

A photograph of a field of amaranth plants. The plants have large, green, heart-shaped leaves and several long, drooping panicles of small, vibrant pink and purple flowers. In the background, there are more plants, some with yellow flowers, and a white building with a red roof under a clear blue sky.

Amaranth Grain

An ancient legend, or the crop of
the future?

Outline

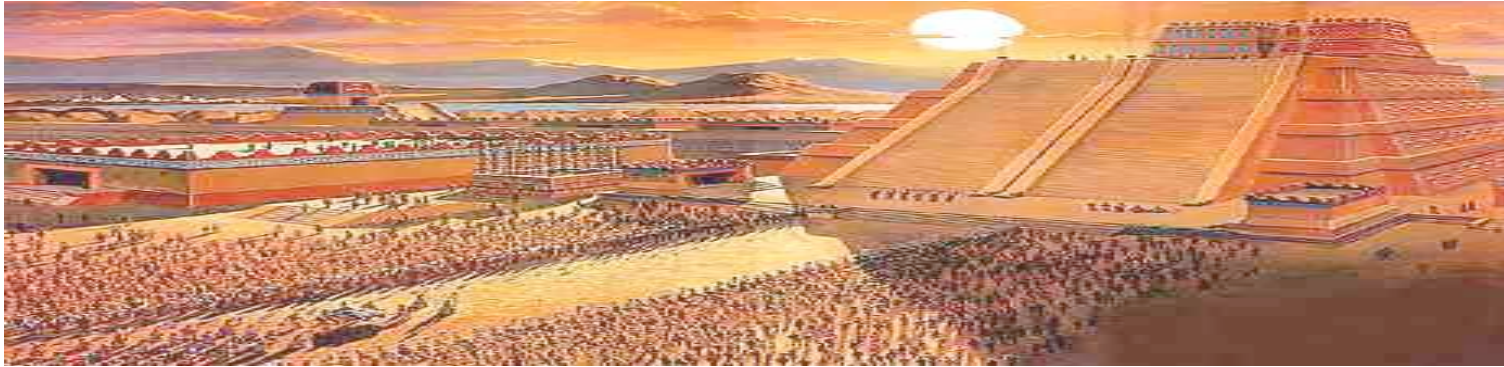
- Historical context
- Domestication
- Physical characteristics and their importance
- Ramifications for future cultivation
- An alternative study

Quick Facts

- ⇒ Family Amaranthaceae
- ⇒ There are over 60 species, most being weedy with only 12 used for cultivation
- ⇒ The three main cultivated species are
 - Amaranthus caudatus*
 - Amaranthus hypochondriacus*
 - Amaranthus cruentus*
- ⇒ Seeds are used as grains and the leaves are used as vegetables
- ⇒ Each plant can contain up to half a million seeds
- ⇒ Amaranth is 30% higher in protein than other grains



Historical Context



- Grown by the Aztecs 5,000-6,000 years ago
- Used as a food source and a religious resource
- Over 20,000 tons of amaranth were cultivated and given to the Emperor Montezuma as an annual tribute to his health
- Seeds were ground with honey or human blood to create religious sculptures and gifts for the gods
- Amaranth mysteriously disappeared after the Spanish conquest perhaps because of their attempt to eradicate remnants of Aztec culture

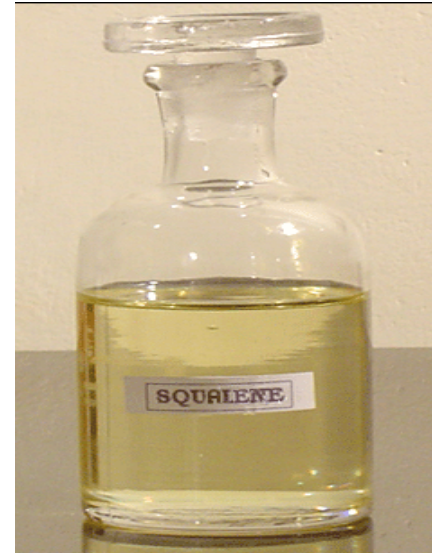
Unique Nutritional Content



- Protein=
 - High in amino acid lysine but low in leucine. This is the opposite of most other grains
 - Thus mixing would form an almost perfect protein

Other Potential Benefits

- Good ratio of unsaturated fat to saturated fat that is beneficial for hypertension and coronary heart disease
- Squalene
- Ethanol
- Cattle feed



Amaranth and Photosynthesis


- Carbon 4 compound serves to suppress the loss of CO_2
- This also prevents transpiration and allows for water conservation
- Thus there is potential for amaranth to be highly effective in dry and hot climates





Pro's and Con's of Cultivation vs Other Grains

Pro's

- 
- ⇒ Little necessary attention once amaranth seeds begin to mature
 - ⇒ High in protein
 - ⇒ Propensity to grow in unique climates
 - ⇒ High prices

Con's

- ⇒ Problems with indehiscence
- ⇒ Lack of effective herbicides
- ⇒ High transportation costs due to low demand
- ⇒ Shift in high prices

An Alternative to Mass Cultivation





Incorporate Amaranth Into Your Diet

Amaranth Candy

Ingredients:

6 cups of water
2 cups of amaranth flour
2 tablespoons of sugar
7 peaches
1 cinnamon stick

Directions:

1. Combine the water, cinnamon and pieces of peaches in a pot. Boil for 15 minutes.
3. Mix the amaranth flour in cold water and stir it into the pot until it is well mixed
4. Allow it to boil for 10 more minutes stirring slowly to prevent the mix from burning
5. Add the sugar and remove from the stove. Serve cold.

Lentils with Amaranth

Ingredients:

.5 kg of lentils
half an onion chopped
2 tomatoes cut into pieces
1 cup of amaranth flour
2 liters of water
1 garlic clove minced

Directions:

1. Boil the lentils in water until they are soft.
2. Fry the tomato with the garlic and onion until the onion is transparent
3. Mix the amaranth flour in a cup of cold water and add it to the lentils
4. Combine the lentils with the tomato, garlic, and onion. Add salt and continue to cook for about 5 more minutes