Staple food

From Wikipedia, the free encyclopedia

A **staple food**, sometimes simply referred to as a **staple**, is a food that is eaten routinely, and in such quantities that it constitutes a dominant portion of a standard diet in a given population, supplying a large fraction of the needs for energy-rich materials and generally a significant proportion of the intake of other nutrients as well. Most people live on a diet based on just a small number of staples.[1]

Grains

Various types of potatoes

Staple foods vary from place to place, but typically they are inexpensive or readily available foods that supply one or more of the three organic macronutrients needed for survival and health: carbohydrates, proteins, and fats. Typical examples of staples include tuber- or root-crops, grains, legumes, and other seeds. The staple food of a specific society may be eaten as often as every day, or every meal. Early agricultural civilizations valued the foods that they established as staples because, in addition to providing necessary nutrition, they generally are suitable for storage over long periods of time without decay. Such storable foods are the only possible staples during seasons of shortage, such as dry seasons or cold-temperate winters, against which times harvests have been stored; during seasons of plenty wider choices of foods may be available.

Most staple plant foods are derived either from cereals such as wheat, barley, rye, maize, or rice, or starchy tubers or root vegetables such as potatoes, yams, taro, and cassava.[2] Other staple foods include pulses (dried legumes), sago (derived from the pith of the sago palm tree), and fruits such as breadfruit and plantains.[3] Staple foods may also contain, depending on the region, sorghum, olive oil, coconut oil and sugar.[4][5][6] Most staples are plant materials, but in some communities fishing is the primary source of nutrition.[7]

Contents

Demographic profile of staple foods

Of more than 50,000 edible plant species in the world, only a few hundred contribute significantly to human food supplies. Just 15 crop plants provide 90 percent of the world's food energy intake (exclusive of meat), with rice, maize and wheat comprising two-thirds of human food consumption. These three alone are the staples of over 4 billion people.[8]

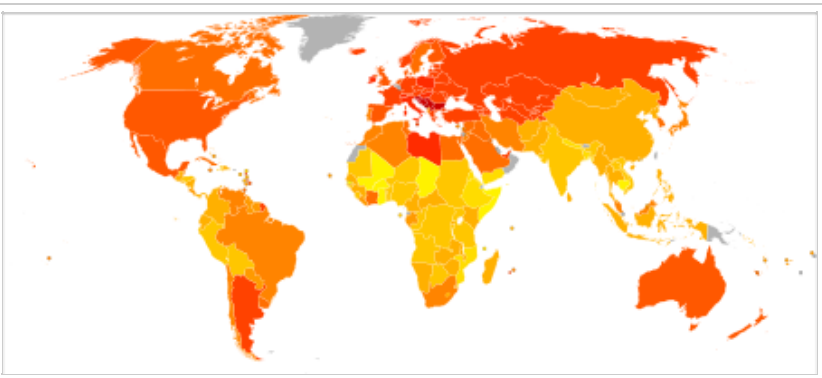
Although there are over 10,000 species in the cereal family, just a few have been widely cultivated over the past 2,000 years. Rice alone feeds almost half of humanity. Roots and tubers are important staples for over 1 billion people in the developing world; accounting for roughly 40 percent of the food eaten by half the population of sub-Saharan Africa. Cassava is another major staple food in the developing world, providing a basic diet for around 500 million people. Roots and tubers are high in carbohydrates, calcium and vitamin C, but low in protein.

The staple food in different parts of the world is a function of weather patterns, local terrain, farming constraints, acquired tastes and ecosystems. For example, the main energy source staples in the average African diet are cereals (46 percent), roots and tubers (20 percent) and animal products (7 percent). In Western Europe the main staples in the average diet are animal products (33 percent),

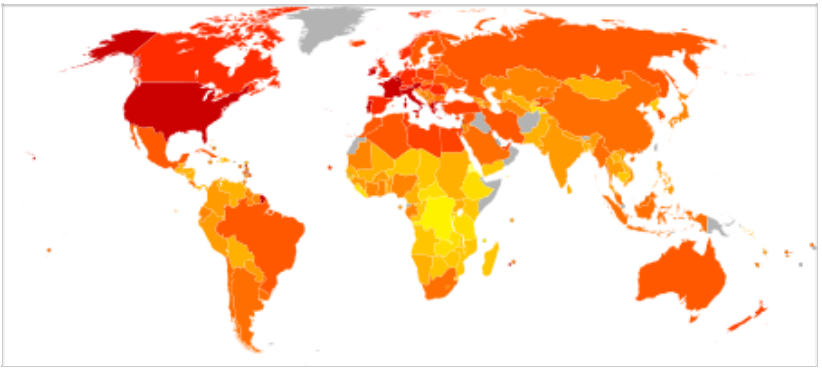
cereals (26 percent) and roots and tubers (4 percent). Similarly, the energy source staples vary widely within different parts of India, with its colder climate near Himalayas and warmer climate in its south.

Most of the global human population lives on a diet based on one or more of the following staples: rice, wheat, maize (corn), millet, sorghum, roots and tubers (potatoes, cassava, yams and taro), and animal products such as meat, milk, eggs, cheese and fish. Regional staple foods include rye, soybeans, barley, oats, and teff.

