



PLANTS PEOPLE  
POSSIBILITIES

## Press Information 2010

### Kew's Millennium Seed Bank partnership in Numbers

**24,200** – Number of plant species targeted in 2001 to be banked by Kew's Millennium Seed Bank partnership and achieved in October 2009. The seeds have been banked in the country of collection and duplicated as a back-up at Kew's Millennium Seed Bank, located at the Royal Botanic Gardens, Kew's country estate Wakehurst Place. With older collections, Kew's Millennium Seed Bank now holds seed of nearly 10% of the world's 300,000 seed-bearing plant species, the biggest and most diverse collection of plant species anywhere on the planet.

**1.6 billion** – Estimated number of individual seeds held in the vaults at Kew's Millennium Seed Bank.

**50,000** – Kew's Millennium Seed Bank holds over 50,000 collections of seeds (ie same species collected in different regions). In many cases we hold more than one collection per species. This increases the genetic representation of each species in Kew's Millennium Seed Bank.

**2020** – By 2020, Kew's Millennium Seed Bank partnership aims to have collected, conserved and secured in safe storage seed from a quarter of the world's wild plant species (this is a further 15%, to be collected during 2010 to 2020).

**£2,000** – Will secure a plant species in safe storage for the foreseeable future and help contribute to Kew's Millennium Seed Bank partnership's aim of banking a quarter of the world's wild plant species by 2020. While we know precisely how much it costs to collect, care for and study our collections; in some cases their potential value to mankind in the future could be priceless.

**3,000** – Kew's Millennium Seed Bank has sent out over 3,000 collections over the past five years to researchers throughout the world to enable research into drought tolerant fruit trees, photosynthetically efficient staple carbohydrates, or biofuels that can be grown in saline desert. This research, and the development that results from it, cannot take place without the seeds and knowledge that we supply. During the next phase of Kew's Millennium Seed Bank partnership (2010 – 2020), we will do all we can to enable use of the seeds we hold for the benefit of the planet and people: tackling some of the big environmental issues of the 21<sup>st</sup> century such as habitat degradation, loss of biodiversity and climate change.

**-20°C** – This is the temperature at which seeds are stored in the vaults at Kew's Millennium Seed Bank.

**200** – The number of years most species are expected to survive in the very dry and very cold conditions of Kew's Millennium Seed Bank vaults.

**10 years** – Every ten years we check each collection of seeds we hold to make sure they are still alive. It is vital our collections can be turned back into growing plants.

**61** – Number of seed conservation staff at Kew’s Millennium Seed Bank at Wakehurst Place. On research and technology, their work includes: accurately identifying the seed collections that arrive at Kew’s Millennium Seed Bank; developing low technology, low cost solutions to seed conservation for our partners; researching the conditions under which a seed collection will germinate so seeds can be turned back into growing plants; and increasing knowledge and understanding of seed diversity to improve seed conservation techniques.

**2000** – The Wellcome Trust Millennium Building, containing the Millennium Seed Bank, opened in 2000. Kew’s Millennium Seed Bank partnership was set up in 2001 with the aim of collecting seed from plants that are endemic (i.e. only occur in one general location), endangered and of local economic importance. Much of the effort has been concentrated on the world’s drylands where a fifth of the planet’s people live, many of them poor and directly reliant on wild plant species in their daily existence.

**32%** - Percentage of collections made by Kew’s Millennium Seed Bank partnership that are locally economic species.

**450 m<sup>2</sup>** – The potential cold storage floor area in Kew’s Millennium Seed Bank vault (which has a floor area of over twice this value). This should be sufficient to store more than 50% of the world’s seed-bearing species. The Wellcome Trust Millennium Building (containing Kew’s Millennium Seed Bank) has a footprint of approximately 5,000m<sup>2</sup>.

**500** – The large underground vaults of Kew’s Millennium Seed Bank have been built to last 500 years.

**1,400** – Over the past ten years, Kew’s Millennium Seed Bank partnership has trained over 1,400 people from around the world in seed conservation. Teaching local partners and communities how to harvest and store seed from their own indigenous plants can help save thousands of plant species from extinction.

**54** – Kew’s Millennium Seed Bank partnership is a global network of 123 organisations from 54 countries. Major partnerships include: Australia, Botswana, Burkina Faso, Chile, China, Jordan, Kenya, Lebanon, Madagascar, Malawi, Mali, Mexico, Namibia, Republic of South Africa, Tanzania and the USA.

**1,400** – Nearly all of the UK’s 1,400 native seed-bearing plants are stored in Kew’s Millennium Seed Bank.

**200 years** – Age of the oldest seeds germinated by Kew’s Millennium Seed Bank scientists to date. The seeds were discovered in the National Archives at Kew. They are: a legume, *Liparia villosa*, a species of *Leucospermum* and an *Acacia*.

**1 year** – The time that it took seeds of *Jubaea chilensis* to germinate.

**47,881** - The number of individual containers used to hold the seed collections for long-term storage in Kew’s Millennium Seed Bank’s vaults. This is mainly comprised of glass bottles and preserving jars carefully selected for the excellent sealing properties.

**9,000** – Average number of school children who visit Kew’s Millennium Seed Bank every year

**3.7 hours** – Average length of time it takes to carry out all of the processing work (data handling, cleaning, x-ray analysis, counting, packaging etc) on a single collection between its arrival at Wakehurst Place and its storage in Kew’s Millennium Seed Bank vaults.

**1mm** – Size of orchid seed stored in Kew's Millennium Seed Bank vaults. The smallest seed stored in Kew's Millennium Seed Bank.

**60mm** – Size of *Hyphaene* palm 'seed' stored in Kew's Millennium Seed Bank vaults. The largest seed stored in Kew's Millennium Seed Bank.

