Seed Force in Australia.

Since its inception in 2006 Seed Force has become the leading innovative proprietary forage seed business in Australia. The business model has been based on aligning with world leading plant breeding companies and institutions in Europe, N & S America, New Zealand and Australia and screening new breeders’ lines against industry standards in Australia. Seed Force then commercialises new varieties that offer significant benefits to farmers over existing commercial varieties in Australia.

Seed Force has now developed an integrated crop and pasture business in Australia covering all major pasture species plus broadacre seed varieties covering winter wheat, spring barley, winter and spring canola.

We also have a very strong range of high performing forage crops from grazing cereals and forage sorghums to forage brassicas, herbs and the exciting re-birth of fodder beets into the Australian market.

Not only do we screen breeder’s lines to find new varieties that can offer significant benefits over existing commercial varieties, we also spend considerable research investment in developing best management guidelines to help producers maximise returns from these crops.

Seed Force has trialed and screened a wide range of forage crop options for filling feed gaps under grazing or for conserving as fodder for feeding back.

The selection guide below can help you select the best crop options to suit your needs. You can then refer to the specific information for that crop in this guide and check any management guidelines to help maximise your returns from that crop.

### Forage crop selection

**Region** | **When required** | **Characteristics** | **Species** | **Variety** | **Planting time**
--- | --- | --- | --- | --- | ---
Southern winter/spring | quick feed, fodder conservation option | oats | SF Colossus | autumn
| quick feed, fodder conservation option | oats | SF Tucana | autumn
| summer/autumn cool climate | early summer feed, winter/spring | triticale | SF Bolt | autumn
| high quality, summer feed, single grazing | | SF O2 | spring
| summer/autumn cool climate | high quality, summer feed, 2-3 grazings | forage rape | SF Greenland | spring
| summer/warm climate | summer feed, focus on quality grazing | BMR sudan grass | SF Beamer BMR | spring
| forage sorghum | SF Flourish | spring
| summer feed, high quality grazing and/or cutting (BMR forage sorghum) | SF Mustang BMR | spring
| summer feed, delayed harvest but maintain quality | PPS forage sorghum | SF Splendour | spring
| autumn/winter | high quality, high yield for strip grazing | mangel beet | SF Brigadier | spring
| high quality, high yield for strip grazing or lifting | fodder beet | SF Lifta | spring
| high quality, high yield for lifting and feed out | sugar beet | SF Sugar | spring
| all seasons | excellent quality, good rain fall, 2-4 years | chicory | SF Punter | autumn or spring
| good quality, harsher summers, 2-4 years | plantain | SF Endurance | autumn or spring

Northern winter | fast feed, highest quality, highest winter yield | leafy turnip | SF Pacer | autumn
| single crop winter feed | | SF O2 | autumn
| winter/spring | highest quality, highest winter/spring yield | forage rape | SF Greenland | autumn
| forage sorghum | SF Flourish | autumn
| quick feed, fodder conservation option | oats | SF Colossus | autumn
| quick feed, fodder conservation option | oats | SF Tucana | autumn
| quick feed, fast maturing fodder option | oats | SF Empire | autumn
| early plant, high quality grazing | winter wheat | SF Moskito | late summer/autumn
| late spring/summer | high quality, high yield for strip grazing | mangel beet | SF Brigadier | autumn
| high quality, high yield for strip grazing or lifting | fodder beet | SF Lifta | autumn
| high quality, high yield for lifting and feed out | sugar beet | SF Sugar | autumn
| summer | summer feed, focus on quality grazing | BMR sudan grass | SF Beamer BMR | spring/early summer
| forage sorghum | SF Flourish | spring/early summer
| summer feed, high quality, grazing and/or cutting (BMR forage sorghum) | SF Mustang BMR | spring/early summer
| summer feed, delayed harvest but maintain quality | PPS forage sorghum | SF Splendour | spring/early summer
| all seasons | excellent quality, good rain fall, 2-4 years | chicory | SF Punter | autumn or spring
| good quality, harsher summers, 2-4 years | plantain | SF Endurance | autumn or spring
Getting the best from Forage Brassicas

Forage brassicas are well established as a valuable tool for livestock producers. They provide sowing options for most seasons to provide high quality feed to fill both quantity and quality feed gaps. They also offer opportunities for crop rotations for disease management and to combat difficult weeds such as barley grass and wimmera ryegrass in grazing and mixed farming situations.

