



Oats (*Avena sativa*) Technical Note F25

Management level	★★★
Yield	★★★
Quality	★★★★★
Water use efficiency	★★★★★
Reliability	★★★
Versatility	★★★★★

Where ★★★★★ is the highest rating.

Varieties

Many varieties and consistently changing to improve resistance to leaf rust. Primary source of green forage during winter and spring on dryland areas that receive <800 mm rainfall/year. Versatile plant, can be grazed, hayed or ensiled. Varieties classified on:

- Resistance to leaf rust
- Growth form (prostrate or erect)
- Early growth rate (medium or quick)
- Late growth rate (medium or late)

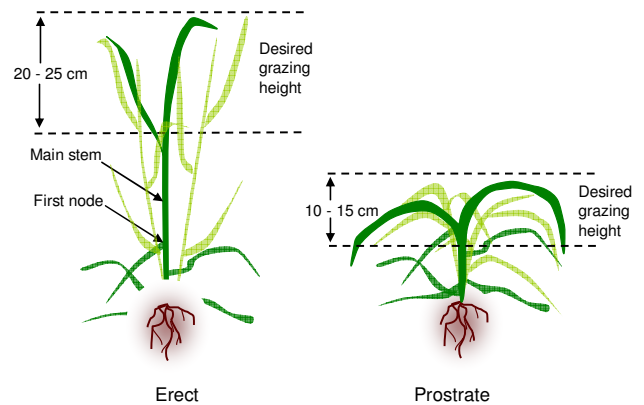
Establishment

Plant mid march to mid June in southern Queensland, a month later in central Queensland when soil temperature 15 - 25oC mid afternoon. Recommended planting depth is 5 - 7 cm deep, though it can be planted to 10 cm if moisture is present. Row spacing 15 - 23 cm, wider rows 76cm sometimes used to minimise rust infestation. Seeding rate 40 - 60 kg /ha for raingrown and 80 kg/ha when irrigated or grown for hay.

Weeds can generally be managed by seedbed preparation and grazing. Keep in mind that oats is more sensitive to 2,4 D than other cereals.

Water use

Usually dependent on stored moisture for a substantial part of the growth, therefore plant into soils with a high plant available water content.



An oat plant with (a) an erect growth and (b) a prostrate growth habit showing the optimum grazing height as just above the first node.

Diseases

Leaf rust (or crown rust) forms small, yellow-orange pustules on leaves is very prevalent. Stem rust, large, red pustules on stem and leaf,) can be severe. Red tipped oats can be a problem on the Darling Downs, reducing growth and making oats unpalatable and sometimes poisonous to stock.

Leaf rust favoured by cool, moist weather, stem rust by warm, moist weather. Minimise by;

- Avoid early sowings.
- Use adequate N, P.
- Graze off if rust becomes visible.
- Select resistant varieties.
- Control out of season wild oats, oats and broome grass.

Growth and grazing

After germination, rain is needed to establish secondary roots and for continued growth. Graze soon after secondary roots formed, usually 6 - 8 weeks after sowing, and avoid removing growing points, graze just above the first node (see Figure above).

Quality (% DM)	Average		Minimum		Maximum	
	Silage	Graze	Silage	Graze	Silage	Graze
Crude protein	17.5	21.1	12.3	10.5	23.9	30.8
Starch	3.6	5.0	0.1	1.9	13.9	10.5
Sugar	9.5	18.1	4.0	9.0	21.6	24.7
NDF	48.9	42.4	45.1	33.4	55.2	53.3
Fat	4.7	4.4	3.6	2.7	5.5	6.5
ME (MJ/kg DM)	10.1	11.0	9.4	9.5	11.1	12.3
DM (%)	39.0	21.3	30.3	9.7	50.0	35.3

Range in quality of oats when grazed or harvested for silage

Optimum defoliation height pre-grazing for prostrate varieties is 10 - 15 cm, and for erect varieties 20 - 25 cm. Residual height post-grazing is 5 - 10. Residual height <5cm will severely reduce regrowth and plant persistence.

Expected yields are 1 - 2 t DM/ha at each grazing, and total yield 5 - 7 t for raingrown and 7 - 10 t DM/ha under irrigation.

Animal health

Hypomagnesemia, hypocalcaemia and nitrate poisoning can occur in older cows grazing lush oats. Prevention can be achieved by avoiding hunger and feeding Causmag at 50 gm/cow/day, and administering Calcigol (grass tetany and milk fever) or methylene blue (nitrate).

Silage

Suited to silage or hay. Highest quality occurs when crops are cut early at flowering or early boot stage and wilted. Yields up to 10 t DM/ha can be achieved for crops grown on fertile soils and received good rainfall. Chop to 1 cm to aid compaction of hollow stems.

Further information

Contact the DAFF Customer Service Centre by Phone 13 25 23, or Email callweb@daff.qld.gov.au

More technical notes can be found at: www.dairyinfo.biz

Kaiser et al. (2003). TopFodder; Successful Silage.

Hennessy and Clements (2009) Cereals for grazing.

Winter (2013) Forage oat variety guide 2013

Callow et al. (2013) Successful Dairy Production in the Sub-Tropics

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