

FLORA

SOME NOTES ON GROWING NATIVE GRASSES

Una Bell

There are about 140 species of native grass in the south-west of WA and while some grasses are widespread and cope with a variety of soils and habitat, others are very specific. Some native grasses are easy to grow, others have dormancy or other mechanisms in place so that all the seed does not germinate at once, if at all. Native grass seed is often kept for a year to overcome dormancy problems, although research is revealing ways to break seed dormancy in some species. Whether you are successful in growing native grasses can depend on a lot of variable factors, such as seed viability and dormancy.

Native grasses grow and spread quite happily if left to their own devices, so in attempting to grow native grasses we are, in fact, interfering with nature. Nowadays I prefer to weed out the introduced grasses, and let the native grasses spread. This seems to work, but it means going back year after year to maintain a bushland reserve or other site. The result is grasses on a site where grasses like to grow, but they are native grasses, and not introduced ones. If grazing or mowing native grasses, remember that they need to drop their seed to survive.

Grasses have a few annoying habits. Most grass seed is produced on the end of a long flowering stem, and grasses like to spread around, so it can be difficult to contain them in a nursery. Grasses are by their very nature escape artists, opportunistic, and they tend to live on the edge.

Winter-active or summer-active?

Most native grasses in the south-west are winter-active, so they flower in spring, and seed is



Feather speargrass (*Austrostipa elegantissima*) in fruit on a road/rail verge south of Coorow. (Photo: P. Hussey)

mature in early summer. During summer they may go dormant. Some brown off completely in a dry year, but once it rains, they will go green and resume actively growing. Winter-active grasses are usually sown in autumn, although some can germinate in hotter weather. Wallaby grass (*Austrodanthonia* spp.) are winter-active.

Summer-active grasses, such as kangaroo grass (*Themeda triandra*) need warmth to germinate and are usually sown or propagated from spring to autumn. Summer-active grasses go dormant over winter.

Seed collection

When collecting seed, take from an area as close as possible to the revegetation site so as to maintain the local provenance. Provenance is very important as different populations of plants within one species can vary considerably. Seed needs to be as mature as possible. Some grasses such as forest rice grass (*Tetrarrhena laevis*) shed the seed rapidly after ripening, and can

be difficult to collect. Remember that you need a licence from DEC to collect native grass seed on public land or permission from the private landholder.

Direct seeding

If direct seeding, broadcast winter-active seed after the first heavy rains in autumn. For summer-active grasses, sow in spring or early summer. Many native grasses grow in disturbed sites such as along tracks and firebreaks, so disturbing and raking the soil usually helps. Generally for native grasses, surface sow uncleaned seed, that is, scatter florets or the whole inflorescence, but for cleaned seed a sowing depth of one cm seems to be the most suitable*. Cleaned seed does not have as long a shelf-life as uncleaned seed.

Good weed control is essential. It is often difficult to distinguish between weedy and native grass seedlings, so it may be best to let the grasses flower and then weed. If you cannot identify a plant, don't

continued from page 3

Growing native grasses**FLORA**Windmill grass (*Chloris truncata*). York. (Photo: P. Hussey)

presume it must be a weed. If native grasses are already on site, devise a program of weed control that encourages the establishment of the native grasses while getting rid of the weeds. Some native grasses flower later than many weedy grasses so a window of opportunity may exist. Disturbed and bare patches in or on the edge of bushland can be direct seeded with native grass seed collected on the same or nearby sites.

Germination and seed dormancy

Giberellic acid, heat treatment (30 minutes at 100° C) and smoke water have been tested for breaking dormancy.* Windmill grass (*Chloris truncata*) responded well to gibberellic acid and heat treatment; kangaroo grass responded to heat treatment; Queensland bluegrass (*Dichanthium sericeum*) responded well to gibberellic acid, with the highest rate of germination where just the caryopsis (seed) was used, rather than the whole floret; wallaby grass responded to smoke water at 1% solution, with cleaned seeds having an even higher rate; fresh weeping grass (*Microlaena stipoides*),

whether cleaned or uncleaned seeds, had a high germination rate without any treatment, but uncleaned seed can be improved with gibberellic acid. Heat treatment was generally most effective on summer-active grasses, and detrimental to winter-active grasses.