**6,905** – The number of seed collections that have arrived at Kew's Millennium Seed Bank in the last 12 months.

**3,254** – The number of species that have been represented within the collections arriving at Kew's Millennium Seed Bank in the last 12 months. This is one of the most important numbers of all as this gives an idea of the number of species that Kew's Millennium Seed Bank partnership add to the list of those kept safe from extinction every year.

**200** – Number of seed collecting expeditions that Kew's Millennium Seed Bank's international collecting team and our partners around the world carry out on average every year.

**250** – Number of un-described species, hence potentially new to science, collected by Kew's Millennium Seed Bank partnership in its first ten years. The most exciting example is a member of the *Rubiaceae* collected in Madagascar during 2003 which was identified as a new genus and hence new species by the Royal Botanic Gardens, Kew's Stuart Cable in 2006. Other examples include members of *Cyperaceae*, *Malvaceae* and *Myrsinaceae* from Kenya, *Asparagaceae* and *Convolvulaceae* from Madagascar, *Cyperaceae* and *Leguminosae* from South Africa and *Cyperaceae* from Mali.

**23** – Number of countries that have received assistance from Kew's Millennium Seed Bank team on setting up seed banks. Most recently, the Germplasm Bank of Wild Species at the Kunming Institute of Botany, Chinese Academy of Sciences was launched to the international scientific community in October 2008. Other examples include the first national seed Bank in Mali, Unite Semences Forestières et Herbiers; a seed bank for wild plant species from the arid zones of Mexico and a fledgling seed bank in Kyrgyzstan.

**11** – Number of languages spoken by staff working at Kew's Millennium Seed Bank. These range from French and Italian to Singhalese, Bambara and Setswana.

**523** – Number of person years of experience in seed banking within the Royal Botanic Gardens, Kew.

**16** – Number of different nationalities employed in Kew's Millennium Seed Bank at Wakehurst Place since 2000. These are UK, Irish, Dutch, French, German, Belgian, Austrian, Italian, Croatian, Spanish, Burkina Be, Canadian, Chinese, Mexican, South African and Sri Lankan.

**135** – Seeds from 135 different countries are stored in Kew's Millennium Seed Bank.

**341** – Seeds from 341 different plant families are stored in Kew's Millennium Seed Bank.

**1,000** – Kew's Malagasy Millennium Seed Bank partner, Silo National des Graines Forestières, added their 1000th new species to Kew's Millennium Seed Bank in 2009 – *Dioscorea maciba*, a yam. Yams are an important food source in Madagascar and many species are threatened.

**1996** – The Lebanese Agricultural Research Institute (LARI) and Kew's Millennium Seed Bank have been jointly collecting in Lebanon since 1996, before Kew's Millennium Seed Bank partnership was formally established. Between 1996 and 2008, the LARI/Kew collaborative project collected 1,275

collections representing 844 species (or 33% of Lebanese Flora), 430 genera (58%) and 81 families (65%).

**2,500** – The South African National Biodiversity Institute (SANBI), the South African partner in Kew's Millennium Seed Bank partnership, celebrated collecting more than 10% of its native flora in September 2009. More than 3,500 seed collections, representing over 2,500 indigenous plant taxa, have been made for Kew's Millennium Seed Bank partnership. This includes collections of approximately 251 South African threatened species (approximately 10% of total number of threatened species) of which 55 are classified as Critically Endangered and 1,639 taxa endemic to South Africa (approximately 12% of total number of endemic taxa). More than 80% of the collections are either threatened, endemic or "useful" species.

**2,900** – To date over 2,900 species new to Kew's Millennium Seed Bank have been collected by the USA Seeds of Success programme.

**900** – To date Kew's Millennium Seed Bank partner in Burkina Faso has made over 900 collections, representing 60% of the species from the country's flora.

**6 months** – Length of time that the first Australian seeds in space – from Kew's Millennium Seed Bank partner the New South Wales Seed Bank at the Botanic Gardens, Sydney – spent in space. They survived more than 2,800 orbits of the Earth with no signs of space fatigue or damage. The seeds included the Wollemi Pine, one of the world's rarest and oldest plants.

**150** – The devastating fires in SE Australia in February 2009 eliminated the only known population of the shrub *Nematolepis wilsonii* from a mountain forest some 100 km east of Melbourne. Seeds of this species were collected for Kew's Millennium Seed Bank partnership in 2007 and also cultivated at the Royal Botanic Gardens Melbourne. Kew's Millennium Seed Bank partner, the Victorian Conservation Seedbank is playing a pivotal role in the re-establishment of this plant. Over 150 plants grown from seed and cuttings have been planted into a new home in an area adjacent to the original population. They will be moved to the original site should no seedlings appear at the original site in spring 2010.

**930** – In its first four years the Tasmanian programme, SeedSafe, in Kew's Millennium Seed Bank partnership has secured 930 seed collections, including 138 threatened taxa. For a number of Tasmania's threatened taxa, seed bank collections represent significantly larger potential biodiversity than exists in the wild.

**25** – The number of non-UK PhD students from seven countries supervised to completion since 1997 by the Royal Botanic Gardens, Kew as part of Kew's Millennium Seed Bank partnership. A further 22 PhDs in a further 14 countries are ongoing. In addition, 25 MSc students have been supervised, mainly from UK universities.

**308** – The number of publications (excluding these above) produced by Kew's Millennium Seed Bank team since 1997. Of these, 56% have been in peer-reviewed journals and co-authored with scientists from 28 countries. A total of 12 books (approximately 5,000 pages) have been edited.

**Ends**

For further information visit [www.kew.org/msbp](http://www.kew.org/msbp)

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