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DO THE MATH AND CALCULATE IMPROVED EQUINE NUTRITION

Reading a hay analysis or puzzling over the ingredients in feed or supplements can be a chore, yet when considering particular elements—selenium, for example—some minor math can make a major difference to your horse's health. You don't need a computer (and maybe not even a calculator)—just master the simple formulas below.

Let's start with ppm, which stands for "parts per million." To best understand it, consider the word, "percent." Percent refers to "parts per 100." For example, "5 parts per 100" (5 percent) would look like 5/100 (five one hundredths) or 0.05. For ppm, "5 parts per million" looks like 5/1,000,000 (five one millionths) or 0.000005.

But this is often impractical to use. The best way to think of ppm is as milligrams per kilogram (mg/kg) of feed (since a mg is one millionth of a kg). Therefore, when using mg/kg, you have to make sure you're dealing with kg of feed (instead of lbs) in order to make your calculations.

Consider this example: Let's say your hay contains 0.2 ppm (mg/kg) of selenium. How many mg of selenium does 10 lbs of hay contain?
- First, you need to convert the lbs to kg. Since there are 0.454 kg in one lb, make the conversion by multiplying lbs by 0.454. So, 10 lbs multiplied by 0.454 equals 4.54 kg (10 x 0.454 = 4.54).
- Now you're ready to calculate mg of selenium. Multiply 4.54 kg of hay by 0.2 ppm (or mg/kg) (4.54 x 0.2 = 0.91). That gives you 0.91 mg of selenium in your 10 lbs of hay.

Formulas to remember:
- Convert lbs to kg: lbs x 0.454 = kg
- Calculate to find mg: kg x ppm (or mg/kg) = mg

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