

Cube-Cola manual

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version 1.8.1 release date 27/11/14

1 cola concentrate

Contains:

size **SMALL** (makes up 7L cola)

Flavour oils⁽²⁾

Gum arabic⁽³⁾

Water⁽⁴⁾

Citric acid⁽⁵⁾

Caffeine⁽⁶⁾

Caramel colour⁽¹⁾.

You will need additionally:

325ml water⁽⁷⁾ for the sugar syrup

750g sugar⁽⁸⁾ (or to taste)

7L carbonated water⁽⁹⁾

(Detailed ingredient information and product advice on page 2 of this manual).

METHOD

Make a sugar syrup:

Whisk the sugar and water together in a pot over low heat to speed-dissolve. If stove is unavailable, use boiling water from an electric kettle, filter to avoid limescale. Allow the syrup to cool.

Add the cola concentrate to the sugar syrup and mix well. Use a little sugar syrup to rinse out the concentrate jar, to ensure maximum concentration.

You now have approximately 0.9 L cola syrup, which makes up about 7L Cube-Cola. Store in a sealed container, preferably refrigerated.

Making cola:

Prepare cola as needed. Ratio is 7 parts carbonated water to 1 part cola syrup. Eg, if mixing up a 2L bottle, pour out 250ml of the water and replace with 250ml syrup (a funnel can be helpful). Invert the bottle once to mix well.

Alternately, you could add 2 shots (50ml) cola syrup to 1x 350ml glass of sparkling water (stir well).

Sugar free:

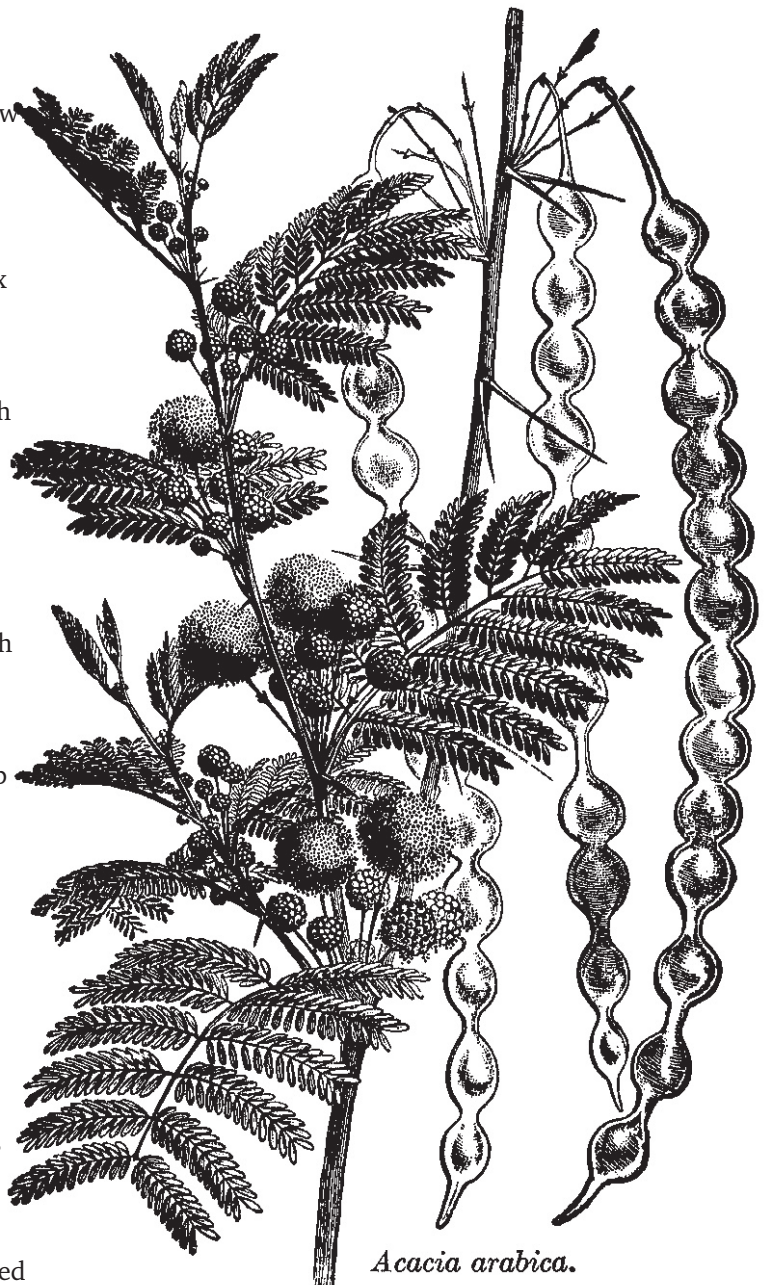
Agave syrup can be substituted for sugar syrup. Best mix ratio remains to be determined, but we recommend reducing the syrup-to-concentrate ratio above by 1/3, possibly 1/2. See website for further non sugar research.

