pastures australia
A collaboration between AWI, GRDC, MLA, RIRDC and Dairy Australia

Weeping grass

Scientific name(s)

Microlaena stipoides ssp. *stipoides*

Strengths

- Perennial species with good persistence under grazing
- Extremely tolerant of acid soils
- Tolerant of drought conditions
- Responsive to summer rainfall events

Limitations

- Seed can cause contamination problems. However this can be minimised by heavy grazing in the early spring.
- Can be slow to establish from seed.

Plant description

Native winter-active perennial grass that produces dense, erect or semi-prostrate foliage. It has a short non-adventurous rhizomatous root system.

Pasture type and use

A persistent grass that is suited to permanent pastures. Can be grown either alone or in mixtures with other native grasses and annual legumes.

Where it grows

Rainfall

Adapted to the high rainfall (greater than 500 mm) areas of Australia. In Eastern Australia it is found from Cape York to Tasmania. It is also found in South Australia and south-west Western Australia.

Soils

Suited to soils with a pH of less than 6.0 ($CaCl_2$). Some ecotypes have a broad range of pH adaptation (pH 3.8 to 8.0), including alkaline soils, but most prefer acidic soils. It grows in a wide variety of soils, including loams and clay soils.

Temperature

Weeping grass is a cool season grass that is suited to areas with mild to warm summers and cool to mild winters. Good frost tolerance.

Establishment

Companion species

Can be grown either alone or in mixtures with other native grasses and annual legumes. This grass needs to be grazed short (1-3 cm) to ensure that clover germination is not suppressed in the autumn.

Sowing/planting rates as single species

5-10 kg/ha

Sowing/planting rates in mixtures

2-5 kg/ha, however this rate has not be tested.

Sowing time

Good establishment can be achieved from either a spring or autumn sowing depending on the location and weed problem. Spring sowings are favoured on the tablelands in NSW where conditions during winter are harsher and the spring-summer period is more favourable for growth. Late autumn-winter can be a good time for sowing in other areas, if soil temperatures are not too low, as the risk of moisture stress will be minimised. Seedlings will grow very slowly during winter, but will quickly make up for this in early spring.

Inoculation

Not applicable

Fertiliser

Phosphorus and sulfur will be required to promote good grass and clover growth. Annual applications of these nutrients will depend on soil nutrient levels. A maintenance dressing (at average stocking rates, 5-7 DSE/ha) is usually 125 kg/ha of single superphosphate (11 kg P/ha, 13.8 kg S/ha).

Grazing/cutting

Seed production

High seed yields are possible under favourable growing conditions, as this species is capable of prolonged periods of continuous seed production. Two or three crops per season should be possible if irrigation is available, with each crop yielding three to four successive harvests at intervals of 5-7 days. Seed yields are generally low in the first year; however, subsequent yields of 375 kg to 570 kg/ha have been regularly achieved by breeders. A variety of harvesting methods have proven successful, including the use of vacuum harvesters such as the ‘Flymo’ hand held, and brush harvesters such as the ‘Trangie’ and ‘Grass-Hopper’ machines. If you are using a vacuum harvester it is important to use a machine that does not pass the seed through a fan, as this will cause severe physical damage to the seed, reducing germination and viability.

Ability to spread

Has some ability to spread vegetatively, via its short rhizome. If conditions are right, it can recruit from seed, but generally this only occurs into areas of bare ground.

Weed potential

Low weed risk

Major pests

Weeping grass is susceptible to attack by lucerne flea, thrips, aphids, army worm and cut worm.

Major diseases

Ergot on the seed may be a problem in warm, moist seasons.

Herbicide susceptibility

Herbicides are available to selectively control broadleaf weeds. Extensive research has been undertaken on the herbicide tolerance of weeping grass. This has ranged from pre-emergent to mature plants (Cole And Metcalfe 2003).

Animal production

Feeding value

Produces high quality feed (10 to 27% crude protein) that is also highly digestible (55 to 80% dry matter digestibility). Dry matter production up to 7.4 t DM/ha has been recorded for weeping grass.

Palatability

Production potential

Valuable feed for maintenance, particularly in the undulating and hilly land with moderately infertile, acid and shallow soils.

Livestock disorders/toxicity

There are no known animal health problems associated with this grass.

Cultivars

Ovens (LIGULE 183): This grass was developed in the LIGULE (Low Input Grasses Useful in Limiting Environments) program. LIGULE was a collaborative project between the NSW Department of Land and Water Conservation and Department of Primary Industries Victoria funded by Meat and Livestock Association, the Land and Water Resources Research and Development Corporation. Ovens Weeping grass was selected from a grass population that originated in the wheat-sheep zone near the NSW -Victorian border and has considerable heat and drought tolerance. It is a larger plant which produces considerable dry matter of high grazing quality.

Bremmer (LIGULE 704): This grass was also developed in the LIGULE program. It was selected from a grass population that originated in the medium rainfall zone in southern NSW where grazing is the principal activity. Bremmer Weeping grass is an upright plant with medium textured leaves and a strong tolerance to acid soil conditions.

Shannon: This variety was bred by the University of New England for revegetation and pasture applications. It has performed well on very shallow soils under exposed conditions. It grows well in higher altitude situations having performed extremely well in the higher test sites of north-east Victoria, but also persists well at lower altitudes.

Griffin: Griffin Weeping grass is ideal for a high quality lawn and for passive recreation. Once established, it is low maintenance and requires minimal watering. It grows in shade. This variety was developed by the University of New England.

Wakefield: Wakefield weeping grass was selected for pastoral use. This variety was developed by the University of New England.

Tasman: This variety was bred by Native Seeds Pty Ltd especially for the turf and amenity market in the cooler climates of Australia. It has a deep green colour, is fine textured and has dense foliage. When fully established, it is very hardy and can withstand hot, dry conditions.

Burra: Burra Weeping grass was developed by Native Seeds Pty Ltd. It is a versatile all round grass with a deep green colour. It has high drought tolerance and is tolerant of acid soils. Burra is well suited for lawns or for revegetation.

Further information

Waters C, Whalley W, Huxtable C (2001) ‘Grassed up. Guidelines for revegetating with Australian native grasses.’ (NSW Agriculture: Orange)
http://www.agric.nsw.gov.au/reader/gu-quickref/gu712.htm
http://www.agric.nsw.gov.au/reader/gu-species/gu81mic.htm

Cole IA, Metcalfe J (2003) Management guidelines for seed production of Australian grass cultivars. 2nd edn. (Department of Infrastructure, Planning and Natural Resources: Sydney)

Cole IA, Metcalfe J (2004) The effects of herbicides on Australian native grasses, a database of published literature. (Department of Infrastructure, planning and Natural Resources: Sydney)
http://www.acmer.uq.edu.au/publications/attachments/DIPNRseedprod2ndedn.pdf

http://www.nativeseeds.com.au/categories.asp?cID=54
http://www.nativegrasses.com.au/revegetation.html

Acknowledgements

Information has been adapted from:
Waters C, Whalley W, Huxtable C (2001) ‘Grassed up. Guidelines for revegetating with

Australian native grasses.' (NSW Agriculture: Orange)

Cole IA, Metcalfe J (2003) Management guidelines for seed production of Australian grass cultivars. 2nd edn. (Department of Infrastructure, Planning and Natural Resources: Sydney)

Cole IA, Metcalfe J (2004) The effects of herbicides on Australian native grasses, a database of published literature. (Department of Infrastructure, planning and Natural Resources: Sydney)

Author and date

Meredith Mitchell

July 2007