**Metadata**

**Aim:**

To determine photoperiod sensitivity in Australian plants and whether there are trends in latitude, seed size, growth form, and across phylogeny and ecosystems.

**Sampling strategy:**

To quantify photoperiod sensitivity of seed germination in a range of species, I collected fresh seeds from 97 native species from eastern Australia. Each species was collected at a single site, but sites ranged from 17.338- 36.458˚S in latitude, and spanned multiple ecosystems including heathlands, woodlands, rainforests and alpine habitats (above the tree-line).

For each species, up to 150 ripe seeds were collected from five or more individual plants (following sample size protocol from Cornelissen et al., 2003). Seeds were evenly collected across individuals and within individuals (i.e. from numerous branches) to ensure samples were reflective of true wild type characteristics (Meyer and Monsen, 1993).

**Seed mass method:**

To determine average fresh seed mass, I weighed, in grams, 50 fresh seeds from each species using a micro-balance (Mettler Toledo PTY LTD, accuracy: 1 x 10-4). This value was then divided by 50 to obtain the average.

**Determining Seed Inviability:**

Species were left in incubators until all seeds germinated. Any non-germinated seeds were tested for viability at the end of the 90-day period. I tested viability using a microscopic cut test analysis and staining with 1% 2,3,5-triphenyltetrazolium chloride (TTC) following the Millennium Seed Bank (MSB) procedure, which stained the embryo red if it was respiring.

**References:**

Cornelissen, J. H. C., Lavorel, S., Garnier, E., Díaz, S., Buchmann, N., Gurvich, D. E., Reich, P. B., Steege, H. t., Morgan, H. D., Heijden, M. G. A. v. d., Pausas, J. G., & Poorter, H. (2003). A handbook of protocols for standardised and easy measurement of plant functional traits worldwide. *Australian Journal of Botany, 51*(4), 335-380.

Meyer, S. E., and S. B Monsen. 1993. Genetic Considerations in Propagating Native Shrubs, Forbs, and Grasses from Seed. Pages 47-54 *in* T. Landis, editor. Proceedings, Western Forest 550 Nursery Association. USDA Forest Service, California.

**Notes:**

Data sampling took place from February 2020 to April 2020.

The species that have letters at the end of the name, e.g. ‘.B’, ‘.D’, ‘.R’ etc., were just there to emphasise the location of where it was sampled. Those letters can be removed (sorry about that).

So, for example, Linospadix monostachya.B and Linospadix monostachya.D are both the exact same species, just sampled from two different areas.

The longitude for that Queensland species should be 145.3758 (sorry it was a typo).