The Medieval Black Plague was caused by
Dextrose Sugar + Lack of Sewage

Louis Pasteur was not a doctor he was a wine scientist. But he made an incredible advance in medicine by relating microorganisms to disease. The germ theory was born. Up till then a doctor always washed his hands with surgery that is he always washed his hands after surgery. There was a major intolerance of Pasteur’s work by arrogant medical doctors who did not like a wine specialist interfering with their practice. There is always resistance to new ideas. So for a time they past a law that prohibited washing hands before surgery. But soon the intellect persisted and the germ theory became accepted.

"The Germ is Nothing the Terrain is Everything"

Louis Pasteur
But on his death bed Louis Pasteur had a tremendous insight. He said “it is not the Fauna but the Flora, the terrain is everything.” He realized too late that the conditions of the body determine how a microorganism grows.

There are many reasons for microorganism to flourish and become opportunistic causes of disease. The following diagram shows the immune system the Reticulo-Endothelial System.

Notice the Neuro-Immuno system link of Mind to Body. Stress can disturb the immune system. And Dextrose sugar has been proven to have a negative effect on the immune system. Dextrose sugar goes too quickly into the cells for energy and the white blood cells run to the spleen to hide and are destroyed. Dextrose sugar lowers the white blood cell count. Overdosing on Fructose can be bad for the small intestine but five portions of fruits and vegetables are still the way to go.

The Big Sugar cartel has spent a lot of time and money to create lies and rumours about dextrose use versus fructose. The high fructose corn syrup is not a natural compound and it has many reasons to avoid it. The bottom line is trust nature.
Fleming found that fungus could kill bacteria and there was balance in nature.

Fatty Acids taken from cell Membranes

Stress

HyperGlycemia

HypoGlycemia

High Glycemic Index = DISEASE
"Well all we have to do is follow the candy and sugar holidays to sell our Flu shots and Drugs to the People. They will never believe that sugar weakens their immune systems. They believe what we tell them to believe."

Have a Smurfy Valentine's Day!
Dextrose enters the cells directly and thus makes the pancreas put out twice as much insulin as Levulose. Levulose (aka Fructose) must go to the liver for conversion and thus is more healthy in delivery.

Fructose Transport

Fructose is absorbed in the small intestine, then enters the hepatic portal vein and is directed toward the liver. The metabolism of fructose at this point yields intermediates in the gluconeogenic and fructolytic pathways leading to glycogen synthesis as well as fatty acid and triglyceride synthesis.
Dextrose sugar feeds cancer cells 45 times more than fructose.
conversion in the liver
Blood sugar up and down cascades are responsible for many different diseases.

If we trace the history of sugar we see the history of plague following it. Dextrose sugar weakens the immune system and then normal micro-organisms become pathogenic. This is the case with the plague bacteria which existed well prior to the onset of the plague. The immune deficiency caused by stress and sugar coupled with poor sanitation and poor lifestyle allowed for a pathogen to become opportunistic grow to large numbers and over take people's immune systems.

**Immuno Weakness in the Middle Ages**

The earliest experiences the English had of refined sugar was when Crusaders brought sugar home with them after their campaigns in the Holy Land, where they encountered caravans carrying "sweet salt". Crusade chronicler William of Tyre described sugar as "very necessary for the use and health of mankind." This Dextrose sugar weakened the immune systems but the sugar was in limited supply. There were plagues that followed the crusaders home but it was there supply of sugar that made it possible.
Sugar is one of the oldest and best documented of all of the medieval commodities. Exactly what form, quality and price this commodity achieved could be variable enough to create material for disagreement whenever the product is discussed. What we do know is that it was much more widespread than is commonly believed. A Saxon of the middle and/or lower classes, in pre 800’s England, would certainly have had only honey for a sweetner. However, an Elizabethian ate so much refined, white sugar, that the English were noted for their bad teeth and the sweetmeats that they consumed. For all the many countries and times between conditions of the sugar varied considerably. With the following information I hope to establish the cost, quality, and availability of sugar. Not only in the British Isles, but on the continent as well.

**Sugar In India and Persia**

In 510 BC hungry soldiers of the Emperor Darius were near the river Indus, when they discovered some "reeds which produce honey without bees". They called it shakar By 300 BC the use has spread and Darius’s army is weakened by over use of the dextrose sugar and Alexander defeats them outnumbered over ten to one. In 327 BC Alexander the Great army then starts to use the sugar and gradually they lose strength and dissipate from weakness. Alexander spread dextrose sugar cane through Persia and introduced it in the Mediterranean. This was the beginning of one of the best documented products of the Middle Ages. But wherever it goes it first weakens the immune system.

In 95 AD, in a document entitled "Periplus Maris Erythraei", (or "Guide Book to the Red Sea"), an unknown merchant says there is "Exported commonly....Honey of reeds which is called sakchar." This is possibly the first mention in European history of the use of sugar cane as an article of commerce.

From: "The Wonder That Was India" by A. L. Basham we learn that "In ancient India...."(Since Nero's Time) "...sugar cane was grown, and exported to Europe..." and "...in the time of the Caesars...The main requirements of the West were spices, perfumes, jewels and fine textiles, but lesser luxuries, such as sugar, rice and ghee were also exported." According to Will Durant, who told us the Darius and Alexander the Great stories above in his "Age of Faith", pressing and boiling cane to create sugar as such was first done in India about 300 AD. Prior to this, the juice was used much like honey, as a sweetener for food and drinks. About 540 AD, the Persians had
learned sugar making from India. We now know that there was a lot more contact from India through the Mediterranean world than was previously thought. An example of this is the manner in which Indian literature found its way to the Western countries.