With economic development and free trade, many countries have shifted away from low-nutrient density staple foods to higher nutrient density staple foods, as well as towards greater meat consumption. Despite this trend, there is growing recognition of the importance of traditional staple crops in nutrition. Efforts are underway to identify better strains with superior nutrition, disease resistance and higher yields.



Average kcal/person/day, 1979-1981



Average kcal/person/day, 2001-2003

Food energy consumption per person, per day, worldwide. Except for war-torn countries, the world is eating more staples per capita per day, despite rising world population.

Some foods such as quinoa - pseudocereal grains that originally came from the Andes - were also staple foods centuries ago.[9] Oca, ulluco and amaranth seed are other foods claimed to be a staple in Andean history.[10] Similarly, pemmican was a staple of the Plains Indians of North America.[11] The global consumption of specialty grains such as quinoa, in 2010, was very small compared to other staples such as rice, wheat and maize. These once popular, then forgotten grains are being reevaluated and reintroduced.

Ten staples that feed the world (by annual production)[12]

		World production 2008	**Average world yield 2010**	**World's most productive farms 2012**[13]	
Rank	Crop	(metric tons)	(tons per hectare)	(tons per hectare)[14]	Country
1	Maize (Corn)	823 million	5.1	25.9	Saint Vincent and the Grenadines
2	Wheat	690 million	3.1	8.9	New Zealand
3	Rice	685 million	4.3	9.5	Egypt
4	Potatoes	314 million	17.2	45.4	Netherlands
5	Cassava	233 million	12.5	34.8	India
6	Soybeans	231 million	2.4	4.4	Egypt
7	Sweet potatoes	110 million	13.5	33.3	Senegal
8	Sorghum	66 million	1.5	86.7	United Arab Emirates
9	Yams	52 million	10.5	28.3	Colombia
10	Plantain	34 million	6.3	31.1	El Salvador

Refining

Rice is most commonly eaten as cooked entire grains, but most other cereals are milled into flour or meal which is used to make bread; noodles or other pasta; and porridges and "mushes" such as polenta or mealie pap. Mashed root vegetables can be used to make similar porridge-like dishes, including poi and fufu. Pulses (particularly chickpeas) and starchy root vegetables, such as Canna, can also be made into flour.

Part of a whole

Although nutritious, vegetable staples generally do not by themselves provide a full range of nutrients, so other foods need to be added to the diet to ward off malnutrition. For example, the deficiency disease pellagra is associated with a diet consisting primarily of maize, and beriberi with a diet of white (*i.e.*, refined) rice.[15]

Maize, the most produced food staple in the world.

Nutritional content

The following table shows the nutrient content of major staple vegetable foods in a raw form. Raw grains, however, are not edible and cannot be digested. These must be sprouted, or prepared and cooked for human consumption. In sprouted and cooked form, the relative nutritional and anti-nutritional contents of each of these grains is remarkably different from that of raw form of these grains reported in this table.

Nutrient content of major staple foods[16]

STAPLE:	**Maize / Corn**[A]	**Rice**[B]	**Wheat**[C]	**Potato**[D]	**Cassava**[E]	**Soybean (Green)**[F]	**Sweet potato**[G]	**Sorghum**[H]	**Yam**[Y]	**Plantain**[Z]
Component (per 100g portion)	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount
Water (g)	10	12	13	**79**	60	68	77	9	70	65
Energy (kJ)	**1528**	**1528**	1369	322	670	615	360	1419	494	511
Protein (g)	9.4	7.1	12.6	2.0	1.4	**13.0**	1.6	11.3	1.5	1.3
Fat (g)	4.74	0.66	1.54	0.09	0.28	**6.8**	0.05	3.3	0.17	0.37
Carbohydrates (g)	74	**80**	71	17	38	11	20	75	28	32
Fiber (g)	7.3	1.3	**12.2**	2.2	1.8	4.2	3	6.3	4.1	2.3
Sugar (g)	0.64	0.12	0.41	0.78	1.7	0	4.18	0	0.5	**15**
Calcium (mg)	7	28	29	12	16	**197**	30	28	17	3
Iron (mg)	2.71	0.8	3.19	0.78	0.27	3.55	0.61	**4.4**	0.54	0.6
Magnesium (mg)	**127**	25	126	23	21	65	25	0	21	37
Phosphorus (mg)	210	115	**288**	57	27	194	47	287	55	34
Potassium (mg)	287	115	363	421	271	620	337	350	**816**	499
Sodium (mg)	35	5	2	6	14	15	**55**	6	9	4
Zinc (mg)	2.21	1.09	**2.65**	0.29	0.34	0.99	0.3	0	0.24	0.14
Copper (mg)	0.31	0.22	**0.43**	0.11	0.10	0.13	0.15	-	0.18	0.08
Manganese (mg)	0.49	1.09	**3.99**	0.15	0.38	0.55	0.26	-	0.40	-
Selenium (µg)	15.5	15.1	**70.7**	0.3	0.7	1.5	0.6	0	0.7	1.5
Vitamin C (mg)	0	0	0	19.7	20.6	**29**	2.4	0	17.1	18.4
Thiamin (mg)	0.39	0.07	0.30	0.08	0.09	**0.44**	0.08	0.24	0.11	0.05
Riboflavin (mg)	**0.20**	0.05	0.12	0.03	0.05	0.18	0.06	0.14	0.03	0.05
Niacin (mg)	3.63	1.6	**5.46**	1.05	0.85	1.65	0.56	2.93	0.55	0.69
Pantothenic acid (mg)	0.42	**1.01**	0.95	0.30	0.11	0.15	0.80	-	0.31	0.26
Vitamin B6 (mg)	**0.62**	0.16	0.3	0.30	0.09	0.07	0.21	-	0.29	0.30
Folate Total (µg)	19	8	38	16	27	**165**	11	0	23	22
Vitamin A (IU)	214	0	9	2	13	180	**14187**	0	138	1127
Vitamin E, alpha-										

