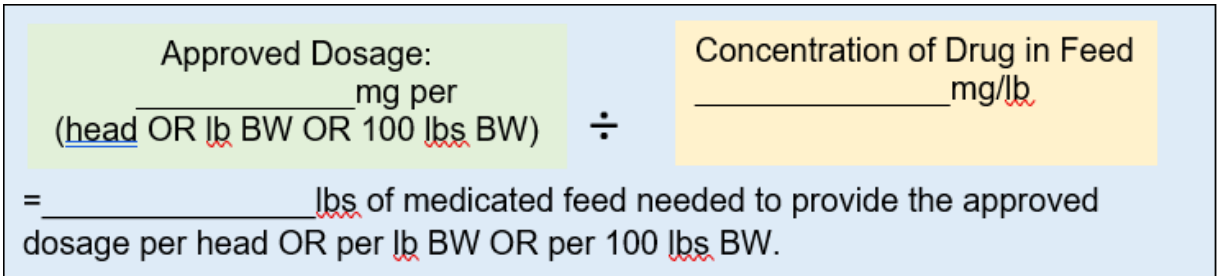


Figure 1. Worksheet for calculations to determine lbs of medicated feed needed to provide the approved dosage in mg per lb.

Example A

Decoquinate……..…….44 g/ton

FDA approved dosage for this example: 22.7 milligrams per 100 lbs. bodyweight.

Step 1: 44 g/ton ÷ 2 = 22 mg/lb. (concentration decoquinate in feed)

Step 2: 22.7 mg/ 100 lbs. BW ÷ 22 mg/lb. = 1.03 lb.

Feeding directions may state: “feed 1 pound per 100 lbs. of bodyweight per head per day to provide 22.7 mg per 100 lbs. of bodyweight”.

Feeding directions may also be placed in a table with weights of animals:

Calf bodyweight (lbs.)	Feeding rate (lbs. per head per day)
100	1
150	1.5
200	2

Example B

Monensin…….100 g/ton

FDA approved dosage for this example: 0.14 to 1.0 mg/lb. of bodyweight up to 200 mg/head/day.

Step 1: 100 g/ton ÷ 2 = 50 mg/lb. (concentration monensin in feed)

Step 2 (a) lowest dose: 0.14 mg/lb. ÷ 50 mg/lb. = 0.0028 lb.

Step 2 (b) highest dose: 1.0 mg/lb. ÷ 50 mg/lb. = 0.02 lb.

Step 2 (c) determine how much feed would meet the maximum approved level of 200 mg/hd./day: 200 mg ÷ 50 mg/lb. = 4 lbs. of feed maximum

Feeding directions may state "feed between 0.003 to 0.02 pound of feed per pound of bodyweight per day up to a maximum 4 lbs. per head per day to not exceed 200 mg per head per day". However, it is acceptable to convert the dosage into unit of higher lbs. of bodyweight to make the feeding directions more practical, such as 50 lbs. of BW:

0.0028 x 50 lbs. of BW = 0.14 lbs./ 50 lbs. BW

0.02 x 50 lbs. of BW = 1.0 lbs./ 50 lbs. BW

Now, the feeding directions may state "feed between 0.14 to 1 lb. per 50 lbs. of bodyweight up to a maximum of 4 lbs. per head per day to not exceed 200 mg per head per day".

Feeding directions may also be placed in a table with weights of the intended animals:

Calf Bodyweight (lbs)	Minimum lbs per day	Maximum lbs per day
50	0.14	1
100	0.28	2
150	0.42	3
200	0.56	4
250	0.70	4

Directions to provide correct mixing directions per ton of feed

Determine how many pounds of medicated feed to add per ton of mixed feed or total mixed ration (TMR) to reach a certain g/ton of medication in the mixed feed.

Step 1: Convert feed drug concentration (stated on the label) into g/lb:

- g/ton ÷ 2,000 = g/lb
- mg/lb ÷ 1,000 = g/lb

Step 2: Desired Feed Concentration (g/ton) ÷ Feed Concentration (g/lb) **(Figure 2).**

Step 3 (if applicable): Convert values based on varying levels of moisture (dry matter) in a TMR.