In "The History and Culture of the Indian People, The Classical Age" Vol. 3, the authors note:

"That Indian literature was highly valued in these countries..." (meaning europe and the med)
"....is known by the history of a single book Panchatantra....translated in the 6th century into pehlevi then Arabic then from Arabic to Hebrew, Latin, Spanish, Italian and various other languages of Europe..." (Obviously there was communication and trade...for mention of sugar being traded, see previous.) They also state in another place that "In the seventh century...sugar canes were abundant in this country...", meaning India. By 600 AD, again according to Durant, knowledge of how to produce crystallized sugar was wide spread in this area. (India and Persia) We do know that in 627 AD, the Greek Emperor Heraclius seized a treasury of sugar in the Royal Palace at Ctesiphon. In 641 AD, the Arabs without sugar conquered Persia, and then having learned to cultivate sugar cane, spread it's culture to Egypt, Sicily, Morocco, and Spain, from which sources it reached Europe. Disease follows in the wake.

The Arab Connection

In 827 Moslems landed for the first time in Sicily. It took until 965 to secure their foothold. "Moslem rule was an improvement over that of Byzantium. The latifondi were divided among freed serfs and smallholders, and agriculture received the greatest impetus it had ever known. Thanks to a Moslem custom, uncultivated land became the property of whoever first broke it, thus encouraging cultivation at the expense of grazing. Practically all the distinguishing features of Sicilian husbandry were introduced by the Arabs: citrus, cotton, carob, mulberry, both the celso, or black and the white morrella-sugar cane, hemp, date palm, the list is almost endless." This according to "The Barrier and the Bridge-Historic Sicily" by Alfonso Lowe, Published in 1972. Sugar will weaken the armies and make them more susceptible to disease.

By the end of the ninth century, says "A History of Sicily" by D. Mack Smith, "In Sicily...they planted lemons and bitter oranges. They brought the knowledge of how to cultivate sugar cane and crush it with mills...they introduced the first cotton seeds, the first mulberries and silkworms, the date palm, the sumac tree for tanning and dying, papyrus, pistachio nuts and melons." The Dark ages can be associated with sugar use.

"They introduced...the cotton plant and the sugar cane" and "They were great traders; under their rule Palermo became an international market where merchants from the Christian Italian cities were as welcome as Muslim merchants from Africa and the East. " we are told in "The Sicilian Vespers" by Steven Runciman.

John Julius Norwich, in "The Other Conquest", says the Saracens in Sicily "...introduced cotton and papyrus, citrus and date-palm and enough sugar-cane to make possible, within a very few
years, a substantial export trade."

In "A History of Sicily", Finley, Smith and Duggan add that "They...brought the knowledge of how to cultivate sugar cane and crush it with mills." This tells us that finely powdered sugar was produced in Sicily in the 800's.

In 950 AD, Al Istakhri wrote of extensive irrigation in an area northwest of the Persian Gulf, for sugar cane. He said it was, "Partly used as a food, and partly made into sugar." Also, that in Asker-Mokarram, "All of the people make their living from sugar cane." He mentions cane cultivation as far away as the Caspian Sea, the Hindu Kush, and what is now modern Afghanistan.

Durant, in the "Age of Faith", quotes the Chronicler of "Gesta Francorum", written about 1097 AD, that "many Crusaders died...having found novel nourishment by chewing the sweet reeds called Zucar." By 1099 AD, the knowledge of how to refine sugar had been transmitted from the Holy Lands into Europe. But the negative effects on health are unrecognized.

**Arab-Norman Trade Death**

"The so-called Dark Ages were lighter than we used to believe, and there was a constant interchange of knowledge and ideas between the supposedly hostile worlds of the Cross and the Crescent....The Chevron, or zig-zag, provides an excellent example, for it decorates many a Sicilian door and window. It is invariably adduced as evidence of Arabic workmanship, though we know exactly when and where it originated:

'A second decorative motif, which appears soon afterwards ' (after 1110) , says Stoll, ' rapidly became a distinguishing characteristic of Late English Romanesque. This was the chevron, or zig-zag, a motif whose fecundity was such that it spread virtually everywhere...and even traveled to Apulia and Sicily in the wake of the Normans. '"

The "Stoll" here quoted was the author of "Architecture and Sculpture in Early Britain", being quoted by the author of "The Barrier and the Bridge-Historic Sicily", Alphonso Lowe.

After Roger de Hauteville was crowned King of Sicily in 1130, he recognized quickly that he
would need Arab support to survive. According to Norwich, in "The Kingdom In The Sun 1130-1194", "There would be no second class Sicilians. Everyone, Norman or Italian, Lombard or Greek or Saracen, would have his part to play in the new state....A Greek was appointed Emir of Palermo...another...the navy...Control of the Exchequer was put into the hands of the Saracens. Special Saracen brigades were established in the army, quickly earning a reputation for loyalty and discipline which was to last over a hundred years."

In the 1160's William II of Sicily's "greatest act of patronage was to build the immense Benedictine Abbey of Monreale....The Abbot became the largest landowner after the King himself....His estates included mills and a factory for processing sugar cane....." says D. Mack Smith's "A History of Sicily".

