



## ecoAgra™ increases the BRIX level in plants, naturally

### What is BRIX?

#### From Wikipedia

**Degrees Brix** (symbol °Bx) is a unit representative of the sugar content of an aqueous solution. One degree Brix corresponds to 1 gram of sucrose in 100 grams of solution and thus represents the strength of the solution as a percentage by weight (% w/w) (strictly speaking, by mass). If the solution contains dissolved solids other than pure sucrose, such as other sugars, minerals etc., then the °Bx only approximate the dissolved solid content. The °Bx has traditionally been used in the wine, sugar, fruit juice, honey and other industries. It is intended to represent exactly the same thing as the degree Plato (°P), widely used by the brewing industry, and the degree Balling which, while it is the oldest of the three, is still in use in some parts of the world and found in textbooks which are considered current today. While all three are intended to represent the same thing (the number of grams of sucrose in 100 grams of solution) in fact they do not though the differences are small. For example a particular sucrose solution known to have an apparent specific gravity (20°/20°C) of 1.040 would have its Brix value reported as 9.99325 °Bx and its Plato value as 9.99359 °P while the sugar industry, whose representative body, the International Commission for Uniform Methods of Sugar Analysis (ICUMSA), has obsoleted °Bx in favor of "mass fraction", would report the strength of this solution as 9.99249%. The differences between these three systems are clearly of little practical significance as their magnitudes are less than the precision of even relatively sophisticated instruments. Because of this and because of the wide historical use of the Brix unit modern instruments may calculate mass fraction using ICUMSA official formulas but report the result as °Bx.

First Karl Balling, then Adolf Brix and finally the *Normal Eichungskommission* under Fritz Plato prepared pure sucrose solutions of known strength, measured their specific gravities and prepared tables of percent sucrose by weight vs. measured specific gravity. Balling measured specific gravity to 3 decimal places, Brix to 5 and the Normal Eichungskommission to 6 with the goal of the Kommission being to correct errors in the 5th and 6th decimal place in the Brix table.

Equipped with one of these tables, a brewer wishing to know how much sugar was in his wort could measure its specific gravity and enter that specific gravity into the Plato table to obtain °Plato which is the same as % sucrose w/w. A vintner could measure the specific gravity of his must and enter the Brix table to find the must °Bx value i.e. Its % sucrose w/w. It is important to point out that neither wort nor must is a solution of pure sucrose in pure water. Many other compounds are dissolved as well but these are either sugars, which behave very similarly to sucrose with respect to specific gravity as a function of concentration, or compounds which are present in small amounts (minerals, hop acids in wort, tannins, acids in must). In any case even if °Bx are not representative of the exact amount of sugar in a must or fruit juice they can be used for comparison of relative sugar content.



A Brix-measuring instrument for use in the vineyard

For more information see <http://en.wikipedia.org/wiki/Brix>

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