The following pages can help producers to get the best from forage brassicas by providing key information:

- selecting the most appropriate option,
- understanding the time to graze,
- crop agronomy advice,
- grazing management advice, and
- the extra value of sowing better varieties.

Forage brassicas cover the species rape, leafy turnips, turnips, swedes, kale and radish. These forages have outstanding feed quality and water use efficiency across various seasons. When fed as part of a balanced ration they can produce high animal performance especially when traditional pastures have poor quality.

Forage brassicas have been used for winter feed mainly in cold climate regions where extremely cold temperatures, frosts and snow reduce traditional winter feed production. In many parts of Tasmania and the tablelands of NSW winter turnips and kale are sown under cool summer conditions to provide high quality winter feed.

Forage rapes with very late flowering and longer growing seasons can also be sown at this time to produce winter feed with additional re-growth potential. Forage brassicas fit well into livestock production systems and can also provide significant benefits as a high quality summer feed. They can be sown from late winter through spring and provide high quality feed when the existing pasture feed base starts to lose quality.

Forage brassicas are high in quality and can enable liveweight gains to be maintained at similar levels to the spring pasture flush, as well as maintain high milk production when fed as part of the ration to dairy cows. When fed they have a similar feed value to grain, but at a much lower cost.

**Single grazing options**

Turnips can produce very high yields for a one-off grazing, enabling paddocks to be prepared early for re-sowing. They can be sown at low rates (0.8–2kg/ha) and provide feed from 10–12 weeks after planting.

**Multiple grazing options**

Where producers are not planning to early autumn sow, or where they are looking for brassicas to fill the critical autumn feed pinch, forage rapes or leafy turnips offer an excellent option.

Forage rape maintains high quality feed over late summer and autumn. Re-growth from rain will be faster than any early pasture sowing as rape's deep root system ensures good persistence during the hot dry summer and rapid response from autumn rain.

Leafy turnips provide much faster feed as they are more shallow rooted putting reserves into above ground growth. They also have faster regrowth than forage rape.

As such they are best suited to mild growing conditions or where feed is required rapidly.
Forage brassica management

Maximising forage yield

> Forage brassicas will handle a broad pH (CaCl₂) range from 4.6–8.6.
> Ensure up to date soil or plant tissue test information to identify potential nutrient deficiencies.

1. Weed and pest prevention

> Sow into a weed free seedbed.
> Spray any existing weeds with glyphosate and tank mix with insecticide for any pests.
> Consider pre-emergent application of Trifluralin if wireweed is likely to be a problem.

2. Sowing

> Brassicas should be shallow sown (5–10mm) and covered with roller, chain or mesh.
> Sow rape at 3–5kg/ha; turnips at 0.8–2kg/ha, using higher rates for higher rainfall or rougher seedbeds.
> Sow with Triple Super into worked paddocks, use MAP or DAP if direct drilling.
> Sow with around 20kg P/ha, using low sulphur based fertilisers.
> Address any trace element deficiency, especially molybdenum and boron.

3. Monitor and treat for pests

> Forage rape is susceptible at emergence to pests, especially Red-Legged Earth Mite
> We recommend Force Field PLUS, protection for your seed.

4. Apply Nitrogen 3–4 weeks after establishment

> To increase yields apply up to 60kg N/ha (125kg/ha Urea) 3–4 weeks after establishment.
> Do not apply nitrogen within four weeks of feeding off crop.

Grazing the crop

1. Graze at maturity

> Forage brassicas should be allowed to mature to minimise risks of stock health disorders.

2. Transition

> Allow generous transition time for grazing any brassica crop.
> Sudden access can upset the balance of rumen microbes, resulting in poor animal performance, scouring and acidosis.
> When introducing animals to brassica crops, allow stock access to pasture, or feed out hay, straw or silage before grazing the crop.
> Begin grazing the crop for short periods each day, building up to a maximum allowance over a week.

3. Provide fibre

> Forage brassica crops are highly digestible, and don't contain much 'effective fibre', the sort of fibre that makes animals chew.
> Feeding extra effective fibre means more chewing producing saliva which is a rich source of bicarbonate that buffers rumen pH. More effective fibre means less acid in the rumen and fewer digestive upsets.
> Continue feeding out hay, straw or silage even when stock have adjusted to the crop.

4. Break feed

> This ensures that the high quality leaf is balanced with stalks or bulbs.
> This will provide less wastage through trampling and fouling.
> Forage brassicas can also be grazed in conjunction with summer dry pastures or crop stubbles to balance the diet.