"Crusade or no Crusade, the Normans were too shrewd to allow racial or religious considerations to interfere with their conquest. A hundred years later, (Palermo fell in 1072, so this would be 1172) Christians and Saracens were living side-by-side, amicably enough...Tolerance and adaptability were the two Norman qualities that made the kingdom of Sicily one of the most brilliant of it's time."

So although much is often made of the intolerant and bigoted prevention of trade and social intercourse between Arab and Christian, Lowe's "The Barrier and the Bridge-Historic Sicily" here seems to hold quite a differing view.

In the "Epistola ad Petrum" in 1194, the author describes the area around Palermo lovingly, including, "vines, vegetables, fruit trees, sugar-canases and date-palms". See "The Norman Kingdom of Sicily" for the English description. The Arabs and following them, the Normans seem to have had no trouble enjoying the sweet profits of Sugar and its export in all forms in the 12th century.

Sweet Victory in the Crusades But they bring Back Death

We know from Geoffrey de Vinsauf's "Itinerary of Richard I and Others, to the Holy Land", that in 1192 AD, King Richard I takes a caravan in his campaign in the Crusades...and that

"By this defeat the pride of the Turks was entirely cast down, and their boldness effectually repressed; whilst the caravan, with all its riches, became the spoil of the victors. Its guards surrendered to our soldiers themselves, their beasts of burden, and sumpter horses; and stretching forth their hands in supplication, they implored for mercy, on condition only that their lives should be spared. They led the yoked horses and camels by the halter, and offered them to our men, and they brought mules loaded with spices of different kinds, and of great value; gold and silver; cloaks of silk; purple and scarlet robes, and variously-ornamented apparel, besides arms and weapons of divers forms; coats of mail, commonly called gasiganz; costly cushions, pavilions, tents, biscuit, bread. barley, grain, meal, and a large quantity of conserves and medicines; basins, bladders, chess-boards; silver dishes and candlesticks; pepper, cinnamon, sugar, and wax; and other valuables of choice and various kinds; an immense sum of
money, and an incalculable quantity of goods, such as had never before (as we have said) been taken at one and the same time, in any former battle."

War or no war, though, trade is still necessary. Even Pope Innocent III in his "License to Venice to Trade with The Saracens" written in 1198, recognizes that trade is paramount.

"Besides the indulgence we have promised to those going at their own expense to the east, and besides the favor of apostolic protection granted to those helping that country, we have renewed the decree of the Lateran council which excommunicated those who presume to give arms, iron, or wood to the Saracens for their galleys, and which excommunicated those who act as helmsmen on their galleys and dhows, and which at the same time decreed that they should be deprived of their property for their transgressions by the secular arm and by the consuls of the cities, and that, if caught, they become the slaves of their captors. Following the example of Pope Gregory, our predecessor of pious memory, we have placed under sentence of excommunication all those who in future consort with the Saracens, directly or indirectly, or who attempt to give or send aid to them by sea, as long as the war between them and us shall last.

But our beloved sons Andreas Donatus and Benedict Grilion, your messengers, recently came to the apostolic see and were at pains to explain to us that by this decree your city was suffering no small loss, for she is not devoted to agriculture but rather to shipping and to commerce. We, therefore, induced by the paternal affection we have for you, and commanding you under pain of anathema not to aid the Saracens by selling or giving to them or exchanging with them iron, flax, pitch, pointed stakes, ropes, arms, helmets, ships, and boards, or unfinished wood, do permit for the present, until we issue further orders, the taking of goods, other than those mentioned, to Egypt and Babylon, whenever necessary. We hope that in consideration of this kindness you will bear in mind the aiding of Jerusalem, taking care not to abuse the apostolic decree, for there is no doubt that whosoever violates his conscience in evading this order will incur the anger of God."

(Trade with the Saracens was too important to interrupt it for war)


"15. For the duties on sugar for that which is imported and exported by land and by sea, the rule commands that one should take per hundred, 5 B. as duty.

16. For the duties per camel's load of sugar the rule commands that one should take 4 B. as duty.

17. For the duty on sugar which is brought by beasts of burden the rule commands that one should take 1 raboin per load as duty."
It is understood that the rule commands that one should take on Nabeth sugar, an internal tax."

According to the "Illustrated History of the Crusades", edited by Jonathan Riley-Smith, a castle at Paphos on Cyprus in 1191 AD. (called Saranda Kolones), probably built by the Hospitallers, had a sugar mill constructed in the castle's basement. This indicates that the sugar was produced as cane in the manor system, processed into sugar at the castle, then shipped into Europe to be sold for cash to swell the Hospitallers coffers.

Meanwhile, Back in Sicily...

Frederick II, Holy Roman Emperor, in the 1220's "encouraged silk and sugar production" says "A History of Sicily" by M.I.Finley, D. Mack Smith, and Christopher Duggan, and "The rural interests of citizens received further protection from royal officials in 1243 over an ancient right to cut canes in the sugar plantations for use in their vineyards and pasture for their tamed bulls" adds Donald Matthew in "The Norman Kingdom of Sicily". In 1231 AD, Frederick II, at Melfi, issued "Liber Augustalis", in which, among other things he included laws to foster cultivation of sugar cane. This was because some part of his revenue came from taxes levied on processed sugar.

Elsewhere in Europe

In England in 1226 AD, Henry III had trouble finding 3 pounds of sugar for a banquet, but by 1259 AD, the commodity was more readily available, at a price of 16 1/2 pence per pound. (See Charts in Table 1 and 2) One is forced to conclude that the shortage of sugar in Henry's time had more to do with the Holiday causing a shortage than the rarity of the product.

