

CROPS IN CRISIS: CASSAVA

ORIGINS AND USE OF CASSAVA

Thought to have its origin in Brazil and Paraguay, cassava is one of the leading food and feed plants of the world. It ranks fourth among staple crops, with a global production of about 160 million tons per year. Most of this is grown in three regions: West Africa and the adjoining Congo basin; tropical South America, and south and Southeast Asia. The young tender leaves are used as a potherb, containing high levels of protein and vitamins C and A. The leaves are prepared in a similar manner as spinach, with toxic compounds eliminated during the cooking process.

Cassava is mainly used for human consumption, and less for animal consumption and industrial purposes, though this may vary by country. The roots are rarely eaten fresh, and instead are usually cooked, steamed, fried or roasted after drying or fermenting. It is advisable to peel, boil, grind, cut, or dry the roots in order to diminish the contents of cyanogenic glucosides. All plant parts contain cyanogenic glucosides with the leaves having the highest concentrations. In the roots, the peel has a higher concentration than the interior. In the past, cassava was categorized as either sweet or bitter, signifying the absence or presence of toxic levels of cyanogenic glucosides. Sweet cultivars can produce as little as 20 mg of HCN per kg of fresh roots, while bitter ones may produce more than 50 times as much. The bitterness is identified through taste and smell.

Other common names for cassava are yuca, tapioca and manioc.



WHY IS CASSAVA A “CROP IN CRISIS”?

Cassava represents a significant source of food and income to hundreds of millions of farmers and consumers around the world, and especially in Africa. As it is an important industrial crop there is naturally great concern that serious food shortages may result and poverty worsen if disease were to wipe out this crop.



Experts say the spread of disease could significantly decrease cassava production and threaten the diets of at least 300 million people. The disease responsible for this potential disaster is the Cassava Brown Streak Disease (CBSD), which is transmitted by insects. It is believed that rising temperatures linked to global climate change is one factor causing the increase in numbers of insects which carry and transmit the disease.

CBSD was first identified in East Africa in the 1930s. It is deceptive, because an infected plant's leaves may continue to look healthy while the roots beneath are being destroyed. It is only when the roots are dug up, and brown streaks discovered, that farmers know their crop is infected.

NUTRITIONAL INFORMATION ABOUT CASSAVA

Cassava provides a major source of calories for poor families because of its high starch content. With minimum maintenance, the farmers can dig up the starchy root of the cassava and eat it six months to three years after planting. In Africa, people also eat the leaves of the cassava as a green vegetable that provides a cheap and rich source of protein and vitamins A and B. In Southeast Asia and Latin America, cassava has also taken on an economic role. Various industries use it as a binding agent because it is an inexpensive source of starch.

Cassava flour is used to make cookies, quick breads, loaf breads, pancakes, doughnuts, dumplings, muffins and bagels. Cassava extracted juice is fermented into a strong liquor called kasiri. The peeled roots of the sweet variety are usually eaten cooked or baked.



The juice can be concentrated and sweetened until it becomes a dark viscous syrup called kasripo (casa-reep). This syrup has antiseptic properties and is used for flavoring.

FUN FACTS ABOUT CASSAVA

- The cassava plant has large green leaves that are edible; however, the long brown vegetable that we eat is the "tuber," which grows underground.
- Cassava can spoil quickly after harvest; some varieties will go off in just a few days.
- Never eat cassava raw! It contains harmful toxins, concentrated in the outer skin. Peel it thoroughly, removing all of the brown skin and cook it appropriately.
- The pearls in bubble tea are made from moistened tapioca (cassava) flour by forcing it through a sieve.
- Cassava makes really good chips! Peel the cassava, slice it into large sections, boil until soft, break into chip sized pieces, then deep fry.
- Fermented cassava is popular in Indonesia and is used to make sweets and desserts.

CROPS IN CRISIS: A ROLE FOR BIOTECHNOLOGY?

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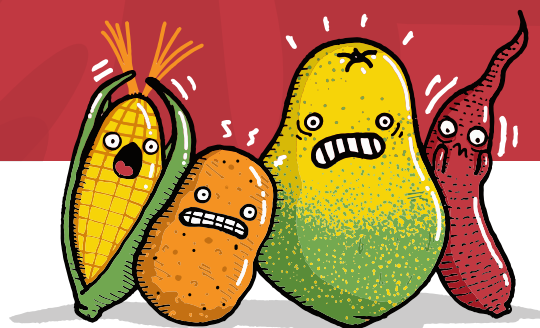
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