

# How To Read An Enzyme Label

Rainrock Nutritionals

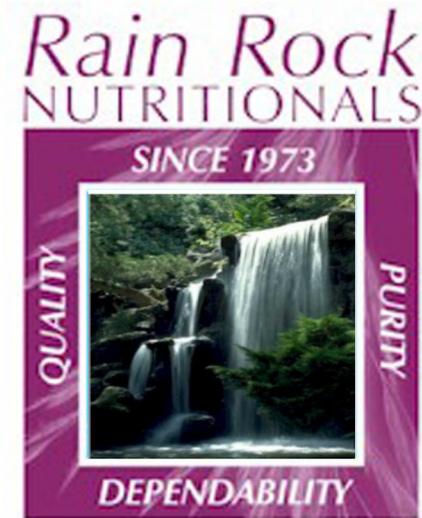
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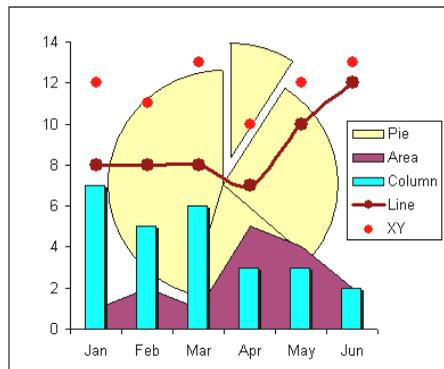
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There's a lot of confusion and hype regarding enzyme strength and potencies. Wild claims and huge numbers are being claimed to enhance the saleability of otherwise average or mediocre products. And often, like the chart at the left, numbers are used that aren't easily compared or only lead to confusion. So how can we cut through the fog to compare enzyme products?

Well the first and most important step is to find out what quantities of the product we are dealing with. To do that

we need to look at product labels. If you look at the ingredient panel on the top of the right side of a label you will see something that looks like the table below-

Supplement Facts	Supplement Facts
Serving Size: 1 tablet	Serving Size: 2 tablets
Servings per container: 200	Servings per container: 90

Look at the "serving size" on the label. The "serving size" tells the consumer that the ingredients listed on the label below this section are the amounts contained *per serving*. In other words, if you want to know how much of an ingredient is actually in a single tablet or capsule you need to take the amount of the ingredient shown on the label and divide by the number of capsules or tablets in the serving size.

For example, an important ingredient in enzyme formulations is  $\alpha$ -chymotrypsin. It might be listed in several ways so we'll choose a common way strengths are listed. One label we look at says there are 3 mg of  $\alpha$ -chymotrypsin per serving and we look at a second label and we see the same thing. But on closer examination we see that product "A" lists the serving size as 1 tablet while product "B" lists the serving size as 2 tablets. Because the serving size for product "A" is shown as 1 tablet we don't need to do anything. We already know the amount of  $\alpha$ -chymotrypsin per tablet is 3 mg. In product "B" we need to take the 3 mg of  $\alpha$ -chymotrypsin and divide by 2 for the number of tablets in the serving size. This means that product "B" contains only 1.5 mg of  $\alpha$ -chymotrypsin per tablet. By this exercise we see that product "B" is actually only half the potency of product "A."

## What About Ingredient Strength? Does That Make A Difference?

Remember that we wrote about how to read the *amounts* of ingredients per tablet or capsule. We illustrated the example of one product (product "A") which contained 3 mg of  $\alpha$ -chymotrypsin per tablet and another product (product "B") which only contained 1.5 mg of  $\alpha$ -chymotrypsin per tablet.

Now we need to confuse the issue slightly but only to clarify it later. The 3 mg and 1.5 mg amounts are not necessarily different in terms of the total enzyme activity. How can it be that 3 mg of an enzyme and 1.5 mg of an enzyme could be the same? Well, it's because the enzyme raw materials are available in different activity levels per mg. Total enzyme *activity* levels are how enzymes should be compared and they should be compared in equivalent *units*. We will use an equivalent generic unit in the example below. But be aware that there are many, many ways of measuring enzyme activity and some of them don't compare very well, much like the graphs at the left side of the article. More on this in a later part of the series.

Now, for an example. For instance, let's say that product "A" is made with  $\alpha$ -chymotrypsin that has 500 units of activity per mg. To get the total  $\alpha$ -chymotrypsin activity in product "A" we would multiply 3 mg times 500 units per mg to get 1500 units total  $\alpha$ -chymotrypsin activity. Let's say that product "B" is made with  $\alpha$ -chymotrypsin in 1000 units of activity per mg. To get the total units of  $\alpha$ -chymotrypsin activity per tablet we would multiply 1.5 mg times 1000 units of  $\alpha$ -chymotrypsin activity per mg to get 1500 units of  $\alpha$ -chymotrypsin activity per tablet, exactly the same as product "A." The smaller weight of  $\alpha$ -chymotrypsin in product "B" is equal in activity to the larger weight of  $\alpha$ -chymotrypsin in product "A" because product "B" used an enzyme that was twice as active as product "A's" enzyme, thus making up for the difference in weight of the enzyme present. Label information for the products might look something like that below-

Product "A"		Product "B"	
$\alpha$ -chymotrypsin (500 Units/mg)- mg	3	$\alpha$ -chymotrypsin (1000 Units/mg)- mg	1.5

As you can see, it's up to the consumer to determine the total enzyme activity of the two products. Now that you understand the relationships between weight of enzymes in a product and the activity of the enzymes it should be much easier to choose between products.