Cocksfoot *(Dactylis glomerata)*

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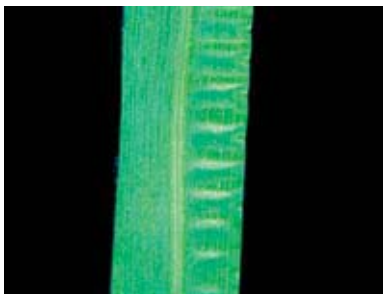
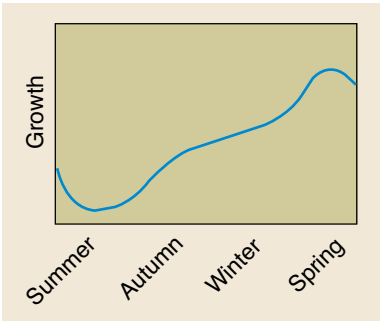
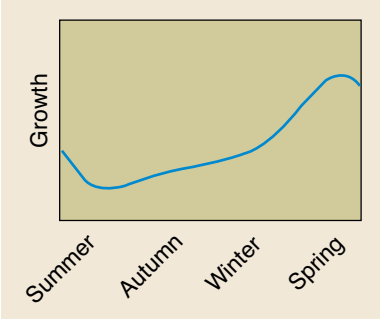


Ligule

Seasonal growth patterns



Mediterranean types



Intermediate types

Features

- persistent, acid-tolerant perennial tussock grass
- mostly summer-dormant with high drought tolerance
- contains no substances harmful to animals
- does not tolerate waterlogging
- requires rotational grazing, particularly with sheep.

Cocksfoot is a tussock grass native to Europe, northern Africa and temperate Asia. It has been introduced to other temperate parts of the world including North and South America, South Africa, New Zealand and Australia because of its value as a pasture plant. Cocksfoot is valued throughout the world for its better persistence than perennial ryegrass on soils prone to drying out quickly and of moderate fertility.

In Australia, the area planted to cocksfoot has expanded, particularly in the eastern States, from the poorer and drier parts of dairy farms in the high rainfall zone to the sandy or shallow soils in wool producing areas with moderate rainfall.

Varieties of cocksfoot available in Australia can be classified into two main groups – 'Mediterranean types' with moderate to high summer dormancy and 'intermediate types' which are more summer-active.

Establishment

Cocksfoot possesses a small, very light seed averaging about 1.3 million/kg. It needs to be sown close to the surface at a depth of 10 mm or less on most soils. The suggested rate is 2-3 kg/ha when sown alone. A rate of 2.5 kg/ha gives about 240 viable seeds/m^2.

Cocksfoot is best sown in autumn. Early growth is slow, although it is generally more vigorous than phalaris and tall fescue.

Livestock disorders

Cocksfoot does not contain any substances harmful to animals.

Description

- tussock-forming perennial up to 1.5 m high with strongly flattened vegetative shoots
- greyish-green to green foliage, leaves are long (up to 80 cm) usually flat but may be folded lengthwise to give a shallow V-shaped cross-section
- white translucent ligules 2–10 mm long
- leaf sheaths very much flattened, hairless, prominent keel
- inflorescence is an erect one-sided panicle, 10–20 cm long, with the upper branches close together and the lower ones more widely spaced. The spikelets are in dense clusters at the end of the branches.

Soil–climate adaptation

Rainfall: >500 mm (south coast >425 mm)

Season length: >6 months

Drought tolerance: High

Frost tolerance: Moderate

Soil type: Well-drained, sand or loam over clay or gravel

Soil fertility requirements: Moderate

Soil pH_{Ca}: >4.0

Aluminium tolerance: Moderate

Waterlogging tolerance: Low

Salt tolerance: Nil

Nutritive value

DMD: 53-79%

ME: 7.3-11.3 MJ

Crude protein: 8.5-27.8%

Environmental benefits

Cocksfoot's groundwater recharge control is poor as it does not have a deep root system. Most of the roots die back over summer and then regrow in autumn.