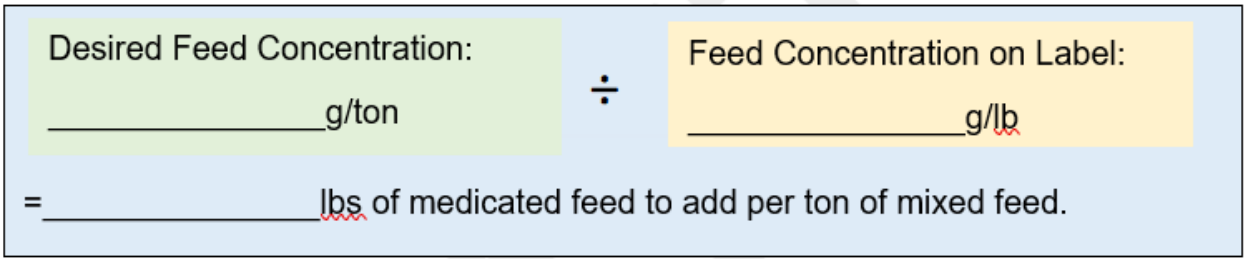


Figure 2. Worksheet for calculations to determine lbs of medicated feed to add per ton to reach a desired drug concentration.

Example A

Type B Medicated Feed
Lasalocid……..1000 g/ton
FDA approved Type C concentration for this example: 25-30 g/ton to provide not less than 250 mg nor more than 360 mg/head/day.

Step 1: 1000 g/ton ÷ 2,000 = 0.50 g/lb

Step 2 (a) lowest concentration: 25 g/ton ÷ 0.50 g/lb = 50 lbs

Step 2 (b) highest concentration: 30 g/ton ÷ 0.50 g/lb = 60 lbs

Additional step: How much of this feed would be needed to stay within the 250-360 mg/head/day requirement of the approval? It is important to check this step to ensure the drug concentration is appropriate for the intended animal.

First, convert the g/ton of both the highest and lowest Type C medicated feed options into mg/lb:

25 g/ton ÷ 2 = 12.5 mg/lb
30 g/ton ÷ 2 = 15 mg/lb

Now, check both the low and high approved dosage at both drug concentrations:

250 mg per head per day ÷ 15 mg/lb = 16.6 lbs Type C feed per head per day

250 mg per head per day ÷ 12.5 mg/lb = 20 lbs Type C feed per head per day

360 mg per head per day ÷ 15 mg/lb = 24 lbs Type C feed per head per day

360 mg per head per day ÷ 12.5 mg/lb = 28.8 lbs Type C feed per head per day

Mixing directions may state: “Thoroughly mix lasalocid Type B medicated feed into one ton of mixed feed at a rate of 50 lbs (1 bag) to 60 lbs to provide a Type C medicated feed that is 25-30 g/ton. In order to provide not less than 250 nor more than 360 mg/hd/day a Type C medicated feed of 25 g/ton must be fed at 20 to 28.8 lbs per head

per day or a Type C medicated feed of 30 g/ton must be fed at 16.6 to 24 lbs per head per day."

Example B
Type B Medicated Feed
Monensin……..500 g/ton

FDA approved Type C concentration for this example: Feed a TMR containing 11-22 g/ton monensin on a dry matter (DM) basis.

The feeding directions for this example may include a table with various drug concentrations and TMR DM%.

Amount (lbs) or Type B medicated feed to add per ton of TMR:

Amount of monensin in Type B Medicated Feed	Dry Matter (%) of TMR	Monensin concentration on DM basis		
		11 g/ton	15 g/ton	22 g/ton
500 g/ton	55%	24.2	33	48.4
	60%	26.4	36	52.8
	65%	28.6	39	57.2

Use the following equation to check the values:

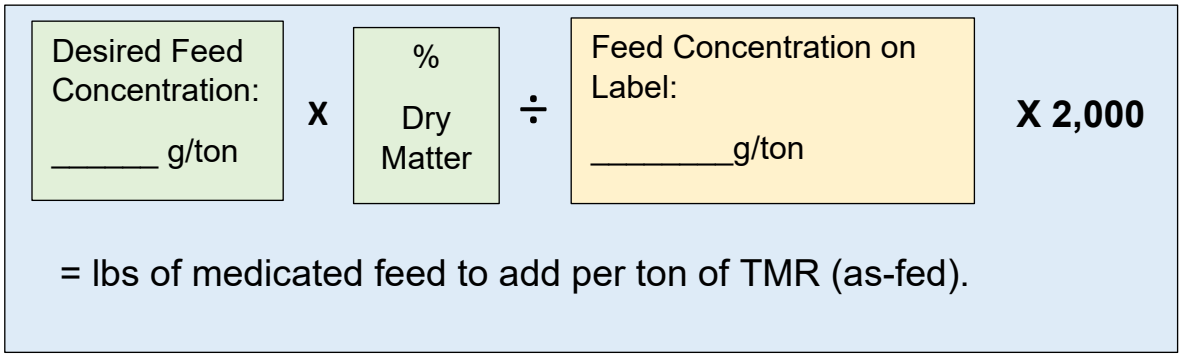


Figure 3. Worksheet to check mixing direction for various drug concentrations and dry matter levels of a TMR.