Serving suggestions:

Ice & lemon. For open cuba libre: 250ml Cube-Cola, 1 shot rum, fresh squeeze of lime.

Storage:

Concentrate should be stored in a cool place and used preferably within a year of issue.



Acacia arabica.

<http://www.cube-cola.org>

Bibliography of Ingredients & Techniques

(1) **Caramel Colour#50** from DD Williamson, Worldwide Leader in Caramel Colouring
<http://www.caramel.com>.

(2) **Flavour oils** food grade, from Essential Oil Company (USA)
<http://www.essentialoil.com>.
Flavour is under development, current version contains:

0.62 ml orange oil
0.50 ml lime oil
0.16 ml lemon oil
0.07 ml cassia oil
0.12 ml nutmeg oil
0.02 ml coriander oil
0.02 ml lavender oil
0.02 ml neroli oil (optional, due to extreme price per drop)

Oils are hydrophobic ie. not soluble in water. For a successful cola it is necessary to make an oil-in-water emulsion where the oils form tiny droplets that are evenly dispersed / suspended in the water.

(3) **Gum arabic** derived from the sub-Saharan acacia plant, acts as the emulsifier to stabilise the emulsion. The gum sits at the interface between the oils and water, going between the particles to make a loosely-connected network. If a droplet of oil is completely surrounded by a layer of emulsifier, it will be able to stay suspended in the water. The smaller the oil particles, the more surface area is in the interface, 1-5 microns is about the right border. You use shear (force) to create the interface (*what you are fighting is gravity*). Cube-Cola uses a cheap hammer drill with a kitchen whisk attachment. The freeze-dried, food-grade instant gum arabic used in Cube-Cola is sourced from Chemcolloids <http://chemcolloids.com>.

(4) **Water**, tap. Low calcium and low magnesium content create favourable conditions for emulsification however at these quantities the effect is negligible.

(4a) **Vodka** trace (0.006 drops per litre of prepared cola). Discontinued from current version recipe due to unclear efficacy. Alcohol likes water (hydrofelicitous), it is instantly soluble so in the pre-emulsion stage, alcohol can slightly increase the water-solubility of the particles and decrease the density difference between them.

(5) **Citric acid** from Brewer's Droop, Gloucester Rd, Bristol.

(6) **Caffeine** (powdered), mail-order from online sports supplements suppliers My Protein.
<http://www.myprotein.co.uk>

(7) **Water** Bottled, filtered or tap. Low mineral content recommended.

(8) **Sugar** white, granulated. We suggest using homeland-grown sugars such as Silver Spoon (beet sugar, UK), widely available.

(9) **Water** carbonated. Variations in carbonated water will greatly affect the taste of your cola, high fizz and low mineral content (particularly iron, calcium, magnesium) are generally preferred. Possible options include supermarket-brand sodium-free soda, cheap sparkling mineral water (Cube-Cola recommends supermarket own brands sparkling water; Spa Red), or alternately brew your own. Recipe for home-brew carbonated tap water found at

http://www.colawp.com/colas/400/cola467_recipe.html, please note this recipe has not been tested yet by Cube-Cola.

(10) **Cube-Cola** is produced at Ducrow Court, Bristol BS28AR UK; and distributed internationally. Recipe is open-source under the GNU/GPL (<http://gnu.org>), with published updates at <http://cube-cola.org>. Derived from the original Open Cola recipe at http://www.colawp.com/colas/400/cola467_recipe.html

Credits

Cube-Cola is self-financed from the personal funds of Kayle Brandon and Kate Rich, and by its drinkers. Thanks to Cube Microplex (Bristol) for initial investment and undying support <http://microplex.cubecinema.com>. Contributors: Kate Rich, Kayle Brandon; consultants Matthew Gray, Richard Grove, Dr Peter Barham, Yadunandan Dar.

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<http://www.cube-cola.org>