

Chart 05 - Refined Sugar Crops in: Comparison of Potential Staple Crops

Refined Sugar	Yield	%	Adjusted	Protein	Fat	Carbs	Sugars	Time	Protein	Fat	Sugars	Sugars	Notes
Crop type	kg/ha-crop		kg/ha-crop	percent	percent	percent	percent	mo/crop	kg/ha-yr	kg/ha-yr	kg/ha-yr	kg/ha-crop	
Sugar beet	53148	0.145	7706	0.00%	0.00%	100.00%	100.00%	6	0	0	15413	7706	14.5% extractable sugar; industry data.
Tomato green	80279	0.95	76265	1.20%	0.20%	5.10%	4.00%	2.5	4393	732	14643	3051	Theoretical, based on USDA SR25 data.
Daikon high	139000	1.00	139000	0.60%	0.10%	4.10%	2.50%	3	3336	556	13900	3475	High but attainable yield.
Pumpkin sugar	100000	0.70	70000	1.00%	0.10%	8.50%	4.00%	3	2800	280	11200	2800	Assumes higher than usual sugar content.
Sugar cane	69866	0.116	8104	0.00%	0.00%	100.00%	100.00%	12	0	0	8104	8104	11.6% extractable sugar; industry data.
Tomato red	80279	0.95	76265	0.88%	0.20%	3.89%	2.63%	3	2685	610	8023	2006	Tomatoes, red, ripe, raw, year round average
Onions sweet	56071	0.90	50464	1.10%	0.10%	9.34%	5.02%	4	1665	151	7600	2533	Onions, sweet, raw; USDA SR25 data.
Carrots high	56000	0.89	49840	0.93%	0.24%	9.58%	4.74%	4	1391	359	7087	2362	Carrots, raw; USDA SR25 data.
Daikon med	100000	0.79	79000	0.60%	0.10%	4.10%	2.50%	3.5	1625	271	6771	1975	Assumes moderate yield.
Rutabagas	44000	0.85	37400	1.20%	0.20%	8.62%	4.46%	3	1795	299	6672	1668	Rutabagas, raw; USDA SR25 data.
Yacon	54000	0.80	43200	0.37%	0.02%	10.60%	8.80%	7	274	15	6517	3802	8.80% sugar, not including oligosaccharides.
Jerusalem artichoke	20000	1.00	20000	2.00%	0.01%	17.44%	9.60%	4	1200	6	5760	1920	70 to 90% of sugar is oligosaccharides.
Mushroom	300000	0.90	270000	2.18%	0.34%	3.26%	1.98%	12	5886	918	5346	5346	Too labor intensive to be a source of sugar.
Turnip roots	39333	0.89	35006	0.90%	0.10%	6.43%	3.80%	3	1260	140	5321	1330	Turnips, raw; USDA SR25
Watermelon	35200	0.52	18304	0.61%	0.15%	7.55%	6.20%	3	447	110	4539	1135	Watermelon, raw; USDA SR25
Sweet sorghum	10000	0.75	7500	0.00%	0.00%	18.00%	18.00%	4	0	0	4050	1350	Sweet sorghum is also a high quality grain.
Chufa (tiger nut) high	14000	0.80	11200	5.00%	30.00%	47.00%	11.70%	4	1680	10080	3931	1310	Chufa is also the most productive source of fat.
Squash Hubbard	21052	0.95	19999	2.00%	0.50%	8.70%	3.95%	3	1600	400	3160	790	Squash is essentially the same as pumpkin.
Peas green	11414	1.00	11414	5.42%	0.40%	14.45%	5.67%	2.5	2969	219	3106	647	Peas provide sugar and high quality protein.
Leeks	41471	0.80	33177	1.50%	0.30%	14.15%	3.90%	5	1194	239	3105	1294	Leeks are cold hardy, and a complete protein.
Parsnips	25000	0.85	21250	1.20%	0.30%	17.99%	4.80%	4	765	191	3060	1020	Parsnips need further development.
Peppers green	30719	1.00	30719	0.86%	0.17%	4.64%	2.40%	3	1057	209	2949	737	Red peppers have more sugar, longer season.
Eggplant	37000	0.81	29970	1.01%	0.19%	5.70%	2.35%	3	1211	228	2817	704	Needs further development to be a staple crop.
Broccoflower	21353	1.00	21353	2.95%	0.30%	6.09%	3.03%	3	2520	256	2588	647	Possible source of sugar and complete protein.
Cabbage savoy high	70000	0.80	56000	2.00%	0.10%	6.10%	2.27%	6	2240	112	2542	1271	Savoy variety is good for protein and sugar.
Swiss chard	60000	0.92	55200	1.80%	0.20%	3.74%	1.10%	3	3974	442	2429	607	Oxalic acid content makes this a poor choice.
Maize sweet high	17012	0.80	13610	3.27%	1.96%	18.70%	6.26%	5	1068	640	2045	852	Sweet corn, not dent corn, for sugar content.
Achira	23000	0.80	18400	0.50%	0.00%	21.90%	3.50%	4	276	0	1932	644	Edible root with high starch content.
Sweet potatoes	22850	0.72	16452	1.57%	0.05%	20.12%	4.18%	5	620	20	1650	688	High beta-carotene content.

The above Chart lists the top potential crops for production of refined sugar in kilograms of sugar per hectare per year: **kg/ha-year**. Refined sugar consists of mono- and di-saccharides only (e.g. glucose, fructose, sucrose). Oligosaccharides contain 3 to 10 saccharide units, and are generally indigestible to humans. High, med, low indicate different crop yields.
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For a full explanation of the above Chart, see the article, "Comparison of Potential Staple Crops" at: <http://www.gardeningplaces.com/articles/>
See also my blog, Hunger Math at: <http://hungermath.wordpress.com/>
and my book:
Hunger Math: world hunger by the numbers by Ronald L. Conte Jr.