

# Renewed interest in native grasses

By Cindy Benjamin

After a relatively brief courtship with exotic grasses, there is a renewed interest in establishing Australian native grasses for pasture, conservation, rehabilitation, amenity and even for human consumption.

Ten percent of the world's grasses are native to Australia and yet we have a long history of relying on exotic species.

Government botanist, Fred Turner, studied the economic value of native grasses on pastoral land throughout western NSW, northern Victoria and southern Queensland in the 1880s and 90s. Even then many grasses had been introduced from Europe and were only successful in regions with similar climates.

After World War II, with the advent of chemical fertiliser and machinery suited to large scale cultivation, vast areas of native grasslands were replaced with introduced species. This was partly in response to the degradation of native grasslands to favour weeds and less palatable grasses.

Desirable native grasses were largely overlooked because the Australian species were not 'domesticated' to allow commercial seed production and collection. Research and development of several native grasses over the last 30-40 years has generated a significant bank of native grass species suited to a variety of uses and available in commercial sowing quantities.

Dr Ian Chivers of Native Seeds P/L believes more effort should be put into se-

lecting, breeding and domesticating Australian native grasses in a production based system rather than wild harvest.

**Domestication of a wild species:** Commercial pasture plants and crops have sometimes thousands of years of plant breeding behind them but to date no Australian native grass has yielded a commercial commodity grain. One of our rice-like species may be the first, if Native Seeds founder and proprietor Ian Chivers has anything to do with it.

To develop a commercial species that can be cultivated rather than gathered as wild harvest generations of careful selection for critical attributes are needed.

'In summary, we select plants that possess the qualities that we want in the final grain or fodder product, then these plants are bred to improve their cultivation characteristics,' says Ian.

'Most wild species generate a seed head when the conditions are right and then drop their seed in a manner that best promotes the dispersal and survival of the next generation.'

Domestication of a wild grass species to allow commercial harvest centres on all the plants maturing within a short time and retaining seed in the seed head. Sounds simple enough but even this can take years of careful breeding and selection.

**Weeping grass-food and fodder:** Weeping grass (*Microlaena stipoides*), a distant relative of commercial rice, is a very valuable native pasture grass that grows in all types of environments except the very dry regions. Now that



Native Seeds P/L trial plots provide important information for variety selection.

several cultivars have been developed, the species also has potential for revegetation

of stream banks, grain for human consumption, landscaping and turf.

## PASTURE MATTERS - Sowing native pastures



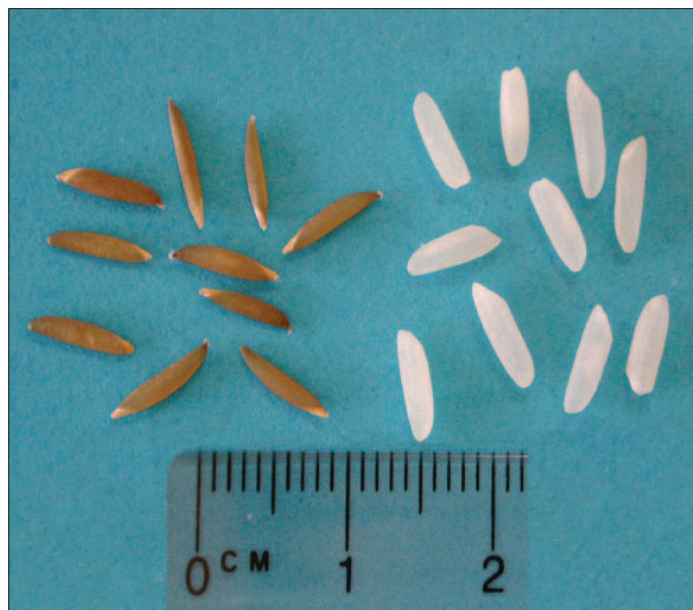
Native Seeds P/L is actively involved in the development of Australian native grasses for a wide variety of uses.

Associate Professor Wal Whalley, an Honorary Fellow in Botany at the University of New England, led the *Microlaena* project at UNE, where efforts to develop commercial varieties began in the mid-1980s.

Three varieties evolved: Griffin, a fine, soft turf; Shannon, a low growing, dense amenity variety for roadsides and golf course roughs; and Wakefield, a leafy forage variety. These three varieties of *Micro-*

*laena* were registered under Plant Breeders Rights by UNE in 1995, following support from a number of funding bodies. In 2006, the project's commercial partner Native Seeds P/L presented the first royalties cheque from commercial seed sales to UNE.

Ian has continued to invest a lot of effort in the development of another cultivar of native grass *Microlaena* that he calls 'alpine rice'. The processed seed is moderately



Alpine rice grains on the left, common rice on the right.



Pictured are seeds of weeping grass (*Microlaena stipoides*).

large and has performed well in baking tests. The seed can be cooked using a variety of methods including frying, boiling, microwaving, baking and cracking (for tabouli).

While more expensive than wheat it can be used in bread, puddings and muesli. The seed tests at 20-22 percent protein, with good mineral content and no gluten. To compare, 'normal' rice has a protein content of 9 percent, the best hard wheats

are 12-14 percent and the new high protein maize varieties are 18 percent protein.

In the plant breeding program Ian has selected plants on the basis of seed head architecture and seed retention, both important for commercial harvest.

Alpine rice is a short, dense grass offering good fodder value with high protein, and good palatability, requiring very little fertiliser and no irrigation and is a perennial that persists well in higher

# PASTURE MATTERS - Sowing native pastures



*Microlaena stipoides* is a valuable pasture grass suited to a wide variety of districts and is now available in commercial quantities for sowing.

rainfall zones. Being a perennial it provides groundcover year round and does not

need to be re-sown every year, significantly reducing the cost of grain production.



Native Seeds P/L founder and director Dr Ian Chivers on a study tour of native grass and wildflower production in the USA.

Ian has worked with Wangaratta farmer, Darren Vincent to develop a system

where a 10-20 hectare paddock of alpine rice can be successfully managed for both fodder and grain harvest.

The grass can be grazed from January to August, then locked up to conduct weed control and allow the plants to set seed. The seed is ready for harvest by the end of December.

**16 of the best:** In his book, *Australian native grasses-a manual for sowing growing and using them* Ian provides practical information about the use and establishment of 16 of our most common native grasses. These grasses are now all available in commercial quantities for sowing. ■

■ **For further information:** *Australian native grasses: A manual for sowing, growing and using them*, IH Chivers & KA Raulings (2009). or visit the website [www.nativeseeds.com.au](http://www.nativeseeds.com.au)

Grass	Revegetation	Landscaping & gardening	Lawn	Pasture	Horticulture
<b>Warm season grasses</b>					
Kangaroo grass	●	●		●	
Redgrass	●	●	●	●	
Mitchell grass				●	
Tall windmill grass	●	●	●	●	
Windmill grass	●	●		●	●
Curly windmill grass	●	●	●	●	●
Silky or Queensland bluegrass	●	●		●	
Barbed wire grass		●		●	
Cotton panic grass		●		●	
Black spear grass				●	
<b>Cool season grasses</b>					
Wallaby grass	●	●	●	●	●
Weeping grass	●	●	●	●	
Wheat grass	●			●	
Red anther grass		●			
Spear grasses		●			
Tussock grass		●		●	