

Desert plant may hold key to surviving food shortage

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The plant, *Kalanchoe fedtschenkoi*, is unique because, unlike normal plants, it captures most of its carbon dioxide at night when the air is cooler and more humid, making it 10 times more water-efficient than major crops such as wheat. Scientists will use the latest next-generation DNA sequencing to analyse the plant's genetic code and understand how these plants function at night.

read the DNA strand.

Source: University of Liverpool

The project will generate a genome sequence database that will be used as an Internet resource for plant biologists throughout the world.

The research comes at a time when farmland across the globe normally used for growing food such as rice and wheat is being taken over by bio-fuel crops used for bioethanol production as a petrol substitute. Scientists believe that the novel genes found in *Kalanchoe* could provide a model of how bio-fuel plants could be grown on un-utilised desert and semi-arid lands, rather than on fertile farmland needed for producing food.

Biological scientist, Dr James Hartwell, said: "There is a lot of concern over food shortage at the moment, with more farmland being commandeered for bio-fuels. As a result of changes in our climate the Intergovernmental Panel on Climate Change has predicted a large expansion of arid regions so there is an increasing need for new crop varieties that can be productive in deserts.

"*Kalanchoe* is a good example of how plants can flourish in harsh environments. If we can understand how it is able to photosynthesise using much less water than current crops, we may be able to use its genetic code to develop a crop able to withstand harsh environmental conditions. It is essential that farmland be returned to food production."

The genetic code of the plant will be deciphered using a DNA sequencing machine that uses an enzyme found in fireflies as a flash light to help

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