

TUSSOCKS, SPEARS, WALLABIES, 'ROOS - A DREAMTIME?

STORY: IAN CHIVERS, NATIVE SEEDS PTY LTD

AUSTRALIAN GRASSES

There is such a wide array of grass species available for landscaping and turf why even consider Australian native grasses? They're all just clumps anyway! I'm busy – it's all too hard!

How many native grasses are there anyway?

Years of misinformation and misunderstanding feed our reluctance to use or recommend native grasses, regardless of their possible advantages and applications. There are many really good reasons to include native grasses in your landscaping specifications, so let me give you some confidence in their use and some guidelines about how to, and how not to, specify them. As this is such a potentially huge subject, I'll have to limit myself to Southern Australia. For those in the northern part of Australia, well, maybe that can be the topic of a follow-up article.

WHY USE NATIVE GRASSES?

Native grasses have been in Australia for millions of years and consequently have adapted to Australian conditions - frequent drought, high summer temperatures, low fertility and acidic, as well as old and shallow, soils. There are many types and the conditions in which they have developed are highly varied, but we can make some generalisations. They have significant adaptational advantages over the introduced species, which frequently have

European origins and tend to die out after one or two years. Some big advantages over introduced species include a lower water requirement for growth, no need for lime or fertiliser to survive and they don't require resowing after drought, heat or fire.

Native grasses are available in an array of shapes and sizes, from the well-known clump plants like Tussock Grass (*Poa labillardieri*) through very short lawn types to huge bamboo-like types. There are around 1200 species of native grasses in Australia and each would have developed many distinct ecotypes, so the range of germplasm available is huge and largely unexplored.

As a result of existing in our Australian environment across this entire continent for so long, there is a type of grass for virtually any desired purpose - from salt-spray affected alkaline soils to shaded sites or cracking clay soils. With careful site description you can find a native grass for nearly all of your site conditions and landscape requirements.

WHAT ARE SOME OF THE LIKELY TYPES?

There are six grasses commonly found in southern Australia - only a small sample of the 600 or so species found in this area.

Within this group of six grasses are four cool-season types – those that establish in the cooler months, grow actively in spring, and

1. Front garden designed by AILD member Georgina Martyn of Bold Simplicity. Native Seed grasses are suitable in a domestic context - this lawn is Griffin Weeping Grass (*Microlaena stipoides* var *Griffin*) which has been selected for the Royal Botanic Gardens' exhibit at Chelsea next year. This lawn had not been mowed for some months at the time of this photo and has adopted a 'meadow' appearance.

2. *Themeda triandra* (Kangaroo Grass) seed head forms throughout summer on stems about 500mm with dark nodes.



flower over summer. There are also two warm-season grasses – those that establish in the warmer months, grow actively over the summer, and usually go dormant in the winter. These are known for their drought tolerance.

COOL-SEASON TYPES

Microlaena stipoides (Weeping Grass)

This grass is a natural turf-forming grass. It is highly shade tolerant, has a very soft texture, is very persistent once established, and can be mowed close for a lawn or left uncut for a calf-height meadow appearance. It produces very high quality turf and indeed the variety 'Griffin' will be used as a fine lawn in the Royal Botanic Gardens (Melbourne) exhibit in the 2011 Chelsea Garden Show. Once established (and it grows best on reasonably high organic content soils) it is very hardy and resilient after drought.

Austrodanthonia spp. (Wallaby grasses)

There are 32 native species of *Austrodanthonia* and they vary substantially in height, leaf texture and leaf width. Some species such as *A. carphoides* are very small with mature plants not growing taller than 50 mm, while others such as *A. tenuior* can grow up to 1.2 m tall. They have different soil preferences and tolerances to factors such as salinity and soil acidity. So simply saying that you want an *Austrodanthonia* type for your landscape is not sufficient - more detail is needed. It is like saying that you want a gum tree for the job. For specifications you need to define what it is you want from the wallaby grass – a tall accent plant, a short and hardy ground cover or a hard-wearing lawn cover.

Poa spp. (Tussock grasses)

These grasses, and particularly *Poa labillardieri* (Large Tussock Grass), have been used extensively in landscaping in southern Australia - but sadly often incorrectly. While they can look good for a year or so on batters and traffic islands, they will eventually die under these conditions. Designers need to bear in mind that these grasses originate in cool, wet, almost swampy areas and that they will not survive well in dry, harsh conditions. There are many better alternatives within the native grasses for these locations.

When well used they can be attractive and provide that upright, tall, structural element that is desired in many landscapes. They survive best when used en masse rather than as single plants.

Austrostipa spp. (Spear grasses)

Once again there are many species that form the *Austrostipas* and they can, like the *Austrodanthonias*, range from small to quite tall. They do live up to their name and all have spear-type seeds that can stick into the fur of animals or the skin of people, so their siting in the landscape needs to take account of this. They are all very hardy and withstand drought better than most other species. They live happily on very shallow soils and produce very showy seedheads that remain on the plant for some months after maturity.



YOUR QUESTIONS ANSWERED

ALLDM members can contact Native Seeds about all issues relating to native grasses and their establishment from seeds. They have been doing research and development into native grasses for almost 25 years, so are able to offer you significant expertise.