5. Animal health

> Be aware of potential high nitrate risks under overcast conditions.
> Grazing high quality brassicas can put animals at risk of pulpy kidney. Ensure that all stock are drenched and vaccinated at least seven days before grazing the crop.
SF Pacer
leafy turnip

**Setting the pace**
SF Pacer has been bred as a replacement for Pasja by its plant breeder. It was selected from four breeder’s lines bred and evaluated for increased yield, improved re-growth and reduced bolting between grazings.

In Australian and New Zealand trials it has shown rapid establishment, fast growth to first grazing and outstanding re-growth.

**FEATURES**
- Fast to first grazing
- Higher yielding
- Improved re-growth potential
- Reduced bolting

**BENEFITS**
- Can provide earlier feed for livestock
- Can deliver more liveweight gain or milk per hectare
- Provides more feed from later grazings
- Provides better quality longer

**SF Pacer**
3–5kg/ha
6–8 weeks after sowing
Australian release > 2007

**Forage EBV’s – compared to industry standards**

<table>
<thead>
<tr>
<th>LEAFY TURNIP</th>
<th>SOWING RATES</th>
<th>MATURITY</th>
<th>GRAZINGS</th>
<th>YIELD PASJA = 100</th>
<th>EXTRA MEAT VALUE</th>
<th>EXTRA MILK VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>SF Pacer</td>
<td>3–5kg/ha</td>
<td>28–56 days</td>
<td>Multiple</td>
<td>116</td>
<td>+$227</td>
<td>+$656</td>
</tr>
<tr>
<td>Hunter</td>
<td>3–5kg/ha</td>
<td>28–56 days</td>
<td>Multiple</td>
<td>103</td>
<td>+$47</td>
<td>+$123</td>
</tr>
<tr>
<td>Pasja</td>
<td>3–5kg/ha</td>
<td>28–56 days</td>
<td>Multiple</td>
<td>100</td>
<td>$0</td>
<td>$0</td>
</tr>
</tbody>
</table>

* Meat value estimated using 70% utilisation of feed and $2.50/kg liveweight gain, and milk value estimated using 80% utilisation of feed and 40c/litre milk.

SF Greenland
forage rape

**The new benchmark for forage rape**
SF Greenland is a high yielding forage rape that can be used by dairy, beef and sheep producers to produce high quality feed in any season where moisture during growing season will allow.

Due to its late flowering, SF Greenland is well suited to sowing during late summer until spring.

It is consistently producing high yields when sown for either winter or summer feed.

SF Greenland is fast becoming the rape of choice for producers looking to improve their profitability from growing forage rape.

**FEATURES**
- Late flowering
- Traditional maturity
- High yielding
- Excellent re-growth

**BENEFITS**
- Can be sown all year round with adequate moisture
- Can graze when crop is ripe based on sowing time and location
- More profitable than other forage rape options
- Will provide more feed from later grazings

**SF Greenland**
3–5kg/ha
10–12 weeks after sowing
Australian release > 2006

**Forage EBV’s – compared to industry standards**

<table>
<thead>
<tr>
<th>FORAGE RAPE</th>
<th>SOWING RATES</th>
<th>MATURITY</th>
<th>GRAZINGS</th>
<th>YIELD WINFRED = 100</th>
<th>EXTRA MEAT VALUE</th>
<th>EXTRA MILK VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>SF Greenland</td>
<td>3–5kg/ha</td>
<td>70–90 days</td>
<td>Multiple</td>
<td>123</td>
<td>+$402</td>
<td>+$1,179</td>
</tr>
<tr>
<td>Goliath</td>
<td>3–5kg/ha</td>
<td>84–100 days</td>
<td>Multiple</td>
<td>116</td>
<td>+$281</td>
<td>+$832</td>
</tr>
<tr>
<td>Titan</td>
<td>3–5kg/ha</td>
<td>70–92 days</td>
<td>Multiple</td>
<td>103</td>
<td>+$52</td>
<td>+$149</td>
</tr>
<tr>
<td>Ace</td>
<td>3–5kg/ha</td>
<td>70–93 days</td>
<td>Multiple</td>
<td>102</td>
<td>+$47</td>
<td>+$110</td>
</tr>
<tr>
<td>Winfred</td>
<td>3–5kg/ha</td>
<td>60–90 days</td>
<td>Multiple</td>
<td>100</td>
<td>$0</td>
<td>$0</td>
</tr>
</tbody>
</table>

* Meat value estimated using 70% utilisation of feed and $2.50/kg liveweight gain, and milk value estimated using 80% utilisation of feed and 40c/litre milk.
SF G2

globe turnip

Specialty Forages

Most will be familiar with forage crops such as grazing cereals, forage sorghums and forage brassicas, but there are other specialty forages performing well on farm and worthy of consideration that are detailed in this guide. Further specific information on these can be obtained by talking to your local Seed Force Territory Manager or technical staff.

