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News Feature

With Time Running Out, Scientists Attempt Rescue of African Vegetable Crops

A Victim of Urbanization and Neglect, Many Species May Be Lost

Researchers call it "African spinach," a kind of shorthand for hundreds of green leafy vegetables that are a mainstay of traditional African diets. Eaten largely in rural areas, African spinach provides millions of African consumers with the vitamins, nutrients, and minerals needed to maintain health and fight off deadly infections. Included are crops with names such as *Garden Rocket*, *Cats Whiskers*, and *Garden Huckleberry*.



Traditional Foods Rediscovered
Source: IPGRI

Botanically, African spinach encompasses dozens of nightshade and legume species, and scores of cucumbers, pumpkins, and melons. Many are grown for their leaves as well as for their fruits.

Scientists fear that many of these important vegetables are fast disappearing, however, leaving behind just a fraction of the most popular varieties and a growing dependence on foreign vegetables that are less nutritious and more dependent on pesticides and fertilizer.

Symbols of Strength

"There are lots of reasons to be concerned about Africa's green leafy vegetables", says Patrick Maundu, a Kenyan ethnobotanist who studies the relationship between plants and people.

"Traditional vegetable crops are not only part of our rituals, they are used to fend off malaria, help nursing mothers build up their milk supply, and assist rural communities to survive long periods of drought," he says.

Maundu knows from personal experience how important African vegetables can be. "At the age of six, I was sent out with the boys in my village to take care of livestock. It was up to us to find food and so we quickly learned to identify edible plants."

Maundu remembers that the older boys taught the younger ones which plants tasted best, which ones could be used to treat injuries and illnesses, and which ones to avoid. "That's where I got my early training as an ethnobotanist," he says.



Harvesting Greens
Source: IPGRI



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It was the women of the village, however, who were the real experts, he says. His grandmother, now 101, began teaching him about African leafy greens at an early age. "I remember her telling me is that after the famine of 1928-29, people were so desperate for food that they would eat just about anything. To find out if a plant was edible they would see if baboons would eat it. If they did, then the women of the village would try it, and then kids." "The men," he says with a smile, "were always last."

"I didn't realize it at the time, but it was really the women of the village who made sure that these crops survived. Women are responsible for the family food supply and they're the ones who value traditional leafy vegetables the most."

Race Against the Clock

Today, Maundu is a member of a team of Future Harvest scientists trying to conserve Africa's traditional vegetable crops. Working with national scientists in Cameroon, Kenya, Senegal, South Africa, and Zambia, he and his colleagues are helping to ensure that Africa does not lose its traditional vegetable crops, a process that is now occurring at an alarming rate.

Maundu estimates that there are more than 45,000 species of plants in Sub-Saharan Africa, of which about 1,000 can be eaten as green leafy vegetables. "Many of these are unknown to us and many more are falling into disuse or are simply being lost.

For example, few scientists have ever heard of *Cats Whiskers*, a crop that is well known to village women, he says. By tradition, pregnant women grow *Cats Whiskers* to help regain blood lost in childbirth. It is also used to treat an AIDS-like disease called *Chira*, which is believed to be a curse put on those who are unfaithful to their spouses. Maundu speculates that *Cats Whiskers* may help to boost the performance of the body's immune system.

There are also many unusual types of *Amaranthus*, which warrant attention, he says. One variety produces up to 40 tons per hectare (16 tons per acre), an extraordinary amount for a green leafy vegetable. *Amaranthus*, a western health food store favorite, is grown mainly for its leaves, but also produces small nutritious seeds.

Neglect Cited

Agricultural research and development organizations have neglected African vegetables for a variety of reasons and have been slow to conserve them, adds Geoffrey

http://www.futureharvest.org/earth/leafy_feature.shtml

Leafy Greens
Source: IPGRI



Researchers Survey
Traditional Crops
Source: IPGRI



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Hawtin, director general of the International Plant Genetic Resources Institute (IPGRI), one of the 16 Future Harvest Centers.

"There are literally hundreds of species to deal with and many of these crops are found only in remote locations. Moreover, most of them don't fit the conventions that scientists are accustomed to dealing with in traditional conservation programs," he says.

"That's beginning to change, however," Hawtin says.

Since 1996, researchers from five countries — working with Maundu and other Future Harvest scientists — have been busy collecting and analyzing African Spinach varieties in a program that emphasizes not only conservation, but also how traditional vegetables are used and marketed. "The goal," Hawtin notes, "is literally to prevent Africa's leafy greens from disappearing."

The work is arduous and involves quantifying the health and economic contributions of African vegetables and convincing government officials that they are worth saving.

It also involves producing improved varieties through what scientists call "participatory plant breeding," a process in which scientists and farmers produce traditional plant types that significantly outperform the varieties they normally grow.

"It's a complicated process," Hawtin says, "but conventional means for conserving crops, such as storing them in genebanks, don't apply in the case of African leafy greens. There are simply too many of them to deal with and the countries involved have neither the facilities nor the funds to do the work."

"The only way to save them is to make sure they're grown and available commercially," he says.

"Among other things that means bringing women into the equation and making sure that their needs are not only recognized, but acted upon. For centuries women have been the ones who've played the lead role in conserving Africa's leafy vegetables."

"In the future, it is likely that they'll also be the ones who will help them to survive," Hawtin says.

Funding for the African leafy greens initiative has been provided under a grant from the Government of the Netherlands, Directorate General for International Cooperation, Ministry of Foreign Affairs.

The International Plant Genetic Resources
http://www.futureharvest.org/earth/leafy_feature.shtml

Institute (www.ipgri.org) is dedicated to advancing the conservation and use of genetic diversity for the well being of present and future generations. Founded in 1974, it is the world's largest international institute dedicated solely to the conservation and use of plant genetic resources. IPGRI concentrates on supporting the work on plant genetic resources conducted by national research and development systems in developing countries. It also has a special responsibility for bananas and plantains.

Future Harvest (www.futureharvest.org) is a global, nonprofit organization that builds awareness and support for food and environmental research for a world with less poverty, a healthier human family, well-nourished children, and a better environment. Future Harvest is an initiative of 16 food and environmental research centers that receive funding from the Consultative Group on International Agricultural Research (www.cgiar.org).

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