

Nutritional Composition of Maple Syrup

- Americans consume 47.5kg of refined sweeteners per capita (31 tsp or 130g per person per day) (most of these are in the form of refined cane and beet sugar, corn syrup, glucose, and dextrose) (1)
- Sucrose is the main component of maple sap, with a few trace minerals and antioxidants as well

| Component | Quantity | | Mineral | Concentration (ppm) |
|------------------|-----------------|--|----------------|----------------------------|
| Sucrose | 68.0% | | Potassium | 1300-3900 |
| Glucose | 0.43% | | Calcium | 400-2800 |
| Fructose | 0.30% | | Magnesium | 12-360 |
| Water | 31.7% | | Manganese | 2-220 |
| Malic Acid | 0.47% | | Sodium | 0-6 |
| Fumaric Acid | 0.004 | | Phosphorus | 79-183 |
| Calcium | 775mg/L | | Iron | 0-36 |
| Magnesium | 167mg/L | | Zinc | 0-90 |
| Potassium | 2026mg/L | | Copper | 0-2 |
| | | | Tin | 0-33 |

-Antioxidants

- Antioxidants include vitamin E, vitamin C, flavonoids, lycopene, phenolic acids, and polyphenols (1)
- Antioxidants help prevent cancer and lower risk factors for cardiovascular disease (1)
- Common antioxidant-rich foods include berries, dark chocolate, nuts, green tea, and red wine (1)
- Antioxidant activity of maple syrup is 20-30x that of common sweeteners (1)
 - Refined sugar and corn syrup have almost no antioxidant activity (<0.1mmol FRAP/100g) (1)
 - Maple syrup has 20-70x antioxidant activities of common refined sugars (0.2-0.7 mmol FRAP/100g) (1)
 - Dark and black strap molasses has the most antioxidant activity, (500x more than refined sugar and 10-20x that of maple syrup) (1)
- Maple syrup contains phenolic compounds, which have antioxidant activity (1)
- Antioxidant activity of pure maple syrup is comparable to that of strawberry and orange juices (2)
- Replacing American's refined sugars (on average 130g/day) with maple syrup would result in increase of antioxidants equivalent to one serving of berries or nuts each day (1)
- Antioxidant activity enhanced with longer cooking times, in darker syrups, and in saps collected later in the season (2)

-Minerals

- Maple syrup contains calcium, potassium, manganese, magnesium, phosphorus, iron, and thiamin (1)
- The mineral content is minor in comparison to other foods
 - Example: Calcium in ½ gallon syrup= Calcium in 1 8oz glass of milk

1: Phillips, K.M., Carlsen, M.H., Blomhoff, R. (2009). Total Antioxidant Content of Alternatives to Refined Sugar. *Journal of the American Dietetic Association*, 109(1). doi: 10.1016/j.jada.2008.10.014

2: Legault, J., Girard-Lalancette, K., Grenon, C., Dussault, C., Pichette, A. (2010). Antioxidant Activity, Inhibition of Nitric Oxide Overproduction, and In Vitro Antiproliferative Effect of Maple Sap and Syrup from *Acer saccharum*. *Journal of Medicinal Food*. 20132041

3: Ball, D.W. (2007). The Chemical Composition of Maple Syrup. *Journal of Chemical Education*, 84(10).