

Panics

Scientific name(s)

Panicum maximum var. *trichoglume* (green panic), *Panicum maximum* (Gatton panic)

Strengths

- Leafy plant producing high quality palatable forage, with good production on fertile soils
- Responds quickly after rain
- Moderately tolerant of drought
- Green panic is tolerant of shade

Limitations

- Requires soils of moderate to high fertility
- Intolerant of waterlogging
- Sensitive to frost

Plant description

Plant: generally erect, tussocky, leafy, perennial grass; clones are shortly rhizomatous, and tussocks can grow up to 50 cm in diameter

Stems: slender, branching and from .5 - 1.5 m tall

Leaves: green, glabrous to hairy, 40 - 100 cm long, up to 1.4 cm wide

Seedhead: a large open panicle 18 - 25 cm long and 15 - 18 cm wide

Seeds: vary from a dull green to straw in colour, 1.5 million seeds/kg

Pasture type and use

Summer growing perennial grass that is used widely in cattle grazing systems. Highly palatable plant with good forage quality when green. Green panic is tolerant of shady conditions.

Where it grows

Rainfall

500 - 1500 mm/ann (subtropics); > 425mm/ann (Western Australia)

Soils

Well adapted to a wide range of soils except heavy clays including sands, loams and lighter clay soils of moderate to high fertility. The species is intolerant of waterlogging.

Temperature

Summer growing grass with most production occurring in the warmer months. Plants frosted are in winter but shoot in early spring when moisture is available. Heavy frosting can cause plant mortality after heavy grazing in the late summer and autumn.

Establishment

Companion species

Grasses: May be sown with Rhodes grass (*Chloris gayana*), creeping blue grass (*Bothriochloa*

insculpta) digit grass (*Digitaria eriantha* spp *eriantha*) tall finger grass (*Digitaria milanjiana*).

Legumes: Sown frequently with legumes, including the annual winter growing medics (*Medicago* spp.), sub clover (*Trifolium subterraneum*) and biserrula (*Bisererrula pelecinus*); and the summer growing legumes lucerne (*Medicago sativa*), stylo (*Stylosanthes* spp.) desmanthus (*Desmanthus virgatus*), butterfly pea (*Clitoria ternatea*), siratro (*Macroptilium atropurpureum*), glycine (*Neonotonia wightii*) and leucaena (*Leucaena leucocephala*).

Sowing/planting rates as single species

Sown at 2-4 kg/ha; seed quality is usually high; it is advisable to sow seed harvested the previous season as fresh seed is likely to be dormant.

Sowing/planting rates in mixtures

Sow at a pro rata rate depending on the number of species sown in the mixture; sowing rate is unchanged when sown with legumes; if sowing with lucerne, reduce lucerne sowing rate to 0.75 kg/ha to minimise competition.

Sowing time

In summer dominant rainfall regions sow between mid-January and mid-March to coincide with the highest probability of post-sowing rain; however, if there is a profile of subsoil water, sowing may be planned for mid-November or December (perhaps into standing winter crop stubble), or from late August-early September.

In winter dominant rainfall regions an early spring sowing is recommended.

Inoculation

Not applicable

Fertiliser

Generally sown on fertile soils; responds to N fertiliser, possibly to P and S on very alkaline soils.

Management

Maintenance fertiliser

Generally sown with legumes that supply N. In grass pastures without legumes, provision of N at 100 kg N/ha/ann may be used selectively, particularly for seed production.

Grazing/cutting

Withstands heavy grazing during good seasons but this is inadvisable during dry periods as recovery will be slow. Similarly, heavy grazing is not advisable in the autumn as plant mortality can occur due to frosting. Graze lightly during the establishment year.

Seed production

Seed matures unevenly from the top of the seedhead to the base over a long period, and sheds seed as it matures.

As it matures, seed colour changes from purplish to bleached blue-green. The seed feels gritty and can be stripped from the seed head.

Seed is usually direct-headed, though some crops are windrowed for 2-3- days before being picked up with a header. Direct heading harvests about 20-25% of the seed. 60% may be harvested by repeated passes with a beater harvester.

Seed yields of 100-180 kg/ha have been obtained in raingrown stands and up to 400 kg/ha when irrigated.

Ability to spread

Does not colonise readily except during wet conditions.

Weed potential

Very low

Major pests

No significant insect pests.

Major diseases

No significant diseases.

Herbicide susceptibility

Atrazine can be used for weed control in P. maximum at 4 L/ha. 'Gatton' can tolerate over 4.5 kg/ha AI of atrazine.

Broadleaf weeds can be controlled using pre-emergent 2,4-D ester. P. maximum is susceptible to glyphosate to selective grass herbicides (young plants), and to diuron I. Mature plants are also susceptible to 2,2-DPA plus paraquat.

Animal production

Feeding value

Digestibility ranges from 64% (2 week regrowth) to 50% (8 week regrowth), and crude protein from 6-25% depending on age and N supply. In 12 week old regrowth, crude protein values range from 5-10%, P from 0.15-0.18%, Ca from 0.6-0.8% and Na from 0.07-0.12%.

Palatability

Is well eaten by all livestock, with particularly high intakes of young leafy growth.

Production potential

DM yields of 5 - 20 t/ha (commonly 10 t/ha) if high levels of N applied).

Live weight gains of up to 0.8 kg/head/day are measured, depending on stocking rate and N fertiliser rate.

Livestock disorders/toxicity

'Petrie' may cause 'big head' in horses, and hypocalcaemia in ruminants, due to oxalate accumulation.

Pastures dominated by panic may cause photosensitisation

Cultivars

'Petrie' green panic (suited to fertile soils)

'Gatton' panic (superior to green panic on soils of lower fertility)

Cultivar	Seed source/Information
Petrie green panic	Australian Herbage Plant Cultivars Southedge Seeds Heritage Seeds Progressive Seeds
Gatton panic	Australian Herbage Plant Cultivars Southedge Seeds Heritage Seeds Progressive Seeds

Neither cultivar is protected by Plant Breeder's Rights Australia

Further information

Loch, D.S., Hopkinson, J.M. and Conway, M.J. (1996) Seed production recipes. In 'Tropical pasture seed production - a training manual' p.101. Ed. I.J. Partridge (The State of Queensland, Department of Primary Industries 1996)

QDPI link to Green panic

Author and date

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