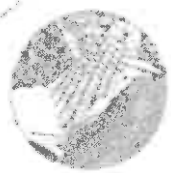

Research & Impact: Areas of Research:
Maize

Maize *(Zea mays L.)*

Description:

Maize is grown at latitudes varying from the equator to slightly above 50 degrees north and south, from sea level to over 3000 meters elevation, in cool and hot climates, and with growing cycles ranging from 3 to 13 months. A versatile crop, it has tremendous genetic variability, which enables it to thrive well under lowland tropical, subtropical, and temperate climates. It is grown in more countries than any other cereal and it is the second [third] most important cereal crop in the world, after wheat and rice. In the developing world, maize ranks third, after rice and wheat.

Maize Time Line:

1492: Columbus encounters maize in Cuba and carries yellow flint landraces back to Spain.

1493-1593: Maize reaches Africa and Asia. In Europe, the crop graduates from botanical curiosity to kitchen-garden vegetable. According to some accounts, maize reached the Philippines from the West before Magellan arrived at these islands in 1521.

1750: Maize has become a common food plant in western and central Africa. It is also found in the southern Chinese provinces of Hunan, Szechwan, and Fukien.

1850: U.S. farmers and seedsmen develop outstanding open-pollinated varieties.

1900s: Intensive research in plant breeding offers spectacular improvement in crop yields. Hybrid maize is the greatest practical achievement of plant genetics to date.

Statistics:

About 638 million tons of maize are produced annually on approximately 143 million hectares. Developing countries account for sixty-four percent of the world's maize area and 43 percent of global maize production.

How Maize is Used and its Nutritional Information:

Where it is grown for human food, maize is an important source of calories for the poor. Subsistence farmers grow the crop widely in mixed cropping systems. Average annual per capita human consumption of maize is 20kg in developing countries, but in Latin America and the Caribbean it approaches 80kg and, in Sub-Saharan Africa, 60kg. Maize provides about one-third of the mean calorie intake in these two regions and less than 5 percent in other regions. In addition

Areas of Research

- Rice
- Wheat
- Maize
- Barley
- Sorghum
- Millet
- Cassava
- Potato
- Sweet Potato
- Yam
- Banana
- Chickpea
- Cowpea
- Beans
- Lentils
- Pigeonpea
- Soybean
- Coconut
- Groundnut
- Livestock
- Forestry
- Fisheries
- Water

Impact

Genebanks & Databases

CGIAR on Global Issues

CGIAR & Agricultural Biotechnology

CGIAR Inter-Center Initiatives

Challenge Programs

to its use as food for humans, it is also used as a feedgrain, a fodder crop, and for various industrial purposes.

CGIAR's Work on Maize:

Among the many activities of scientists at two CGIAR research centers, the **International Maize and Wheat Improvement Center** (known by its Spanish acronym, CIMMYT) in Mexico and the **International Institute of Tropical Agriculture** (IITA) in Nigeria, are doing the following:

- Developing drought-resistant maize varieties (In 1991-92, drought destroyed southern Africa's maize harvest by two-thirds);
- Improving and disseminating maize varieties they have developed that possess resistance to maize streak virus and downy mildew, major diseases of the crop in sub-Saharan Africa and Asia, respectively; and
- Finding ways to control *Striga*, a parasitic plant causing US $7 billion of losses to global agriculture and a major crop pest in sub-Saharan Africa.

The CIMMYT maize germplasm bank contains the world's oldest and largest collection of maize seed, with some 17,000 seed samples and related documentation.

For more information on maize from the IITA web site, click here.

Sources:

CIMMYT: Seed Conservation and Distribution. *1986.*

FAO. Production Yearbook 2003.

Maize in the Third World. *Christopher R. Doswell, R. L. Paliwal, and Ronald P. Cantrell. 1996.*