

Safe haven for tropical seeds

MORE THAN 27 000 lines of forage legume and grass seeds are housed at the Samford Seed Store, part of CSIRO's Australian Tropical Forages Genetic Resource Centre near Brisbane.

The store was established in 1968 to house the germplasm of tropical and subtropical forage species of value to the Australian cattle industry. Some of the seeds have been imported from Latin America and Africa, such as the South American legume *Stylosanthes*. This was one of the most successful legumes planted in the southern and northern spear grass regions between Mt Burnett and Cape York, due its tolerance of grazing and low phosphorous soils.

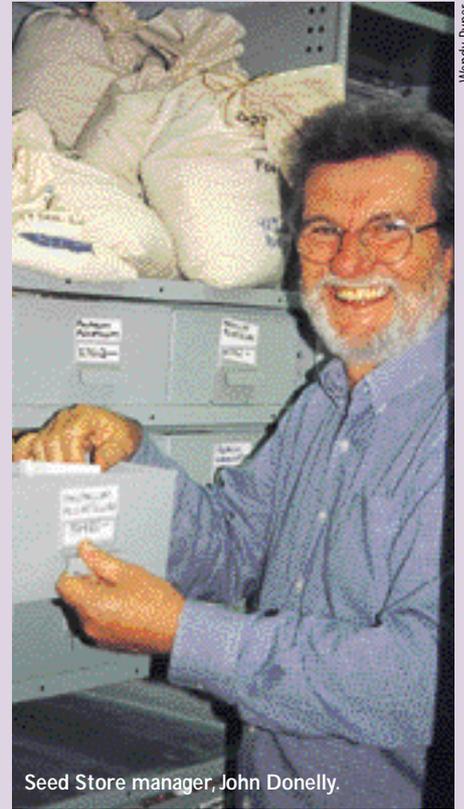
The widespread success of *Stylosanthes* and other legumes such as *Wynn cassia* and *Aeschynomene* (jointvetch) spp. in northern Australia has led to a drop in demand for new imported plants. But CSIRO Tropical Agriculture senior research scientist, Bruce Pengelly, says the seed store remains an important source of genetic diversity and a backup in case of disaster or disease.

'If disease destroys our pastures we can go back to the original seeds to look for resistance,' he says. 'And there are niche areas that could be filled in the future, such as legumes planted in clay soils. So there will always be the potential for future research.'

The centre is helping to preserve this diversity a world resource, an important role as population and livestock pressures in the countries of origin are leading to the extinction of many genotypes.

Seed store manager, John Donnelly, maintains the collection in storage freezers, and tracks it on a computer database. He receives many requests for seed for research purposes from scientific institutions in Australia and overseas. He also sends seed to gene bank partners at the International Livestock Research Institute in Africa and Columbia's International Centre of Tropical Agriculture in Columbia.

'Our seed originated from their countries, possibly in areas they never collected from. So it will add to the diversity of their collection,' Donnelly says.



Seed Store manager, John Donnelly.

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Wendy Pyper

Walk a mile in my habitat

'TELL ME and I'll forget, show me and I may remember, involve me and I'll understand.'

This is the philosophy behind a new board game called Landscape Game, developed by members of the Grazed Landscape Management Project at CSIRO Tropical Agriculture.

The game was devised to assist those involved in landcare management to understand the effects of habitat loss through clearing and land development, on the animals and plants living there.

Players are given 70 pieces of 'habitat' in the form of green counters, which they place over a grid of 100 squares on the

board. They then roll two dice to generate random coordinates and the pinpointed piece of habitat is removed.

After 10 pieces of habitat are removed, players are asked to pretend they are one of three animals: a spider, a bird or a bettong. Using their fingers, they must trace the path that animal could take to move from one side of the board to the other.

For example, spiders are relatively restricted in their movements and can move only one space in a cardinal direction (N, S, E, W) at a time. Some small birds, such as the eastern yellow robin, are classed as 'intermediate' organisms and can move one space in a cardinal or diagonal direction. Bettongs are 'mobile' organisms. They can move in any direction and jump one cleared space in a cardinal direction.

As the game progresses, removing 10 pieces of habitat at a time, it soon becomes clear that when 70% of the natural habitat is kept, all plants and animals can move and function in the landscape. But when

30% of the habitat is kept, only the more mobile creatures can get about.

'The game helps us understand the world from the point of view of the native plants and animals,' says Jan Green, one of the game's designers. 'If plants and animals cannot move across the landscape, they face serious problems of survival. For them, the key issue is the degree to which habitat is connected.'

This idea of landscape connectivity is essential to a balanced and healthy environment, and can only be assured if critical amounts of habitat, such as a minimum of 30% woodland cover, are maintained.

The Landscape Game is under development, with plans to make it a learning tool for school children and interested community members.

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Wendy Pyper

Micro mistake

In *Ecos 102*, the article 'Uncovering the enemy within' discussed health concerns relating to ultrafine airborne particles (less than 2.5 micron, or μm). Due to an error in translation, the unit of measurement incorrectly appeared as millimetres (mm). We apologise for any confusion this may have caused.