

Various Online Resources for Creating Community & Urban Gardens in Haiti

“There are no gardening mistakes, only experiments.”

Part of the back yard / community garden movement includes a fundamental belief in the use of forks over knives. The Haitian diet is remarkably unvaried; part of the solution is to help Haitian experiment in food creativity.

When gardening - Follow the sun

Stay close to water / be aware of torrential rain / flooding

Start w/ great soil (compost, compost, compost)

Consider containers

Pick the right plants (tons of info below on this)

Understand the climate:

Haiti consists of a tropical climate with average rainfall around 54 inches a year. The country receives the vast majority of its water during two rainy seasons that last from April to June and then from October to November. The dry seasons therefore last from December to March and then again from July to August. Being a tropical environment, temperatures rarely ever fall below 70 degrees Fahrenheit.

Humidity is a major environmental factor that will affect the many different kinds of species of crops and fruits that thrive in Haiti. Many fruits and crops are able to adapt to this tropical and humid environment quite well. Bananas for example would grow very well in Haiti because of the humid and hot conditions that it is normally grown in. The eastern to central regions of the country receive larger quantities of rainfall than the other regions. The east and central regions of Haiti may therefore be the best regions to grow crops for consumption because of the large abundance of waterfall that is present there.

Some regions of the country are also considered arid throughout the year. Those areas should be avoided because of the lack of water.

<http://www.haitibio.com/index.php/2642>

<http://www.southtravels.com/america/haiti/weather.html>

65% of Haiti consists of rough and mountainous terrain. Extensive deforestation and soil erosion over the past few decades has eased the ability to grow crops. With several rivers such as the Riviere l'Artibonite and the Massif du Nord oriented in different regions of the island, attaining water for crops would not be of a major concern. Haiti also lies in the middle of a hurricane belt during the months of June through October. Crops that require very specific and delicate climate and land conditions would therefore not fare well in this type of environment. Occasional flooding, earthquakes and even droughts can even occur. Several sources have

shown that approximately 20.32% of the land is arable. 12.7% of Haiti is mainly used for growing permanent crops, while the remaining 66.98% is used for other purposes such as housing.

These food crops have been growing in Haiti for years. The seeds, which must be bought to grow the crops are also relatively inexpensive. The environmental conditions in Haiti have also been shown to be optimal for the growth of these food crops.

Broccoli (CK) Two common subspecies of broccoli exist, which are known as "sprouting" and "cauliflower broccoli". The sprouting broccoli is the traditional kind that is typically found in a supermarket with the green flowers on top and green stalk. The cauliflower broccoli contains a white curd, which closely resembles that of cauliflower, hence its name. Surprisingly, broccoli is a cool weather vegetable, typically grown in the north and central regions of the United States from mid-august to mid-march. Broccoli is usually eaten steamed or cooked, but can also be eaten raw. Nutritionally, broccoli is very high in many essential vitamins and minerals that are required in the human diet, which include vitamin C, fiber, selenium, etc. Seedlings should be planted around 1 inch apart and about 2 or 3 feet apart in rows. Broccoli is also typically a fairly hardy vegetable, being able to grow in a wide array of environmental conditions. They typically grow best in environmental temperatures between 65 and 75 degrees Fahrenheit. Well drained, sandy soil are also the optimal soil conditions for growing this food crop. Broccoli also requires a large daily amount of water to sustain its nutritional requirements. Typically the soil must be flooded with at least 6 inches of water daily to satisfy it.