As noted in The Book of Spices by Frederic Rosengarten, Jr., in 1264 cassia sold in London for 10 shillings a pound, while sugar at the same time sold for 12 shillings, ginger for 18 shillings, and cumin for 2 shillings." So sugar was about the same price as other spices, at this time, but somehow the perception is that is was a very rare and overly expensive item to have on hand,
although the same perception does not exist for cinnamon, cassia, ginger, or cumin!

According to A List of the Tolls at the Port of Colibre, in 1252, Colibre, a small island off the northeast coast of Spain, and under the jurisdiction of Rousillon in the thirteenth century, gave a list of what tolls were to be charged for what products. Sugar is prominently mentioned. Herein is a small portion of that list:

".......A cargo of mastic---2 solidi
A cargo of gum---2 solidi
A cargo of sugar---2 solidi
A cargo of red dye---2 solidi
A cargo of blue dye---2 solidi
A bundle of leather---2 solidi ......"

Francesco di Balducci Pegolotti, in "The Practice of Commerce", written in Florence between 1310 AD and 1340 AD, wrote of the goods available in the market place. These included powdered sugars of Cyprus, Alexandria, Cairo, Kerak, and Syria. Also lump sugar, basket sugar, rock candy, rose sugar, and violet sugar, from Cairo and Damascus. This is the first marketing of powdered sugar (finely granulated) I have found, though the Sicilian manufacture of it above would strongly suggest it previous to this. Much must have been ground locally at the site of use. The list has "Dots" next to those items which are high cost/low volume or, as they were called "minute spices". It is significant that sugars were not so designated.

The first outbreak of plague swept across England in 1348-49. It seems to have travelled across the south in bubonic form during the summer months of 1348, before mutating into the even more frightening pneumonic form with the onset of winter. It hit London in September 1348, and spread into East Anglia all along the coast early during the new year. By spring 1349, it was ravaging Wales and the Midlands, and by late summer, it had made the leap across the Irish Sea and had penetrated the north. The Scots were quick to take advantage of their English neighbours' discomfort, raiding Durham in 1349. Whether they caught the plague by this action, or whether it found its way north via other means, it was taking its revenge on Scotland by 1350.

It would be fair to say that the onset of the plague created panic the length and breadth of Britain. One graphic testimony can be found at St Mary's, Ashwell, Hertfordshire, where an anonymous hand has carved a harrowing inscription for the year 1349:
"Les Livres de comptes des freres Bonis" includes an account from 1339-1369 AD, in which it states that Bernat Brunet, a provencal merchant of Montauban "owes for one once of Loaf sugar which Frances, his Nephew, took on October 10, for the said Bernat was ill:" the amount of 1 shilling. This price seems very high, since even as far away as England, 11 pence could buy you a full pound, by then. (Maybe this is the origin of the Sugar Pill!), prices cannot be evaluated from a single mention, but rather should be noted over time, with prices adjusted for coinage value changes.

**Important Facts about the Black Death**

*Interesting information and important facts and history of the disease:*

- **Key Dates relating to the event:** Dextrose sugar becomes cheap and plentiful in about 1310. This terrible plague started in Europe in 1328 and lasted until 1351 although there were outbreaks for the next sixty years.
- **Why was the disease called the Black Death?** The disease was called the Black Death because one of the symptoms produced a blackening of the skin around the swellings, or buboes. The buboes were red at first, but later turned a dark purple, or black. When a victim's blood was let the blood that exuded was black, thick and vile smelling with a greenish scum mixed in it.
- **How the disease was spread:** The Black Death was spread by fleas that were carried by rats or other small rodents and people eating dextrose sugar from sugar cane for the first time have massive immune deficiency.
- **The spread of the Black Death followed all of the Sugar Trade Routes to every country**
- **The Black Death of the Middle Ages was believed to have originated in the same spot where cane (dextrose) Sugar came from**
- **Key People relating to the event:** Nearly one third of the population of died - about 200 million people in Europe
- **The 1328 outbreak in China after sugar spread there, caused the population to drop from 125 million to 90 million in just fifty years**
- **7500 victims of the disease were dying every day**
- The Black Death in England raged from 1348-1350
- Why the Black Death was important to the history of England: The population drop resulted in a higher value being placed on labour - the Peasants Revolt followed in 1381. Farming changed and the wool industry boomed. People became disillusioned with the church and its power and influence went into decline. This ultimately resulted in the English reformation

**Black Death Symptoms**
The symptoms of the Black Death were terrible and swift:

- Painful swellings (buboes) of the lymph nodes
- These swellings, or buboes, would appear in the armpits, legs, neck, or groin
- A bubo was at first a red color. The bubo then turned a dark purple color, or black
- Other symptoms of the Black Death included:
  - a very high fever
  - delirium
  - the victim begins to vomit
  - muscular pains
  - bleeding in the lungs
  - mental disorientation
- The plague also produced in the victim an intense desire to sleep, which, if yielded to, quickly proved fatal
- A victim would die quickly - victims only lived between 2 -4 days after contracting the deadly disease

**Black Death Victims in the Middle Ages - Treatments**
The Black Death victims in the Middle Ages were terrified of the deadly disease. The plague held a massive mortality rate between 30 and 40%. Victims had no idea what had caused the disease. Neither did the physicians in the Middle Ages. The most that could be done was that various concoctions of herbs might be administered to relieve the symptoms - there was no known cure. Headaches were relieved by rose, lavender, sage and bay. Sickness or nausea was treated with wormwood, mint, and balm. Lung problems were treated with liquorice and comfrey. Vinegar was used as a cleansing agent as it was believed that it would kill disease. But bloodletting was commonly thought to be one of the best ways to treat the plague. The blood that exuded was black, thick and vile smelling with a greenish scum mixed in it.