Example:

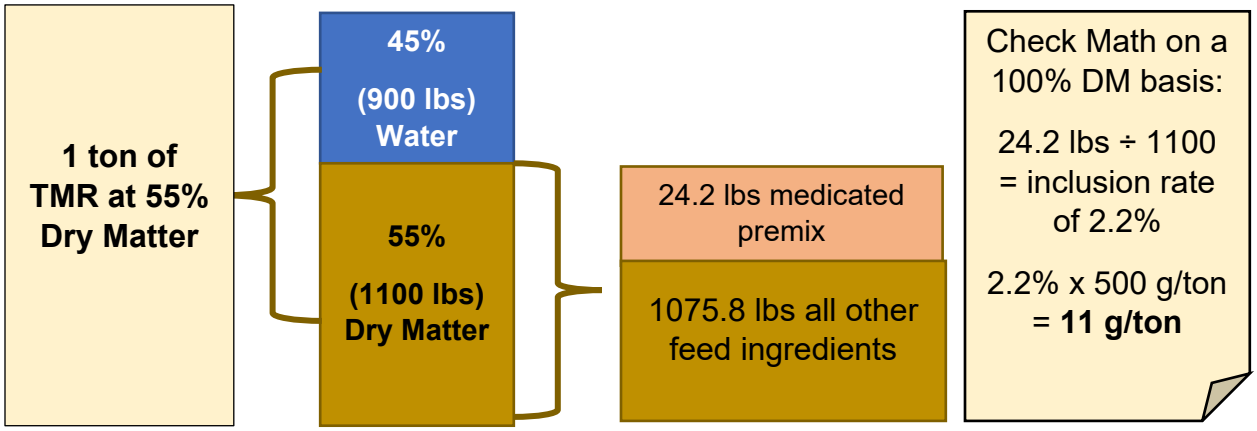
11 g/ton x 0.55 (55% DM) ÷ 500 g/ton x 2,000 = 24.2 lbs feed per ton of TMR.

22 g/ton x 0.65 (65% DM) ÷ 500 g/ton x 2,000 = 57.2 lbs feed per ton of TMR.

After spot checking a few values, this table is providing accurate mixing directions.

What is Dry Matter?
Dry matter is all components of the feed except water, therefore mathematically percentage of dry matter (% DM) = 100 - % moisture.

Rations and drug concentrations are either formulated on a "dry-matter basis" (100% DM), or an "as-fed basis" (moisture level actually fed). Drug approvals are typically on a 100% or 90% dry matter basis. When feeding wet ingredients such as silage the DM% of the TMR may be as low as 50%. Therefore, in order to provide the correct and approved level of drug, mixing directions should account for moisture. See the graphic below to help understand dry matter.



Tips for Dry Matter:

A. To convert from DM basis to As-fed Basis, multiply by % DM.

For example, 11 g/ton (the drug approval on an DM basis) x 55% DM = 6.05 g/ton on an as-fed basis. (This was the first part of the equation in Figure 3).

B. To convert from an As-fed basis to a DM basis, divide by % DM.

For example, if mixing directions state to add 24.2 lbs of premix per ton of TMR (as-fed basis). This provides 6.05 g/ton monensin (as-fed basis), divided by 55% = 11 g/ton monensin on a DM basis.

Example 4: Medicated, Feed Through Pesticide and Selenium Labels.

If a feed contains multiple animal drugs, insect growth regulator, and/or selenium (for example monensin, diflubenzuron and added selenium over 0.3 ppm) it MUST:

- Be formulated to provide a level of ALL components within the approved use level for the intended species and class of animal.
- Provide directions for use which mention all of the components and result in the approved use level for all components concurrently.

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Check these labels by cross-checking any feeding directions or caution statements on the label to ensure they are compliant with all use levels.

Example A

Assume this feed also contains 10 ppm selenium. It is not sufficient to have an appropriate selenium caution statement, unless the directions for monensin will also provide a feed compliant with selenium regulations.

Amount of monensin in Type B Medicated Feed	Dry Matter (%) of TMR	Monensin concentration on DM basis		
		11 g/ton	15 g/ton	22 g/ton
500 g/ton	55%	**24.2**	33	48.4
	60%	26.4	36	52.8
	65%	28.6	**39**	57.2

24.2 lbs ÷ 2,000 lbs ÷ 55% = 2.2% (Inclusion Rate) x 10 ppm = 0.22 ppm Selenium

39 ÷ 2,000 lbs ÷ 65%= 0.3 ppm selenium

48.4 ÷ 2,000 lbs ÷ 55 % = 0.44 ppm is over 0.3 ppm max allowed in TMR!

