

SEED GERMINATION DATA SHEET

3. INDIGENOUS GRASSES

Identification

The form of the plant is a good starting point in identification particularly in distinguishing between indigenous grasses (mostly perennial tussocks with fine leaves) and introduced grasses (either tufted annuals, creeping grasses or tussocks usually with broad leaves).

Key features useful in grass identification include characters associated with:

1. the bracts (*lemma* and *palea*) which enclose the grass seed
2. the glumes which enclose the seedhead
3. the nature of the leaves including the leaf base.

Note that the form of the leaves can alter once a specimen is taken for identification, therefore a leaf description prior to sampling can be useful. Good diagrams explaining the diagnostic features of grasses can be found in the 'Grasses of New South Wales' (Wheeler, Jacobs and Norton, 1990) and the most up to date key for identification is found in the 'Flora of Victoria Vol 2' (Walsh and Entwistle, 1994).

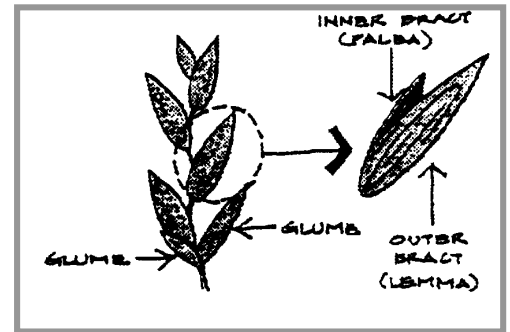


Figure 1: Various features of a Poa seedhead

Distribution around Melbourne

The most common grasses found (and planted) around Melbourne include various species of *Danthonia* (Wallaby-grasses), *Poa* (Tussock-grasses), *Stipa* (Spear-grasses) and *Themeda triandra* (Kangaroo Grass). The basalt plains to the north and west of Melbourne contain genera and species not found elsewhere around Melbourne. e.g. *Dicanthium* and *Enneapogon*.

Seed collection

The timing of the ripening of grass seed seems to vary according to the rainfall and temperature of the preceding spring, but generally the seed of most species (and plants) throughout Melbourne ripen from late November to February. Grass seed can be collected by hand (removing seed from the seedheads) or by the use of secateurs. For the collection of large quantities of seed various mechanical harvesters are available.

Seed cleaning techniques

Seed can be extracted by rubbing the seedheads between a pair of horse grooming gloves. Sieves can then be used to help remove the trash. Various mechanical devices have been devised specifically for the cleaning of certain genera.

Propagation

For many species there are no special requirements for propagation. However, smoke treatment seems to promote the germination of *Chionochloa pallida* (Silvertop Wallaby-grass). In addition at least some *Stipa* spp and often *Themeda triandra* need to be subjected to a colder night temperature than the day temperature for germination. As an alternative, *Themeda* can be stored at 4°C for at least 1 month to break the dormancy.

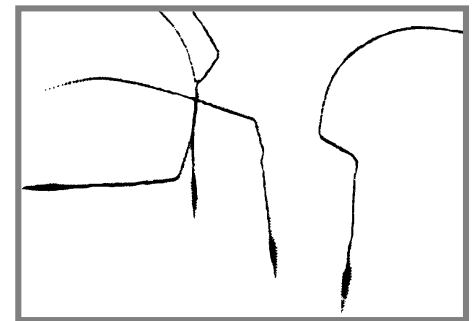


Figure 2: Stipa seed showing the lemma at the base attached to the bigeniculate (twice bent) awn.

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For the large scale production of plants the use of trays of cells (e.g. Hiko) has proven to be very successful and cost effective.

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 24⁰ C day (14 hours) and 12⁰C night (10 hours)

Species	Common Name	Seed collection time frame	Approximate time for total germination	Typical germination rate per gram
<i>Agrostis avenacea</i>	Common Blown Grass	Mid Dec-early Feb	18 days	2289
<i>Bothriochloa macra</i>	Red-leg Grass	Late Dec-Feb	36 days	309
<i>Chionochloa pallida</i>	Silvertop Wallaby Grass	January	67 days	110 (smoked)
<i>Chloris truncata</i>	Windmill Grass	Mid Dec-March	36 days	835
<i>Danthonia caespitosa</i>	Common Wallaby Grass	Mid Dec-Jan	26 days	160
<i>Danthonia duttoniana</i>	Brown-back Wallaby Grass	Mid Dec-Jan	27 days	729
<i>Danthonia linki var</i>	Leafy Wallaby Grass	Mid Dec-Early Feb	35 days	292
<i>Danthonia linki var</i>	Leafy Wallaby Grass	Mid Dec-Early Feb	17 days	475
<i>Danthonia pilosa</i>	Velvet Wallaby Grass	January	35 days	370
<i>Danthonia racemosa</i>	Striped Wallaby Grass	Mid Dec-Jan	37 days	557
<i>Danthonia setacea</i>	Bristle Wallaby Grass	Early Dec-Jan	24 days	376
<i>Deyeuxia quadrisetata</i>	Reed Bent Grass	Jan-Early Feb	36 days	1312
<i>Dichanthium sericeum</i>	Silky Blue Grass	Late Dec-Early Feb	16 days	374
<i>Dichelachne crinita</i>	Long-hair Plume Grass	Early Dec-Jan	34 days	648
<i>Elymus scabrurus</i>	Common Wheat Grass	Early Dec-Jan	35 days	47
<i>Enneapogon nigricans</i>	Nigger-heads	Early Dec-Early Feb	8 days	148
<i>Microlaena stipoides</i>	Weeping Grass	Dec-Mid April	25 days	87
<i>Poa ensiformis</i>	Sword Tussock Grass	Mid Dec-Mid Feb	65 days	637
<i>Poa labillardieri</i>	Common Tussock Grass	Late Nov-Jan	39 days	787
<i>Poa morrisii</i>	Soft Tussock Grass	Dec -Jan	22days	658
<i>Poa sieberiana</i>	Grey Tussock-grass	Early Dec-Jan	?	572
<i>Stipa bigeniculata</i>	Kneed Spear Grass	Late Dec-Jan	23 days	34 (with awns)
<i>Stipa elegantissima</i>	Feather Spear Grass	Nov-Mid Feb	22 days	12 (with awns)
<i>Stipa flavescens</i>	Coast Spear Grass	Dec	53 days	2 (with awns)
<i>Stipa mollis</i>	Supple Spear Grass	Nov-Jan	71 days	6 (with awns)
<i>Stipa rudis</i>	Veined Spear Grass	Late Dec-Mid Feb	98 days	12 (with awns)
<i>Stipa setacea</i>	Corkscrew Spear Grass	Late Nov-Mar	~50 days	4 (with awns)
<i>Themeda triandra</i>	Kangaroo Grass	Late Dec-Jan	~100 days	13 (with awns)