Management

When cocksfoot seedlings are sufficiently anchored in the ground (six to eight months after sowing) they can be lightly grazed to promote tillering and stimulate crown formation. Cattle are preferred for this task but if only sheep are available, graze for short durations to prevent defoliation of young plants. Rotationally graze to maintain a height of about 5-7 cm (about 1500-2000 kg DM/ha). If plants are stressed, then graze lightly or delay grazing until after flowering.

Cocksfoot can persist well with proper management, particularly under cattle. Established swards are best managed with rotational grazing however they can tolerate set-stocking during winter and spring. The best grazing management is one that prevents over-grazing and minimises grass content in summer and autumn to maintain vigorous growth and a good legume density. The pasture should be maintained at about 1000-2500 kg DM/ha, i.e. around 3-8 cm in height.

Cocksfoot stands can thin out quickly under sheep if not carefully managed, particularly during hot dry summers. However, if grazing is controlled cocksfoot can persist. Avoid heavy close grazing that damages the crown of the plant or lax grazing that produces tall, rank growth of low digestibility.

Cocksfoot responds to increasing soil fertility. New sowings require fertiliser to promote early root development and enhance seedling vigour. Mature stands should have major deficiencies corrected on the basis of soil tests. Cocksfoot, like all grasses, responds to nitrogen either via a companion legume or fertiliser application. It makes good quality hay or silage.

Companion species

Cocksfoot combines well with subterranean clover, lucerne and serradella.

Cultivars

While most of the cocksfoot cultivars have been available for many years, recently the Department of Primary Industries in collaboration with the University of Tasmania released three new varieties.

The cultivars can be grouped according to their relative growth in winter and summer, which reflects their origins from the Mediterranean region (winter-active, summer-dormant) to temperate Europe (low winter growth, summer-active).

Mediterranean type, moderate to high summer dormancy

'Kasbah' (public variety) – has good growth from late autumn to mid-winter but growth in late winter and spring is poor. Kasbah flowers in early September, about one month earlier than Currie. This variety is highly summer-dormant and survives summer drought better than Currie. It is useful in dry locations for short-term rotations.

'Sendace'(Φ) – is a new variety developed in Tasmania from germplasm collected in Spain with good drought and cold tolerance. It has a prostrate to semi-erect growth habit with a high tiller density and moderate to high summer dormancy.

'Uplands'(Φ) – is a new variety developed in Tasmania from germplasm collected in Spain. It has a semi-erect to erect growth habit and moderate summer dormancy similar to Currie.

'Currie' (public variety) – derived from germplasm collected in Algeria. Persistent and productive and grows well from autumn through to spring. Summer growth depends on rainfall and temperature. Persists well on sandy soils.

'Porto' (public variety) – derived from germplasm collected in Portugal. Porto is more productive than Currie, particularly in autumn and winter but is less drought-tolerant. Matures about one week later than Currie. Good potential production in summer if moisture is available.

Intermediate type, summer-active

'Cambria' (public variety) – a new variety with year-round production.

'Grasslands Kara'(Φ) – was bred in New Zealand to replace Grasslands Apanui. Improved winter growth and disease resistance. Upright growth habit more suited to cattle than sheep. For persistence it should be rotationally grazed. Flowers about three weeks later than Porto. It is suited to dryland dairy production and high rainfall beef enterprises.

'Grasslands Tekapo' (public variety) – replacement for Grassland Wana was bred for improved nutritive value. It has moderate drought tolerance but in field evaluation in WA had lower persistence than Currie or Porto.

'Grasslands Vision'(Φ) – was selected by crossing Grasslands Kara with Grasslands Wana. The morphology is intermediate between the parents, although more like the erect Kara than the prostrate Wana. Grasslands Vision is intended for use on dairy farms and is slightly more persistent and productive than Kara.

'Megatas'(Φ) – a new summer-active variety developed in Tasmania.

Cocksfoot (foreground) has good persistence in dry summers providing it is not grazed heavily

Source: Moore, G, Sanford, P & Wiley, T 2006, *Perennial pastures for Western Australia*, Department of Agriculture and Food Western Australia, Bulletin 4690, Perth.