For a **free** copy of *Australian native grasses – a manual for sowing, growing and using them* by IH Chivers and KA Raulings, or to go on the mailing list for further info on upcoming webinars, newsletters and special offers by Native Seeds, contact enquiries@nativeseeds.com.au

WARM-SEASON TYPES

Themeda triandra [syn *T. australis*] (Kangaroo Grass)

This grass is probably the benchmark of Australian native grasses. Interestingly, it also occurs naturally in nearby countries, but it is in Australia that it has spread across the entire country. It occurs from the alps to the coast - north, south, east and west - and from the desert to the rainforests. It is amazing to think that one species of any plant can occur across these environments, but it does. As a consequence of its widespread nature there are many different forms, some of which have been developed into identifiable varieties.

Tangara Kangaroo Grass was developed by the CSIRO for roadside applications where the need was for an attractive plant with relatively low biomass. This grass takes on a wonderful purple colour in the autumn and retains that colour until active growth resumes in Spring.

There are many types of *Themeda triandra* and I will mention only one other as a contrast, the variety 'Burrill', which is taller, more leafy and does not have the same colour as 'Tangara'.

Bothriochloa macra (Redgrass)

This grass is the original "grows on the smell of an oily rag" grass. It loves cracking clay soils, will provide grass cover under drought and does not mind shade.

COMMON ISSUES WITH TENDER SPECIFICATIONS FOR NATIVE GRASSES

Most of the issues with tender specifications could be relatively easily resolved by asking some expert advice prior to publication of tender documentation. This would be time well spent and far easier to do than face a contract dispute.

The common issues and their solutions are as follows:

1. Inappropriate species choice. Check cultural requirements of species and match them with site conditions, remembering that just because a species occurs in an area does not mean that it occurs in the same type of conditions that you are working with.
2. Seed unavailable. Check if seed is available rather than listing all native grass species of an area without considering this first.
3. Seed sowing rates too low. If you need a high density of plants, then you need a high rate of seed application. If soil is laden with weeds a heavier rather than lighter seed sowing rate is the best rule.
4. Inappropriate timing of seed application. While it is not always possible to have the landscaping occur when the conditions are right for germination, options should be provided for autumn/winter sowing operations and spring/summer sowing.



3. *Austrostipa densiflora* (Foxtail Spear Grass) was sown on a roadside in northern Victoria for strongly persistent grass cover. Attractive flower in dense compact panicle on stem up to 1m.

4. Seedhead of *Austrodanthonia richardsonii* var Hume. Hume Wallaby Grass is highly persistent on very shallow soils and requires minimal fertiliser. Once established this grass can be mowed infrequently and needs little other maintenance. It is useful for roadside verges and for lawns if sown at high density.

5. Intermediate species of Wallaby Grass, *Austrodanthonia geniculata* var Oxley. Selected for hardiness and longevity as well as seed production. Tufted perennial that remains green throughout the year.



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6. This lawn shows how well *Microlaena stipoides* grows under heavy shade. Note the numerous leaves and sticks deposited on the lawn over a long period showing how this grass does not grow tall and require constant mowing, yet still has good even coverage and colour.

7. *Austroanthonia bipartita* var Bunderra (Bunderra Wallaby Grass) produces significant amounts of foliage year round.



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8. Wallaby Grass planted in rows amongst vines.

9. *Austrostipa scabra* (Rough Spear Grass) which occurs widely through southern Australia and is frequently found on roadsides. Flowers with purple colouration on stems up to 500mm.

10. *Themeda triandra* 'Burrill'. Taller and more leafy than 'Tangara' and not as purple in colour.

5. Provenance boundaries. The use of very tight provenance boundaries is a technique that has been borrowed from revegetation works involving trees and shrubs. All the scientific studies indicate that these boundaries are not appropriate for grasses. For more information on this, the Native Seeds website links to an interview with Prof. Wal Whalley.
6. Inappropriate seed mixes. Some seed mixes that are called 'Native Grass Mix' are often dominated by annual and perennial ryegrass and have as little as 5% native grass content. Mixes such as these never provide a native grass cover.

SUMMARY

There are many, many species of Australian native grasses that are suited to lawn and landscape applications, and most are rarely considered. Seed supplies, sowing methods, agronomic knowledge and success rates have improved dramatically over recent years so there is no reason to have any 'fear of the unknown' about these grasses. Instead, there are opportunities to provide distinctive and impressive landscapes featuring their splendour by just following recommended methods of use.



11. Mature height of Griffin *Microlaena* in a seed production paddock where it receives both irrigation and fertilizer. Clearly it does not grow very high, but has a thick and dense coverage closed to the ground. It was selected for turf use by the University of New England.

AUSTRALIAN NATIVE GRASSES

Cool-season Types

- *Microlaena stipoides* (Weeping Grass): a natural turf-forming grass, highly shade tolerant, soft texture, very persistent once established, can be mowed close for a lawn or left uncut
- *Austrodanthonia* spp. (Wallaby grasses): 32 native species, vary substantially in height, leaf texture and leaf width, also have different soil preferences and tolerances, suit a wide range of situations
- *Poa* spp. (Tussock grasses): best used in mass planting in cool, wet, almost swampy conditions, don't do well in dry, harsh situations (may look good for a year or so but ultimately will not survive)
- *Austrostipa* spp. (Spear grasses): many species that range from small to quite tall, all are very hardy and withstand drought better than most other species, happy in very shallow soils, showy seedheads

Warm-season Types

- *Themeda triandra* [syn *T. australis*] (Kangaroo Grass): benchmark of Australian native grasses, occurs from alps to coast - north, south, east and west – decorative seedheads, seasonal colour, adaptability and low maintenance make it an exceptional plant for landscaping and revegetation
- *Bothriochloa macra* (Redgrass): the original "grows on the smell of an oily rag" grass, loves cracking clay soils, will provide grass cover under drought and does not mind shade