- Black Death Treatment: Black Death was treated by lancing the buboes and applying a warm poultice of butter, onion and garlic. Various other remedies were tried including arsenic, lily root and even dried toad.
- During a later outbreak of this terrible plague, during the Elizabethan era, substances such as tobacco brought from the New World were also used in experiments to treat the disease.

**Black Death in England - 1348-1350**
The Black Death reached England in 1348. Bristol was an important European port and city in England during the Medieval era. It is widely believed that Bristol was the place where the
Black Death first reached England. The plague reached England during the summer months between June and August. The Back Death reached London by 1st November 1348. London was a crowded, bustling city with a population of around 70,000. The sanitation in London was poor and living conditions were filthy. The River Thames brought more ships and infection to London which spread to the rest of England. The crowded, dirty living conditions of the English cities led to the rapid spread of the disease. Church records that the actual deaths in London were approximately 20,000. Between 1348 and 1350, killed about 30 - 40% of the population of England which at the time was estimated to be about five to six million. Many people were thrown into open communal pits. The oldest, youngest and poorest died first. Whole villages and towns in England simply ceased to exist after the Black Death.

**Black Death during the Elizabethan Era**

*The Black Death Victims in the Middle Ages - The daughter of the King of England*

The Black Death struck people and took its victims from all walks of society. King Edward III (1312 – 1377) was King of England during the terrible period of the plague. Edward had arranged a marriage for his favorite daughter Joan Plantagenet. Joan was born in February 1335 in Woodstock. Joan was to marry King Pedro of Castille, the son of Alfonso XI and Maria of Portugal. The marriage was to take place in Castille. Joan (sometimes referred to as Joanna) left England with the blessing of her parents. The Black Death had not yet taken its hold in England and its first victims had only been claimed in France in August 1348. Joan travelled through France and contracted the deadly disease. She died on 2 Sep 1348 in Bayonne of the Black Death.

*The Black Death and Religion*

During the Middle Ages it was essential that people were given the last rites and had the chance to confess their sins before they died. The spread of the deadly plague in England was swift and the death rate was almost 50% in isolated populations such as monasteries. There were not enough clergy to offer the last rites or give support and help to the victims. The situation was so bad that Pope Clement VI was forced to grant remission of sins to all who died of the Black Death. Victims were allowed to confess their sins to one another, or "even to a woman". The church could offer no reason for the deadly disease and beliefs were sorely tested. This had such a devastating effect that people started to question religion and such doubts ultimately led to the English reformation.

*Consequences and Effects of the Black Death plague*

The Consequences and effects of the Black Death plague were far reaching in England:

- Prices and Wages rose
- Greater value was placed on labor
- Farming land was given over to pasturing, which was much less labor-intensive
- This change in farming led to a boost in the cloth and woolen industry
- Peasants moved from the country to the towns
- The Black Death was therefore also responsible for the decline of the Feudal system
- People became disillusioned with the church and its power and influence went into decline
The End of the Plague and the spread of sugar

Nostradamus was a healer of sort and he said for people to clean their houses, open the windows and let in good sunshine and clean air. He recommended good foods and exercise. These common sense suggestions helped to end the plague. Also people started to develop tolerance for the dextrose sugar.

In the recipe listings of "Le Menagier de Paris", 1393, sugar in many various forms is listed 72 separate times. Honey by comparison is only mentioned 24 times, and the price for candied orange peel, made with honey, is precisely the same as that for sugared almonds (10 sous/lb).
So, in a quick survey of Europe in the 13th and 14th centuries, sugar was widely available in England, France, Spain, and Italy in powdered form as well as block, in cooking as well as medicinally, and more widely used than honey!

**Spain Takes Sicily**

Things were going well in Sicily. "About 1410 there had been thirty sugar refineries in Palermo alone, and at Syracuse there was a 'gate of the sugar workers'. Special traffic regulations had been needed for the transport of firewood and cane. So valuable was sugar for the economy that the law allowed compulsory purchase of land for it, and water could be taken from whatever source; workers were also bound to the industry by law and were free from arrest during the season when the refineries were working." says Smith's "A History of Sicily."

Spain, in 1416, had taken over Sicily and was determined to make it pay. How? With sugar production and exports to Northern Europe, of course! During the 42 years following the accession of Alfonso in 1416, "On one occasion Alfonso personally seems to have cornered the market in sugar exports to Flanders," Smith tells us. So even with a change in leadership in Sicily, sugar exports only grew. Now the Northern coast cities seem to be regular customers. English recipes demonstrate how much sugar was flowing North.

