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Chaptalizing Your Wine

What is it?

Making wine from fruit presents several challenges as a new set of factors are introduced into the process. Chaptalizing is the adjustment of your must's sugar level. The proper amount of sugar (or starting gravity) ensures that your wine has an appropriate amount of alcohol. As winemakers know, the yeast converts the sugar into alcohol during fermentation, so the amount of sugar in the must translates into the amount of alcohol in your wine.

Alcohol content does not only effect the effect a wine will have on you, but also impacts the taste of your wine by causing it to be unbalanced. Too little alcohol and the wine will be too thin. Too much and it will overpower the true flavour of the wine.

Benefits of Chaptalizing

Just as the weather differs from year to year, so does the sugar content of your fruit and its must. This is challenging for winemakers because this means that following your trusted Merlot recipe will not necessarily result in the same wine every year. Chaptalizing, simply the addition of sugar to must prior to fermentation, compensates for troublesome years that often occur in cooler grape growing regions like Ontario, Oregon, and Germany.

Chaptalizing also benefits your wine in other ways. It prevents spoilage since wines with an alcohol content of 10% or higher are less likely to spoil. Adding sugar stirs the must which makes it ready to accept the yeast. Chaptalizing also encourages you to monitor sugar content and record starting gravity, both good habits for a winemaker to develop.

How it's Done

1. Make must by pressing your fruit or grapes into your fermentation vessel. Be sure that this container has enough room for not just your juice, but also for any additions or adjustments you may have to make like adding sugar or punching down the cap.
2. Using the instructions, take a specific gravity reading with your hydrometer, the instrument that measures starting gravity in a sample of must.
See where your sample falls on the following chart and decide if you need to make any adjustments.



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3. Make any necessary adjustments. For example, if I am making 23 litres of Merlot and I get a specific gravity reading of 1.070 I will want to raise this reading to 1.090 since it is a red wine.

4. How much sugar do I need to add? A little math is required, but it is not that hard. By checking the chart I can see that must with a specific gravity of 1.070 has 2.5 kg of sugar per litre. To figure how much sugar is in the must simply multiply 2.5 kg by 23 litres.

Specific Gravity	kg Sugar in One Litre of Must	Brix	Potential Alcohol (%)
1.040	15 g	10	5.1
1.045	1.72 kg	11.5	5.8
1.050	1.9 kg	12.5	6.5
1.055	2 kg	14	7.2
1.060	2.2 kg	15	7.8
1.065	2.4 kg	16.5	8.6
1.070	2.5 kg	17.5	9.2
1.075	2.8 kg	18.5	9.9
1.080	3 kg	20	10.6
1.085	3.2 kg	21	11.4
1.090	3.4 kg	22	12.2
1.095	3.5 kg	23	12.7
1.100	3.8 kg	24	13.4
1.105	4 kg	25	14.1

Ideal starting gravity for white wine is 1.085 – 1.090. For red the starting gravity should be 1.090 – 1.095. If fermented to dry the resulting wine should have an alcohol content of 11.5-12%.

$$2.5 \text{ kg} \times 23 \text{ litres} = 57.5 \text{ kg}$$

Our desired specific gravity is 1.090 which has 3.4 kg per litre. So complete the same calculation to see how much sugar would be in the must.

$$3.4 \times 23 = 78.2 \text{ kg}$$

Then calculate the difference between the two total amounts of sugar.

$$78.2 - 57.5 = 20.7$$

Rounding up, our calculation tells us to add 21 kg of sugar. However, always add less sugar than required, then measure and see if you have to add more. When adding anything to your wine it is a good idea to add about 85% of the amount, check it, then add the remainder if need be.

If you add too much sugar then you run the risk of stuck fermentation, so be careful!



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5. Adding the sugar. Use normal white granulated sugar that is most likely in your kitchen. But don't just dump it into your must! Sugar can take a while to dissolve and this will impede the fermentation process.

Heat up a strained sample of must on your stove top in a saucepan. Make sure your sample has no solids in it and there is enough of it to mix with the sugar you are going to add.

Heat up the liquid, but be sure to not let it boil or smoke. Add the sugar slowly and stir until it is dissolved.

Let the liquid cool and then reintroduce it into your must. Stir vigorously.

Continue with any other measurements and adjustments you want to make before pitching your yeast.

Taking careful measurements and keeping good records are the keys to good winemaking. With a lot of care and a little inspiration, your wine will be a true fruit of your labour.



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