<http://edis.ifas.ufl.edu/mv031>

<http://en.wikipedia.org/wiki/Broccoli>

http://www.organicgardentips.com/how_to_grow_broccoli.html

<http://www.gardeningknowhow.com/vegetable/how-to-grow-broccoli.htm>

Beets (CK) Several known subspecies of beets are available on the market for human consumption. The most popular subspecies consumed by humans is the purple-colored beetroot also known as the garden beet. People have utilized beets in many cooking recipes, which include boiling them, pickling them, or even adding them raw into a salad. With a wide growing range in the United States from the northeast, to the California coast to even Texas, beets can withstand a wide range of temperatures and growing conditions. They are typically a cold temperature food crop, not found to grow in tropical environments. Beets grow the most efficiently in loose, rich soil that has a slightly acidic pH (6 - 6.8). Beets are typically planted in late august / early September, which is around 1 - 2 months before the first frost of the year. Seedlings should be planted approximately 3 inches apart and 12 - 18 inches apart in each row to ensure there is ample growing space once they reach maturity. The beets should also be exposed to full or partial sunlight as well as adequate levels of water. An insufficiency in either sunlight or water will cause the beets to dry out or die of malnutrition.

<http://en.wikipedia.org/wiki/Beets>

<http://plants.usda.gov/java/profile?symbol=BEVU2>

http://www.harvestwizard.com/2009/02/how_to_grow_beets.html

Onions (CK) Onions are a diverse species, almost 500 different subspecies. Onions are very beneficial to consume in the human diet, because they contain adequate levels of carbohydrates, protein, sodium and calcium. Although onions can withstand a wide range of temperatures, they are typically grown in warmer conditions usually lasting from mid-march until late august/early September. When planting onions seeds, one should take into account its size once it reaches maturity. Farmers therefore usually recommend planting each onion seed about two and a half fully mature plants apart from each other. Onions have been found to be used in a wide variety of dishes within the cooking industry. A wide array of cooking techniques can be utilized to prepare and serve onions, which include eating them raw in salads, grilling them, pickling them, etc. When planting seedlings, they should be placed approximately 1 inch apart from each other to ensure they have enough growing space once they reach maturity. Onions are typically a warmer level food crop that can be planted as early as mid-march. Mid-April is usually the optimal time period to begin growing these vegetables. Onions in general are not particularly picky about what kinds of soils they will grow in. Soils can range anywhere from sandy looms to heavy clay. Adequate levels of sunlight and water must be provided to ensure the onions receive nutrients.

<http://en.wikipedia.org/wiki/Onions>

<http://www.selfsufficientish.com/onion.htm>

<http://www.gardeningpatch.com/vegetable/growing-onions.aspx>

Rice (CK) Rice was a large food crop grown in mass quantities by peasants in the 1980s. It is even estimated that approximately 123,000 tons of rice was cultivated from 1980 to 1987. Rice is a very stable crop, able to grow quite efficiently in tropical environments. The traditional method to grow rice efficiently is to flood a field with large quantities of water after planting the seedlings. Flooding the field also prevents the growth of weeds and pest plants that could potentially compete with the rice for nutrients in the soil. With Haiti's large abundance of waterfall in the rainy season, growing rice would be an ideal food crop to attempt to irrigate. Deep water rice may be the best type of rice to grow in Haiti because it typically grows near rivers and other large water sources. It is also able to withstand the rainy and dry seasons of Haiti. Since a large majority of Haiti has been deforested is considered to be arable land, paddy or irrigated rice may be another type of rice that could be grown.

<http://worldinfozone.com/country.php?country=Haiti>

<http://www.motherearthnews.com/Organic-Gardening/Growing-Rice-How-To.aspx>

<http://www.edubook.com/how-to-grow-rice/5524/>

Sweet Corn (CK) Corn also known as maize is a very common food crop grown in Haiti. In the 1980's corn was the most abundant food crop grown in Haiti. More

than 220,000 hectares of land were used to grow corn in 1987. It is also intolerant to cold temperatures, which makes Haiti an ideal country for it to be grown year round. If attempted to be grown at colder temperatures, the cornstalks will not sprout. Sweet corn is the specific type of corn that is consumed by the vast majority of the population. In order to sustain this strain of corn, approximately 76 grams of water are required per 100 g. Other nutritional requirements such as protein, calcium, zinc, vitamins, iron, magnesium, etc. must be sustained in the soil in order to produce and maintain healthy ears of corn. Sweet corn requires soil temperatures of at least 60 degrees Fahrenheit to grow properly. Sufficient levels of water must be available for the corn to grow properly. Large quantities of nitrogen and moisture must also be present in the soil. Seeds should also be planted 12 to 15 inches apart from each other in order to prevent competition for nutrients in the soil. By planting the corn seeds in rows and columns, they will then be able to wind-pollinate each other.