England, 15th century. Pears in wine and spices Original recipe from Harleian MS 279. "Potage Dyvers" Perys en Composte. Take Wyne an Canel, a gret dele of Whyte Sugre, an set it on the fyre, hete it hote, but let it nowt boyle, an draw it thorwe a straynoure; than take fayre Datys, an pyke owt the stony, an leche hem alle thinne, an caste ther-to; thanne take Wardonys, an pare hem and sethe hem, an leche hem alle thinne, caste ther-to in-to the Syryppe; thanne take a lytil Sawnderys, and caste ther-to, an sette it on the fyre; an yf thow hast charde quynce, caste ther-to in the boyling, an loke that it stonde wyl with Sugre, an wyl lyid wyth Canal, an caste Salt ther-to, an let it boyle; an than caste yt on a treen vessel, lat it kele, and serue forth

If "a gret dele of Whyte Sugre" was used, it can hardly have been THAT rare or expensive. The fourteenth century manuscript quoted below specifies two pounds sugar! of Original recipe from "Goud Kokery":

5. Potus ypocras. Take a half lb. of canel tried; of gyngyuer tried, a half lb.; of greynes, iii unce; of longe peper, iii unce; of clowis, ii unce; of notemugges, ii unce &mp; a half; of carewey, ii unce; of spikenard, a half unce; of galyngale, ii unce; of sugir, ii lb. Si deficiat sugir, take a potel of honey.

Although the 'Si deficiat sugir, take a potel of honey' is often adduced to indicate sugar shortage, I would point out that possible substitutions for elements of a recipe were
common, and were not necessarily related to the scarcity of the items mentioned. (for instance, if you don't happen to have flour to thicken a chicken sauce, says one recipe, you can use eggs to thicken it instead. This didn't mean that flour was less common than eggs!)

**Other Sugar Producing Sites**

In the 1400 's AD, plantations were established in Madeira, the Canary Islands, and St. Thomas. This greatly boosted supply. The Hospitalier castle of Kolossi, in Latin Cyprus was built by Jocques de Milly in 1454 AD, at the center of a sugar producing estate, and next to a sugar factory. At Kouklia a pair of refineries had water wheels to crush the cane. Kilns for boiling the liquid and ceramic molds to crystallize the sugar into loaves/cones. Another factory survives at Episkopi ("Illustrated History of the Crusades"). Sugar production was wide-spread on Cyprus and Sicily, and these weren't even considered the best sources of sugar.

In the "Book of the Wares and Usages of Diverse Contries", an Italian writing in Ragusa in 1458 AD, wrote, "How to know many Wares" where he says that "Rock Candy ought to be white, glistening, coarse, dry, and clean. Loaf sugar ought to be white, dry, and a well compact paste, and it's powder ought to be large and granulated." The quality of these marketed, powdered / granulated sugars seems to have been described as what we can buy currently in our modern markets. "White, dry" and "clean". The perception that all medieval sugar consisted of burnt black cones is a common misapprehension brought on by the experience of those of us who have been part of the Early American historical groups. Do-it-yourself pioneers in America produced some really bad sugars in an effort to be self sufficient, but that should not be projected to our thoughts about Medieval times where industrial production and transport was common. Though some bought the cheaper loaf and saved money by grinding it themselves, powdered sugar was common, and the quality was high.

In 1470 AD, there was a "Society for the Refining of Sugars" in Bologna, which even the wealthy thought worth attending. It was NOT just the industry traders in luxuries, but a large portion of the wealthy had sugar growing on their estates.

In 1493 AD, Columbus carried sugar cane from the Canaries to Santa Domingo, and by the mid-1500's it's manufacture had spread over the greater part of Tropical America. In 1492 Christopher Columbus stopped at the Canary Islands on his famous journey, for rest and provisions for a few days, but ended up staying a month. When he finally left he was given cuttings of sugar cane which became the first to reach the New World. But with sugar cane he brought death and slavery.

Therefore much later Sugar Cane came to be cultivated in the New World, and as a side effect became multi-sourced particularly due to British Colonial policies (you see how this all links up now) and influence throughout the geographical coverage of the empire in the mid 1600s to mid
1700s. This is really the key point along the timeline where sugar, outside Asia, became commonly available and no longer a rare indulgence of the wealthy.

Notably, this was also closely linked to the international slave trade - African slaves became the dominant plantation workers in North America, partly because they turned out to be naturally resistant to Yellow Fever and Malaria, and as a result the British imported over 4 million slaves to the West Indies. At this point (the mid to late 1700s) the Caribbean was the world's largest producer of sugar, and due to high death rates anyway on sugar plantations, there were only 400,000 African people left alive in the West Indies by the time slavery ended.
In 1772 Slavery was declared illegal in England, including overseas slaves not living in England. Lord Chief Justice Mansfield ruled that English law did not support slavery. But today the sugar slavery continues. Poor Blacks are grossly mistreated and paid almost nothing to harvest a deadly product, and this appalling process is rampant.

Later Barbados and the British Leewards were extremely successful in the production of sugar because it counted for 93% and 97% respectively of each island’s exports, largely due to changes in the eating habits of many Europeans.

In "The World of the Guilds in Venice and Europe, c. 1250 - c. 1650", we are told of "...the city's (Antwerp in the 1560's) great luxury industries: tapestries, furniture, sugar, and spices..."

William Harrison, in his 1577 description Of Elizabethan England, (from "Holinshed's
Chronicles") complains of the current high prices....

...in times past, when the strange bottoms were suffered to come in, we had sugar for fourpence the pound, that now at the writing of this Treatise is well worth half-a-crown; raisins or currants for a penny that now are holding at sixpence, and sometimes at eightpence and tenpence the pound; nutmegs at two pence halfpenny the ounce, ginger at a penny an ounce, prunes at halfpenny farthing, great raisins three pounds for a penny, cinnamon at fourpence the ounce, cloves at two pence, and pepper at twelve and sixteen pence the pound. Whereby we may see the sequel of things not always, but very seldom, to be such as is pretended in the beginning. The wares that they carry out of the realm are....

