Maize in global gene bank crisis

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WITH the future of bananas in the balance (see "A future without bananas?"), there's more worrying news for another major food resource. Maize, the world's most widely grown crop, is facing its own genetic meltdown

The world's crop gene banks are in crisis, a meeting of maize researchers and organisations in Texcoco, Mexico, was told last week. At least half the seed stocks are unable to germinate because of incorrect storage, with potentially dire consequences for the world's food supply.

Maize - known as corn in North America - grows in 160 countries, but to maintain its high productivity and keep a genetic edge over weeds, pests and diseases requires constant interbreeding between varieties. Most of the genes needed for this breeding now come from the freezers of gene banks, held by governments and international centres, which between them have more than 250,000 varieties of maize.

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Unfortunately much of the stock is useless, says Cary Fowler of the Global Crop Diversity Trust in Rome, Italy. "Germination rates are falling quite dramatically, and genes and genetic traits are being lost as a result," he says.

Suketoshi Taba, head of CIMMYT, the international maize gene bank based in Mexico, says fewer than half the maize seeds held in store round the world were able to germinate. Many had not been dried properly before being put into storage. Others were lost when refrigeration units failed during power outages.

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A future with no bananas?

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Go bananas while you still can. The world's most popular fruit and the fourth most important food crop of any sort is in deep trouble. Its genetic base, the wild bananas and traditional varieties cultivated in India, has collapsed.

Virtually all bananas traded internationally are of a single variety, the Cavendish, the genetic roots of which lie in India. Three years ago, *New Scientist* revealed that the world Cavendish crop was threatened by pandemics of diseases such as that caused by the black sigatoka fungus. The main hope for survival of the Cavendish lies in developing new hybrids resistant to the fungus, but this is a difficult and time-consuming task because the seedless modern fruit does not reproduce sexually and has to be bred from cuttings.

Now the UN Food and Agriculture Organization (FAO) has warned that wild banana species are rapidly going extinct as Indian forests are destroyed, while many traditional farmers' varieties are also disappearing. It could take a global effort to save the bananas' gene pool.

In fact many of the genes that could save the Cavendish may already have been lost, says NeBambi Lutaladio, a plant scientist at the FAO's headquarters in Rome, Italy. One variety that contains genes that resist black sigatoka survives as a single plant in the botanical gardens of Calcutta, he says.

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