This formula will not allow the 22 g/ton inclusion rate and also be compliant with selenium regulations. The label should not have the 22 g/ton column.

Example B

R1200 MONENSIN PREMIX FOR DAIRY COWS WITH CLARIFY AND SELENIUM

For increased milk production efficiency (production of marketable solids-corrected milk per unit of feed intake).

As an insect growth regulator, which prevents the development of house, stable, face and horn flies in the manure of treated beef and dairy cattle.

MEDICATED

ACTIVE DRUG INGREDIENT: Monensin.....1200 gm/ton (600 mg/lb)

Diflubenzuron.....136 mg/lb

For component-fed herds:
Feed 0.5 pounds per 1500-pound cow per day to provide 300 mg of Monensin and 68 mg of diflubenzuron per head per day.
Feed 0.4 pounds per 1200-pound cow per day to provide 240 mg of Monensin and 54 mg of diflubenzuron per head per day.

The approval for diflubenzuron (feed-through fly control) for cattle over 200 lbs is 0.1 mg/kg of bodyweight, or 0.0454 mg/lb of bodyweight, or 4.54 mg per 100 lbs of bodyweight. It is recommended that the feed label state the weight of intended animal to ensure both monensin and fly control may be provided at an effective and safe level.

600 mg/lb monensin × 0.5 lb. = 300 mg/hd/day

136 mg/lb diflubenzuron × 0.5 lb. = 68 mg/hd/day

1,500 lbs ÷ 2.2 = 680 kg × 0.1 mg/kg BW = 68 mg

Yes, this feeding rate matches the approval for diflubenzuron and monensin.

Although the approval for monensin is 185 to 660 mg/hd/day for lactating dairy cattle, it is not possible to have feeding directions of that range which will also provide the proper level of fly control. These directions are within the approval for both monensin and diflubenzuron.

Example C:

HEIFER MINERAL

For increased rate of weight gain. Prevents the development of house flies, stable flies, face flies, and horn flies in the manure of treated cattle.

MEDICATED

ACTIVE DRUG INGREDIENT: Monensin (as Monensin Sodium)……360.5 mg/lb

Diflubenzuron……..90.8 mg/lb

Feeding Directions: Feed at the rate of not less than 50 nor more than 200 mg per head per day in not less than 1 lb. of feed. During the first 5 days of feeding, cattle should receive no more than 100 mg per day contained in not less than 1 lb. of feed. Feed a 400 lb heifer 0.2 pounds per head per day providing 72 mg of monensin, and a 600 lb heifer 0.3 pounds per head per day providing 108 mg monensin, up to a maximum of a 1000 lb heifer at 0.5 lbs of this feed providing 180 mg per head per day monensin. This feeding rate will also provide 0.1 mg/kg of bodyweight or 4.54 mg/100 pounds of bodyweight diflubenzuron for fly control.

Caution: Feeding added Selenium to ruminants at levels in excess of 0.3 ppm in the total diet is prohibited. This mineral feed contains 12 ppm Selenium, do not exceed 50 pounds per ton in the total diet to provide 0.3 ppm Selenium.

Check for the 400 lb heifer:

360.5 mg/lb monensin × 0.2 lb. = 72 mg/hd/day

90.8 mg/lb diflubenzuron × 0.2 lb. = 18 mg/hd/day

400 lbs ÷ 2.2 = 181 kg × 0.1 mg/kg BW = 18 mg

Yes, this feeding rate matches the approval for diflubenzuron and monensin.

12 ppm selenium ÷ 2.2 = 5.45 mg/lb x 0.2 lbs = 1 mg selenium per head per day.

Check for the 600 lb heifer:

360.5 mg/lb monensin × 0.3 lb. = 108 mg/hd/day

90.8 mg/lb diflubenzuron × 0.3 lb. = 27 mg/hd/day

600 lbs ÷ 2.2 = 272 kg × 0.1 mg/kg BW = 27 mg

Yes, this feeding rate matches the approval for diflubenzuron and monensin.

12 ppm selenium ÷ 2.2 = 5.45 mg/lb x 0.3 lbs = 1.6 mg selenium per head per day.

Check for the 1000 lb heifer:

360.5 mg/lb monensin × 0.5 lb. = 180 mg/hd/day

90.8 mg/lb diflubenzuron × 0.5 lb. = 45 mg/hd/day

1000 lbs ÷ 2.2 = 454 kg × 0.1 mg/kg BW = 45 mg

Yes, this feeding rate matches the approval for diflubenzuron and monensin.

12 ppm selenium ÷ 2.2 = 5.45 mg/lb x 0.5 lbs = 2.7 mg selenium per head per day.

These feeding directions provide a safe and acceptable level of monensin, diflubenzuron, and selenium at all three weights.