<http://worldinfozone.com/country.php?country=Haiti>

<http://best-fit.hypothesis.angelfire.com/maizejkarl/MaizeNotDay-Neutral.html>

<http://www.coopext.colostate.edu/4dmq/VegFruit/corn.htm>

Sweet Potatoes (CK) Sweet potatoes are warm weather crops that will do very poorly if attempted to be grown in cold climates. That said, they're a perfect plant for Haiti: easy to grow, tolerant, few diseases/pests. Sweet potatoes can come in a variety of colors including the common orange, yellow and even purple. They prefer full sunlight but can also tolerate partial shade. They do not tend to grow very well in cold weather. Most commercial gardening websites suggest that the seedlings should be planted immediately after the last frost of the year has disappeared. They also tend to grow best when placed in rows so that it keeps the soil warmer and well rained. The soil where the sweet potatoes are grown should be kept fairly warm at around 65 to 70 degrees Fahrenheit. Sweet potatoes love long and warm growing seasons. They are therefore found growing in many farms in the southern United States such as North Carolina and Louisiana. To ensure that every sweet potatoes plant does not compete for nutrients within the soil, seedlings should be planted approximately 12 – 18 inches apart from each other and 3 – 4 feet between rows. Sweet potatoes also tend to not do well when competing against weeds for nutrients in the soil. It is therefore best to plant them in an area free of any other species of plants that could possibly compete with the sweet potatoes. The Beauregard is the most common and hardy of all the different varieties that are available. It contains the popular dark orange flesh skin that is traditionally exhibited.

<http://worldinfozone.com/country.php?country=Haiti>

<http://www.hobbyfarms.com/crops-and-gardening/growing-sweet-potato-14925.aspx>

Planting Sweet Potatoes

- Prepare the soil with no-till techniques such as just turning over the grass via a shovel as part of a strategy to generate an optimal harvest.
- The best way to grow sweet potatoes at first is from slips. Slips are sprouts that are grown from stored sweet potatoes. You can buy slips from garden centers, nurseries, local farmers or on-line
- At the garden, create raised soil beds 6 to 8 inches tall and about 12 inches wide. Use fertile, well-drained soil.
- Plant the slips 12 to 18 inches apart in the bed, after the last spring frost date.
- Plant the slips deep enough to cover the roots and about 1/2 inch of the stem. Water the slips with a starter solution that is high in phosphorous, then water generously for a few days to make sure that the plants root well
- Based on soil analysis, evaluate the need for treating potatoes 3 to 4 weeks after transplanting with 3 pounds of 5-10-10 fertilizer per 100 feet of row. If you have sandy soil, use 5 pounds.
- Hoe the beds to keep weeds down. Remember to reshape the beds with soil or mulch.
- To extend the harvest, after a few weeks of growth, clipping a vine at the length of about five leaf branches and press the clipping into a new, prepared soil area as a new planting
- Remember to keep the potatoes watered as the plants take root but watering can be reduced as the plants mature to avert rotting. If you are planning to store some of the potatoes, do not give the plants too much extra water late in the season.

Harvesting and Storing Sweet Potato Crop:

- After two months, a selection of leaves can be harvested every 10 to 15 days, being mindful of not harvesting too many so there will be a significant amount of leaves remaining to enable the growth of the potatoes. In warmer climates,

generally all greens (tops) may be harvested at least six times a year – the end of April, the end of May, the end of June, the end of July, the beginning of September and the end of October.

