

# SEED GERMINATION DATA SHEET

## 2. THE EUCALYPTS

### Identification

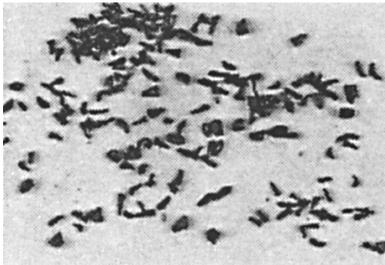
Key features used in eucalypt identification include the size, shape and colour of the juvenile leaves (which are not always present) as well as the texture of the bark from the trunk to the outer branches. Samples of fruit, buds and adult leaves are also very helpful.

Difficulties in identification can arise when hybrids are encountered (eg *Eucalyptus viminalis* and *E. ovata* hybridise with various species). Hybrids can also occur between indigenous and non-indigenous eucalypts resulting in genetic contamination of remnant populations (eg *E. pryoriana* x *E. botryoides* in the Melbourne suburbs).

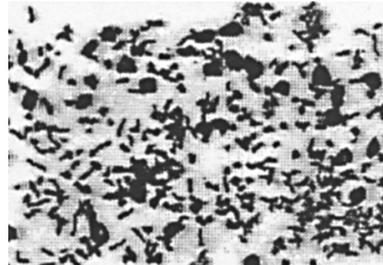
### Seed Characteristics

Contained within eucalypt capsules is a mixture of fertile seeds and “packaging” (unfertilised “seeds”). For some species the seed can be readily distinguished from the “packaging” where there is a colour contrast (usually black seed and red or brown “packaging” eg *E. viminalis*). However, the distinction is not always apparent (eg *E. camaldulensis*). Given below are some examples of variation in size of eucalypt seed found from the Melbourne region..

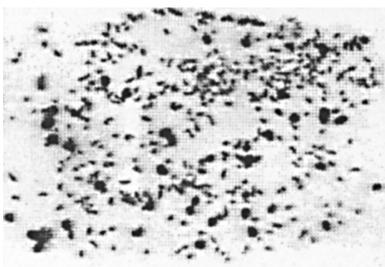
Figure 1: Variation in eucalypt seeds



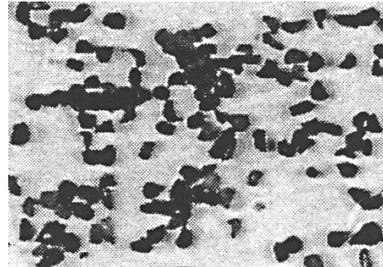
River Red Gum (*E.camaldulensis*)



Long-leaved Box (*E.gonoicalyx*)



Black Box (*E.largiflorens*)



Messmate (*E. obliqua*)

### Seed collection time

The collection of eucalypt seed can vary somewhat within a species as sometimes old fruit can remain on some trees from previous years (eg *E. macrorhyncha*). However, other species drop their seed readily (eg *E. ovata*). As with many genera, variation in the timing of fruit ripeness can be associated with altitude or water availability.

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With some eucalypts (eg *E. viminalis*) the seed ripens when the fruit capsules are still green but with other species it is advisable to collect the capsules when they turn grey (eg *E. globoidea*). The viability of seed taken from green capsules, however, is in need of investigation across the genus.

## Seed cleaning techniques

For fruit which are tightly closed, seed release can be promoted by separating the capsules from the branches and storing them in a hot dry environment, preferably with good ventilation.

Storing seed in glass jars in the sun can result in the quick release of seed but can also promote fungal growth.

## Germination techniques

The germination rate of some species (eg *E. obliqua*) can be promoted by storing the seed at 40C for several days. This phenomenon, however requires further investigation.

Generally, eucalypts germinate readily in a standard propagation medium with lower germination rates being achieved for larger-seeded species (eg *E. pauciflora*).

## Germination characteristics

The following table has been produced from information obtained from seed collections and germination trials at the Melbourne Indigenous Seedbank. These trials were undertaken using a regime of 24oC day (14 hours)/12oC night (10 hours).

Species	Seed collection time-frame	Approximate time for total germination	Typical germination rate per gram
<i>Eucalyptus baxteri</i>	Variable	35 days	42
<i>Eucalyptus camaldulensis</i>	Variable	27 days	494
<i>Eucalyptus camphora</i>	? (Includes Dec)	9 days	721
<i>Eucalyptus cephalocarpa</i>	Variable	17 days	333
<i>Eucalyptus cypellocarpa</i>	Jan-June	25 days	372
<i>Eucalyptus dives</i>	Variable	27 days	101
<i>Eucalyptus fulgens</i>	Jun-Feb	6 days	690
<i>Eucalyptus globoidea</i>	July-Jan	28 days	151
<i>Eucalyptus goniocalyx</i>	Variable	22 days	325
<i>Eucalyptus leucoxylon</i>	Oct-Jun	11 days	135
<i>Eucalyptus macrorhyncha</i>	Variable	27 days	33
<i>Eucalyptus melliodora</i>	Variable	14 days	296
<i>Eucalyptus microcarpa</i>	Nov-Aug	14 days	671
<i>Eucalyptus obliqua</i>	Variable	27 days	57
<i>Eucalyptus ovata</i>	Variable	15 days	352
<i>Eucalyptus pauciflora</i>	Apr-Sep	14 days	33
<i>Eucalyptus polyanthemus</i>	Dec-Sep	17 days	47
<i>Eucalyptus pryoriana</i>	Variable	17 days	314
<i>Eucalyptus radiata</i>	Best from Aug-Apr	30 days	255
<i>Eucalyptus rubida</i>	Jan-Sep	40 days	223
<i>Eucalyptus tricarpa</i>	Oct-May	15 days	154
<i>Eucalyptus viminalis</i>	Variable	18 days	154
<i>Eucalyptus yarraensis</i>	Mar-Oct	14 days	84