

## Forage Sorghum and Millet

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### Role of Forage sorghums and millet

Forage sorghums given adequate water and nutrition are capable of high growth rates and can produce a large biomass. Forage sorghums are suited to northern areas but growth rates may be adversely affected by low temperatures. Millets are more tolerant of low temperatures at planting but are not capable of the high dry matter production of forage sorghum.

Both forage sorghum and millet are water efficient and suffer minimal pest and disease problems.

### Plant types

**Forage sorghums.** These are a cross between sorghum and sudan grass and are the most popular. Some are derived from “sweet sorghums” which have higher soluble sugar content. The (brown midrib) BMR gene which results in reduced lignin content and increased digestibility has been introduced into sorghum and sudan grass. Some contain a photoperiod sensitivity gene that results in delayed flowering and potentially greater production.

**Sudan grasses.** These have finer stems and leaves than sorghum but tend to have lower biomass yields. The main advantages of these are their lower prussic acid content, making them safer to graze.

**Millet.** Millet is quick maturing and produces less biomass than forage sorghum and sudan grass. There is no risk of prussic acid poisoning with millet.

### Paddock selection

For reliable high yielding fodder crops, a large amount of moisture from stored soil moisture and rainfall is required. Where crops are planted on limited stored moisture growers need to be aware of the risk of poor yield.

Like all grass crops Nitrogen (N) nutrition is crucial for high yield. An initial application of 50- 100 units of N depending upon soil test results will be needed and further surface applied N during the season should be considered. Phosphorus and Sulphur nutrition is also important and growers should be guided by soil test results.

### Agronomy

Sorghum and millet should be sown into good moisture with appropriate seed-soil contact. Millet seed is relatively small and should not be sown too deep. If possible choose paddocks with capacity for high moisture storage and a relatively low population of grass weeds. Once established forage sorghums will compete well against weeds.

### Prussic acid and nitrate poisoning

All sorghum and sudan grass forages can produce cyanogenic glucosides which can be converted to prussic acid inside the rumen. Prussic acid is a toxin which inhibits release of oxygen from the blood. Sudan grasses and forages with a sudan grass parent have a lower risk compared to sorghum. Avoid grazing until crops are over 50cm high as leaves have higher levels of prussic acid than stem and avoid early regrowth. Avoid grazing drought-stressed crops.

There is also a risk of nitrate/nitrite poisoning when there is a high availability of soil nitrate and growing conditions do not allow the plant to convert nitrate into plant proteins. Nitrites interfere with oxygen absorption by blood. Ruminant animals may convert nitrate into nitrite which is more poisonous. Sorghum, sorghum/ sudan grass crosses and millet can all accumulate dangerous levels of nitrate/nitrite. Avoid grazing stressed crops,

In general feeding problems can be reduced by feeding hungry stock on safer feed before introduction to high-risk crops, introduce smaller numbers of stock initially, observe stock upon introduction and seek advice. Crops can be tested for prussic acid and nitrate.

### Grazing Management

As with all grasses, young leaves and shoots have the highest nutritional value, as the plant matures digestibility, metabolisable energy and protein will all decline. Forage sorghums are best grazed while they are still in the vegetative state but have gained sufficient height to reduce the risk of prussic acid poisoning. Sweet sorghums due to higher sugar content continue to provide quality forage to later growth stages compared to other types. Millets can be grazed once they are well anchored; allowing plants to reach around 20cm height will aid recovery from grazing. Grazing management will be easier if the total sown area is spread across several paddocks and several different sowing times. Application of nitrogen after grazing if growing conditions are suitable will improve protein levels. Consider providing supplementary sulphur to stock.

Table: Forage sorghum varieties

Variety	Type	Maturity
Super Sweet Sudan	Sweet Sudan X Sudan	Medium
Betta Graze	Sorghum X Sudan grass	Quick
Mega Sweet	Sweet Sorghum X grain sorghum	Late
Graze-N-Sile	Sorghum X Sorghum	Medium
Nudan	Sudan grass X Sudan grass	Medium _ Late
BMR Rocket	Sorghum X Sudan grass	Quick
BMR Octane	Sorghum X Sudan grass	Medium - Late
Sugargraze	Sweet Sorghum X Sweet Sorghum	Late
Superdan 2	Sudan grass X Sudan grass	Late
Sprint	Sudan X Sudan	Quick
Sweet Jumbo LPA	Forage Sorghum X Sudan	Very Late
Centaur	Sudan grass X Sudan grass	Very Late
Astro	Sorghum X Sudan grass	Very Late
Sugar Sweet	Sweet Sorghum X Sorghum Sudan	Very Late
SF Beamer (BMR)	Sudan grass X Sudan grass	Quick
SF Lavish	Sorghum X Sudan grass	Quick
SF Splendour	Sorghum X Sudan grass	Very Late
SF Mustang (BMR)	Sorghum X Sudan grass	Very Late

### More information

NSW DPI “Forage Sorghum and Millet”  
[www.dpi.nsw.gov.au/agriculture/broadacre-crops/forage-fodder/crops/forage-sorghum-millet](http://www.dpi.nsw.gov.au/agriculture/broadacre-crops/forage-fodder/crops/forage-sorghum-millet)

Irrigated summer fodder crops 3: Fodder sorghum  
 Ken Pritchard, Kyabram

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