- You can start digging up the potatoes as soon as they are big enough for a meal. Often, this is three to four months from when you planted the slips. The leaves should have started to yellow, but you can leave them in the ground up until the fall frost.
- Insert a pitch fork type device below ground, 4 to 6 inches deep in the soil, a spade fork is useful when digging up the potatoes.
- Handle the potatoes carefully because they bruise easily.
- After digging up the potatoes, shake off any excess dirt but do not wash the roots.
- If you want to store sweet potatoes for an extended period of time, you must cure them. Curing potatoes allows a second skin to form over scratches and bruises that occur when digging up the potatoes. To cure, keep the roots in a warm place (about 80°F) at high humidity (about 90%) for 10 to 14 days. For best curing, make sure that the potatoes are not touching one another.
- After curing, throw out any bruised potatoes, and then wrap each one in newspaper and pack them carefully in a wooden box or basket.
- Store the sweet potatoes in a root cellar or other place with a temperature of at least 55°F. The ideal temperature range is 55° to 60°F.
- The potatoes should last for 6 months. When removing from storage, remember to be gentle; do not dig around or else you will bruise the potatoes.

Preparing for the Next Harvest and Sharing the Wealth with Others:

After the harvest, you can create more cuttings from using some of the harvest as beginner roots. Using this Storage, Sand and Sprouting technique, 40 small potatoes can yield 1500 cuttings. Follow this information: <http://sweetpotatoknowledge.org/seedsystem/TRIPLE%20S%20SYSTEM%20SIDE2%20ENGLISH.pdf>

Bananas (CK) Bananas are a very common fruit found in Haiti that are mainly grown for human consumption. Banana growth is limited to tropical or near tropical regions of the world because of their inability to grow in cold environments. Temperatures must be stable and stay within a range of approximately 80 degrees F (26.67 C) in order for the fruit plant to grow optimally. Extended dry seasons more than three months are also not ideal for the growth patterns of this plant. They also tend to like environments that are very humid throughout the year. If temperatures were to fall rapidly, the banana fruit skins would turn grey and the leaves would turn yellow. Despite being very sensitive to temperature, bananas are able to grow in even the poorest of soil conditions. Specific nutritional requirements in the soil must be met in order to sustain them however. Adequate levels of nitrogen and potassium must be present in the soil. Minimal wind conditions would also be beneficial. Large and gusty winds may blow over the banana trees due to their large leaf stalks. By growing banana trees in large quantities, one can reduce unfavorable wind conditions as well as producing humidity. By growing several banana trees within close proximity to each other, one can also increase the amount of humidity in a particular area of land. Warm temperatures throughout the year are also required for this tropical plant because of their extremely slow growth rate of nine months. Bananas would therefore be able to thrive in Haiti's mountainous and tough terrain.

<http://www.hort.purdue.edu/newcrop/morton/banana.html>

<http://worldinfozone.com/country.php?country=Haiti>

<http://www.tropicalpermaculture.com/growing-bananas.html>

Tomatoes (CK) Tomatoes are one of the most common vegetables found in the home garden. Tomatoes tend to thrive best in well-drained soils. They are another food crop that does not do well in colder environments. They tend to grow best in temperatures at around 65 degrees Fahrenheit or higher. The plants may grow at temperatures slightly below this temperature, but they will not sprout fruits until the temperature rises. If tomatoes were planted in too cold of an environment, they would change color from red to purple. If not fed with large quantities of water, they will dry out and die. Leaf-end roll, non-blossoming and other unfavorable conditions will arise without adequate amounts of water supply. Due to Haiti's tropical and humid environment, tomatoes grown there may require more watering than in colder environments. Water supply should not be a major problem however because of the large number of fresh water sources scattered throughout the country. Tomatoes also require copious amounts of sunlight (8 hours or more a day). The sunny and tropical climate year round makes Haiti a perfect environment to grow tomatoes.