As we can see from the above, when sugar was half a crown for a pound, cinnamon was fourpence the ounce. Imported goods rose and fell with various import laws, but were eminently reasonable in price at all times. SUGAR WAS CHEAPER THAN CINNAMON, AND CINNAMON WAS CHEAP! Also, we can see that in relationship to other commodities, sugar has come down dramatically in price as well. This would perhaps account for all those description from foreign ambassadors about the English having bad teeth!

By the Elizabethian period, the best sugar was considered to be that of Madiera, with those of Barbary (Morocco) or the Canaries a close second.

**New World Sugars Feed Old World Wars**

During Drake's raid on Panama, 1572-73, his crew went up a river at Magdelena called the Rio Grande and a few miles up it saw a Spaniard. When he saw they were English he ran off, and going ashore, they discovered, "many sorts of sweetmeats and conserves, with great store of sugar, being provided to serve the fleet returning to Spain." according to "Sir Francis Drake Revived" By Philip Nichols.

In 1579, the Golden Hind reached Ternate in the Moluccas (the Spice Islands). "The Sea King-Sir Francis Drake and His Times" tells us that Drake befriended Sultan Babu, and received "six tons of cloves" and "quantities of pepper, ginger, rice, bananas, and sugar cane."

Another Source, "Sir Francis Drake-The Queen's Pirate", says, "The king promised to send provisions to the ships, and he was as good as his word. There were rice, chickens, raw sugar, syrup, sugar cane..."

According to Drake himself, in "The World Encompassed", "we received what was there to be had in the way of traffic, to wit, rice in pretty quantity, hens, sugar canes, imperfect and liquid sugar..."

"...in November 1583 Mendoza" (Spanish ambassador to England) "wrote that the adventurers" (William and Richard Hawkins) "were home with a great booty, not only of pearls but of
treasure, hides and sugar, which he believed they had taken from Spanish ships." We have this from "The Age of Drake" by James Alexander Williamson.

In 1585, says "Francis Drake-The Lives of a Hero" of Drake from 2-11 October, "The fleet stayed in the Ria de Vigo, pillaging a few small vessels, including a French ship with sugar and wine from the Azores..."

Sugar becomes Cheap

These New World sugars put pressure on Venetian and Sicilian sugars, whose industries were ruined by cheap slave-produced sugar in the early 1600's. Although sugar has become cheaper in the modern world, it was never too outrageous, as may been seen by TABLE 1. This table lists dates, locations and prices from 985 AD - 1558 AD. On TABLE 2, you will find a chart of the prices in England from 1259 AD - 1593 AD. Both charts are extracts from charts in Deere's monumental work, The History of Sugar. Deere notes that from 1401 AD - 1530 AD, sugar averaged 6.62 times the price of honey. Thus, while it was a bit expensive for peasants, it was easily available to Bughers and Merchant classes. And an item of no consequence to the Nobility. As sugar use increases the cancer and disease rate also increase.

Big sugar has a history of Death, Plague, Immune-deficiency, War, Slavery, Deceit, Cancer, Tooth decay, Obesity and is responsible for much of mankind’s most serious problems. Dextrose sugar has spread across the world doing harm and leaving a wake of disease in its path.
FIG. 33. No other primitive race seems to deserve so much credit for skill in obeying nature's laws as these primitive Aborigines because of the perpetual drought known of much of the land they live in. Half of Australia has less than ten inches of rain per year. Note the magnificent dental arches and beautiful teeth of these primitives. Tooth decay was almost unknown in many districts.

FIG. 34. Wherever the primitive Aborigines have been placed in reservations and fed on the white man's foods of commerce dental caries has become rampant. This destroys their beauty, prevents masturbation, and provides infection for seriously injuring their bodies. Note the contrast between the primitive woman in the upper right and the three modernized women.

Why are these People so Healthy?

Native people eating traditional foods had physical excellence, splendid facial and dental arch forms, and no cavities.
Your Body Cells need Right Handed Sugar Dextrose Known as Glucose. Cancer cells feed on this Glucose. When we eat Dextrose like sucrose we feed the cells too fast, this produces disease and FEEDS THE CANCER cells. Fructose is a laevulose (left handed sugar) which needs conversion and stabilization to become glucose. Fructose in small amounts will Starve the Cancer
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From: A History of Food by Maguelonne Toussaint-Samat 1987, Translated by Anthea Bell 1992, Blackwell Publishers, Cambridge, MA we have:

"In 966 the newly created republic of Venice was already building a warehouse from which sugar was exported to Central Europe, the Black Sea and the Slav countries. The fate and fortune of Venice were founded on sugar and the trade in silks and spices."

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From: A History of Food by Maguelonne Toussaint-Samat 1987, Translated by Anthea Bell 1992, Blackwell Publishers, Cambridge, MA we have:

The Arabs installed the first 'industrial' sugar refinery on the island of Candia or Crete - its Arabic name, Qandi, meant 'crystallized sugar' - around the year 1000....The Arabs also invented caramel.....One of the first uses of caramel was as a depilatory for harem ladies.

============================================================================
Blackwell Publishers, Cambridge, MA we have:

"Around the twelfth century taxes paid on sugar made their first official appearance in the records of the South of France. The civic archives of Narbonne tell us that in 1153 a toll on sugar was introduced, called the lende: eight deniers per quintal if the goods arrived by sea, 14 deniers if they arrived by land. Marseilles instituted the lesde in 1228, and the Count of Provence added sugar to his toll tariff 25 years later. A distinction was drawn between sugar-loaves and powdered sugar.