Smoking, either through direct aerosol smoke or use of smoke water, can assist some native grasses to germinate. First try without smoke and then use it after two to three weeks if there are no results.

Clump division, stolons and rhizomes

Some grasses can be grown by dividing clumps, or from cuttings of above-ground runners (stolons) or rhizomes. Many plants, grasses included, grow well from cuttings and clump divisions taken from areas where a fire has gone through and when the bush is starting to regenerate. Take cutting material in autumn (March-April) after first rains and the season starts to change. Young material will grow faster to establish new plants. Use hormonal gel for dipping stems.*

Translocation

Many native grasses can be transplanted if need be, such as from roadside ditches which are going to be dug out. Often grasses are best potted on and can then be re-established on a site. Some grasses may take a while to recover. I have also rescued a local sedge (*Baumea rubiginosa*), once by the truckload, after being excavated from a roadside drain, and had excellent results in direct transplants to a local wetland rehabilitation site. However, care needs to be taken if soil is taken from one site to another as there is a risk of spreading dieback or other diseases. Often it is better to collect the seed to re-locate the population, if this is possible.

Fertiliser

Native grasses get enough fertiliser in their natural habitat. Higher fertiliser inputs, such as rabbit heaps, often encourage the growth of weeds. When growing native grasses in containers, some fertiliser may be needed. I have used slow-release native plant

Kangaroo grass (*Themeda triandra*). Mundaring. (Photo: P. Hussey)

continued from page 4

Growing native grasses**FLORA**

Wallaby grass (*Austrodanthonia* sp.) Kalamunda. (Photo: P. Hussey)



Wallaby grass seedhead (enlarged) with a detached fruiting spikelet. (Photo: U. Bell)

food, as well as higher nitrogen fertilisers, and a seaweed mix. I usually fertilise the grasses when they are active, often every few weeks if they are really growing and flowering; if it is their dormant time of year, I let them rest. Winter-active grasses are more tolerant of fertiliser than summer-active grasses. Having once nearly killed some kangaroo grass with fertiliser, I rarely fertilise summer-active grasses, and then with caution.

Getting started: an easy native grass to grow

There are seven species of wallaby grass in the south-west. They are important native pasture grasses, good for rehabilitation, can be used for native gardens, and are very easy to grow. Different species of wallaby grass can be problematic to identify, but it is not difficult to learn to recognise the genus of wallaby grass. They are perennial winter-active clumps, from 15 cm to one m high. They flower in spring to early summer, with mature seed ready to be collected in December. Plants produce a lot of seed which is often kept for one year to overcome the dormancy period, but some growers have had success with fresh seed. They are easy to grow without any treatment.

Studies have shown better results with cleaned seed, and 1% smoke water.* Can germinate in hot weather, but usually sown in autumn to spring. For direct seeding, mature seedheads can be

thrown down on disturbed soil, and plants will grow in thick clumps. Alternatively, rake in florets which contain the tiny brown seeds. If using cleaned seed, it must be covered with soil. Note: if storing seedheads, don't throw out the brown dust at the bottom of the paper bag or jar, it's probably the seed!

Have you grown native grasses? If so, please send notes on your methods to LFW. Una would like to collate all this data to provide the best advice. She will acknowledge your contribution.

To be continued ...

[*Ref list available: Ed.]

For Una's grass ID book (see WW 13/2, April 2009) and for posters, go to the Shire of Mundaring website www.mundaring.wa.gov.au.

Una Bell is a volunteer Research Associate at the W.A. Herbarium, specialising in native grasses of south-west W.A.