tocopherol (mg)	0.49	0.11	**1.01**	0.01	0.19	0	0.26	0	0.39	0.14
Vitamin K1 (µg)	0.3	0.1	1.9	1.9	1.9	0	1.8	0	**2.6**	0.7
Beta-carotene (µg)	97	0	5	1	8	0	**8509**	0	83	457
Lutein+zeaxanthin (µg)	**1355**	0	220	8	0	0	0	0	0	30
Saturated fatty acids (g)	0.67	0.18	0.26	0.03	0.07	**0.79**	0.02	0.46	0.04	0.14
Monounsaturated fatty acids (g)	1.25	0.21	0.2	0.00	0.08	**1.28**	0.00	0.99	0.01	0.03
Polyunsaturated fatty acids (g)	2.16	0.18	0.63	0.04	0.05	**3.20**	0.01	1.37	0.08	0.07

A corn, yellow
B rice, white, long-grain, regular, raw, unenriched
C wheat, hard red winter
D potato, flesh and skin, raw
E cassava, raw
F soybeans, green, raw
G sweet potato, raw, unprepared
H sorghum, raw
Y yam, raw
Z plantains, raw

Note: The highlighted value is the highest nutrient density amongst these staples. Other foods of the world, consumed in smaller quantities, may have nutrient densities higher than these values.

Production

Most staple food is produced using modern farming practices. However, the yield of staple food from Organic farming is growing.

Gallery of food staples

Boiled white rice

Kidney beans

Amaranth (left) and wheat

Cassava

Sweet potato

Edamame - green soybeans

Sorghum seeds (left) and popped sorghum

Japanese yam

Plantains

Ulluco

Oca

Taro

Millet

Quinoa

See also

- Famine food
- Cash crop
- List of foods
- Maize
- Rice
- Vavilov Center

Wikimedia Commons has media related to ***Staple food***.

References

1. ^ United Nations Food and Agriculture Organization: Agriculture and Consumer Protection. "Dimensions of Need - Staples: What do people eat?" (http://www.fao.org/docrep/u8480e/u8480e07.htm). Retrieved 2010-10-15.
2. ^ Staple foods — Root and Tuber Crops (http://www.kew.org/ksheets/tubers.html)
3. ^ Staple Foods II -- Fruits (http://www.kew.org/ksheets/fruits.html)
4. ^ African food staples (http://www.afrol.com/archive/food_staples.htm)
5. ^ About olive oil (http://www.alloliveoil.com/)
6. ^ About sugar and sweeteners (http://www.answers.com/topic/sugar-and-sweeteners)
7. ^ Fish as Food (http://www.msc.org/healthy-oceans/the-oceans-today/fish-as-food)
8. ^ "Dimensions of Need: An atlas of food and agriculture" (http://www.fao.org/docrep/u8480e/U8480E01.htm). Food and Agriculture Organization of the United Nations. 1995.
9. ^ E.A. Oelke et al. "Quinoa" (http://www.hort.purdue.edu/newcrop/afcm/quinoa.html). University of Minneasota.
10. ^ Arbizu and Tapia (1994). "Plant Production and Protection Series No. 26. FAO, Rome, Italy" (http://www.hort.purdue.edu/newcrop/1492/tubers.html). FAO / Purdue University.
11. ^ http://www.thecanadianencyclopedia.com/en/article/pemmican/
12. ^ Allianz. "Food security: Ten Crops that Feed the World" (http://knowledge.allianz.com/?709/food-crops). Allianz.
13. ^ "FAOSTAT: Production-Crops, 2010 data" (http://faostat.fao.org/site/567/DesktopDefault.aspx?PageID=567#ancor). Food and Agriculture Organization of the United Nations. 2011.
14. ^ The numbers in this column are country average; regional farm productivity within the country varies, with some farms even higher.

15. ^ United Nations Food and Agriculture Organization: Agriculture and Consumer Protection. "Rice and Human Nutrition" (http://www.fao.org/rice2004/en/f-sheet/factsheet3.pdf). Retrieved 2010-10-15.
16. ^ "Nutrient data laboratory" (http://ndb.nal.usda.gov/ndb/search/list). United States Department of Agriculture. Retrieved June 2014.