Iran, who presumably learned it from India, brought rum to Europe for the first time via Marco Polo.

From: A History of Food by Maguelonne Toussaint-Samat 1987, Translated by Anthea Bell 1992, Blackwell Publishers, Cambridge, MA we have:

"Marco Polo, dictating his memoirs in his Genoese prison to his editor Rusticiano of Pisa, mentioned among the many marvels of his book a beverage calculated to displease today's ayatollahs. 'They make very good wine of sugar, and many become drunk with it.' This was in the fourteenth century, and is the first recorded mention of rum.

It should be remembered that alcohol and alembic are words of Arabic origin, although the Koran forbade alcohol and all fermented drinks. The alembic was a still, and was already known to the author of the first part of the Roman de la Rose, Guillaume de Lorris, around 1236."

According to "The Monks of War" by Desmond Seward, 1972,

In the Jerusalem of the 1120's,

"Nobles wore turbans and shoes with upturned points, and the silks, damasks, muslins, and cottons that were so different from the wool and furs of France.....They ate sugar, rice, lemons, and melons...."


"Sugar and spices played an important part in food in the Middle Ages....as early as the reign of Henry II sugar also was being imported to serve the purpose of sweetening.....by 1264 the price had dropped to 2s./lb....and by 1334 it could be bought for 7d.

Prices remained very similar to this until well into the sixteenth century, although the actual
figure depended on the degree of refinement. Very large amounts of sugar were used by the royal household before the end of the thirteenth century (6,258 lb in 1288), and from then on increasing amounts were imported. One ship alone, which entered Bristol from Lisbon in 1480, carried nearly 10 tons."


"Sugar was imported from all over the Mediterranean, as were the luxuries that an increasing demand for sweet things encouraged. These included 'sugre candi' brought into London in 1421 from Italy, 'citonade' (candied lemon or orange peel) and large quantities of 'succade' (fruit preserved in sugar syrup), the latter two both brought on one of the Venetian state galleys in 1481. Considerable amounts of treacle, as well as violet and rose sugar, were brought in too. The sugars were more expensive than regular sugar and were partly used as medicine. Ordinary sugar was available in varying degrees of fineness, although most of it came in the form of 'loaves', which varied in size from about 1 lb. to about 20 lb."

(His sources are: Salzman, English Trade in the Middle Ages(1931), p. 419; H.S. Cobb (ed.), Overseas Trade of London: Exchequer Customs Accounts 1480-81 (1990), pp. 46-50)

"Spanish wine was imported widely throughout the whole of the Middle Ages. It's strength particularly was appreciated, and in the sixteenth century it became tremendously popular. The resulting increase in imports was in the form of what was designated 'sack' (or 'seck'), a wine unknown until then. Sack seems to have been dry Spanish wine, given this name to differentiate it from the sweeter wines from elsewhere, although the name was later extended to wines from many other places-sherry sack, Madeira sack and Canary sack (this latter was sometimes known as sweet sack) - all of which were imported. Sack was frequently drunk with added sugar. "

(His source: Simon, Wine Trade, Vol. 2, pp. 244-52; Wilson, Food and Drink, p. 340; Hieatt and Butler, Curye on Inglysch, pp. 142-3, 148, 149-50, 386; C. Innes (ed.), Ledger of Andrew Halyburton (1867), p. lxxiv.)
“The letters are full of commissions for the purchase of goods abroad, of various kinds.
Goshawks, onion seed, Gascon wine, pickled Maas salmon, fur of 'boge' (lambskin), mink and
other furs, 'chambering' (i.e., chamber hangings, tapestry) Holland cloth, saddles, stirrups,
horse-furniture generally, armour, sugar loaves, salt fish, ginger, saffron, Louvain gloves, Calais
packthread. For the purposes of their trade they bought Arras, Bergen (Mons), Elron (in
Bretagne) and Normandy canvas for packing wool.

http://www.huntington.org/BotanicalDiv/Timeline.html
1531 A decree issued in Castile under the Spanish Crown allowed good terms for loans to
allow purchase of slaves by settlers for establishment of sugar mills. (Thomas, 1999)

http://www.huntington.org/BotanicalDiv/Timeline.html
1541 A book to promote cooking with sugar was available in Venice. Later Nostradamus wrote the
first French book on this topic. (Root, 1980)

http://www.huntington.org/BotanicalDiv/Timeline.html
1493 During Columbus’ second voyage he apparently introduced sugar cane to Santo
Domingo; a settler named Aguilón was reported to have harvested cane juice by 1505 (Thomas,
1999). By 1516 the first processed sugar was shipped from Santo Domingo to Spain. Soon
afterward, Portugal began importing sugar from Brasil. (Sugar cane would become the driving
force for the slave trade.) Columbus also carried seed of lemon, lime, and the sweet orange to
Hispaniola. He returned to Europe with pineapple. (Viola & Margolis, 1991)
# The Glycemic Index of Selected Foods

<table>
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<tr>
<th>Left-handed Section</th>
<th>LOW GLYCEMIC FOODS</th>
<th>MEDIUM</th>
<th>HIGH GLYCEMIC FOODS</th>
<th>Right-handed Section, mostly processed foods under all columns</th>
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**Eat the foods in Green**  
**Avoid the foods in Red**