



## VOLUMETRIC ADJUSTMENTS FOR ADDING SYRUP ADJUNCTS TO PRIMARY AND SECONDARY – REVISION 1.3

### **Defining *Late Additions***

A late addition is defined as adding candi syrup to any stage of primary or secondary. Due to the added volume of the syrups, the volume of the ale will change and thus alter the total volume changing the gravity calculation by not only the addition of fermentables but also by the increase in volume. This document defines the formula necessary for the adjustment in volume pro-rata based on the increase in volume created by the syrups themselves.

### **Why Add Adjuncts Late?**

Adding a candi syrup into primary, or more commonly to secondary, has a number of purposes. The formula for volumetric adjustment will provide an accurate calculation for the increase in gravity for this late addition.

### **Introduction**

Adding 1.0 lb of candi syrup to a *boil* will have a de-facto increase in gravity by 1.032 pp/g (if we assume the boil-off of the added volume of the syrup). However, when adding prepared syrup to an *active fermentation* the overall volume of the ale will increase and require the gravity calculation to be pro-rated.

### **Syrup Preparation**

Although this has previously been described in the “Syrup Use” document, it is briefed here in a different context for convenience. Adding syrups to a *relatively* cool fermentation can cause solubility issues. To avoid this, dilution and preparation are recommended:

1. Add syrup to 2000ml Erlenmeyer flask (or pan + lid if you do not have a flask)
2. Calculate the water required at 4.0 fluid ounces per lb of syrup
3. Keep in mind that 1.0 lb of candi syrup is 10.4 fluid ounces.
4. Bring to a slow boil. Keep covered and let cool to room temp
5. Gently stir cooled mixture into active fermentation
6. Reseal primary or secondary vessel

## **Volumetric Gravity Calculation – Simple Method**

### Step #1 – Calculate Volume to be Added

For every 1.0 lb of *prepared* candi syrup you will have 14.4 fluid ounces (candi syrup 10.4 ounces + boil water 4.0 ounces). Multiply the number of pounds of prepared candi syrup by 14.4 ounces.

### Step #2 – Calculate Total Ale Volume

Add the prepared syrup volume to your target ale volume.

### Step #3 – Determine the number of gravity points to be added

Multiply the number of pounds of candi syrup you have prepared by 32. This will give you the total number of gravity points you will add to your ale.

### Step #4 – Determine the volume adjusted gravity increase

Divide the total gravity points by the new total volume of ale you have *in gallons*. This will give you a volumetrically adjusted increase in gravity in pp/g.