Forage herbs

These can be used as a component of a perennial pasture or used as medium-term forage crops. The details below refer to their use as forage crops.

Chicory is a very high-quality forage herb with low NDF%, very high ME and good Crude Protein% that can be used for either fattening lamb or beef cattle or strip grazing by dairy cows. It can be sown alone or with a companion legume to provide nitrogen boost, such as lucerne, white, red or sub-clover depending on soil type and climate. It will usually last 2-4 years depending on variety, growing conditions and grazing management. It will regenerate from seed, and is best suited to higher fertility situations. Whilst it is desirable to sow into clean seedbeds, weeds can be controlled in chicory with many pasture herbicides.

Plantain is a more drought hardy and adapted to low fertility situations. It will regenerate from seed, but loses feed quality as it matures. Plantain needs to be sown into clean paddocks free of weeds, as broadleaf weed control options are extremely limited.

Fodder beet

Fodder beet is an exciting new crop with high quality forage yields of 20-40t DM/ha able to be grown in 4-6 month growing seasons depending on time of sowing and location. The crop can be split into 3 main types:

- **Mangels** - low DM% (<13%), large bulb growing about 70-80% out of the soil with large amount of leafy top. It has the highest levels of utilisation and is the best option for strip grazing.

- **Fodder beets** - mid range DM% (13-20%) with around 50% of the bulb below ground. They can be grazed or mechanically harvested, and have lower utilisation than mangels.

- **Sugar beets** - high DM% (20-30%) with most of the bulb growing beneath the ground. These are suited to mechanical harvesting and longer storage due their high dry matter, harder bulbs.

Production and feeding of fodder beets requires specific advice and we recommend that if you want to try this exciting new crop, that you seek a plan from your local Seed Force territory manager.

The winter turnip

SF G2 is a new diploid, green-skinned, white fleshed turnip. It is a later maturing round traditional globe turnip for winter use. It is a high quality bulb that will keep well over winter, plus a high ratio of palatable leaf. It is an ideal replacement for Green Globe.

Forage EBV’s – compared to industry standards*

<table>
<thead>
<tr>
<th>GLOBE</th>
<th>SOWING RATES</th>
<th>MATURITY</th>
<th>GRAZINGS</th>
<th>LEAF YIELD</th>
<th>BULB YIELD</th>
<th>TOTAL YIELD</th>
</tr>
</thead>
<tbody>
<tr>
<td>SF G2</td>
<td>0.8–2kg/ha</td>
<td>100–130 days</td>
<td>Single</td>
<td>125</td>
<td>120</td>
<td>123</td>
</tr>
<tr>
<td>Green Globe</td>
<td>0.8–1.5kg/ha</td>
<td>100–130 days</td>
<td>Single</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

* Based on 16 trials in New Zealand 2006–2008.
**SF Punter**

**chicory**

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**SF Endurance**

**plantain**

---

**Don’t take a punt on any old chicory**

SF Punter is a deep rooted perennial herb providing outstanding summer productivity and feed quality. It has high mineral uptake and is extremely persistent. It provides a high energy forage with proven animal health benefits and increased animal production at a time of year when pasture quality is low. Being more winter active than some varieties, SF Punter can be sown at any time when there is adequate moisture for good germination and establishment.

---

**Forage EBV’s – compared to industry standards**

<table>
<thead>
<tr>
<th>CULTIVAR</th>
<th>AUTUMN</th>
<th>WINTER</th>
<th>SPRING</th>
<th>SUMMER</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>SF Punter</td>
<td>118</td>
<td>164</td>
<td>123</td>
<td>100</td>
<td>122</td>
</tr>
<tr>
<td>Puna</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>


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**SF Endurance**

**plantain**

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**Feed for all seasons**

SF Endurance is a new forage plantain with improved feed production across all seasons. Plantain is a drought hardy deep rooted perennial herb well adapted to low fertility soils. Existing varieties have either been winter active and early flowering or summer active and late flowering. SF Endurance provides similar winter feed to Tonic, but with improved warm season production. It is ideal for pasture mixes where producers are looking for a contribution from plantain across all seasons.

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**Forage EBV’s – compared to industry standards**

<table>
<thead>
<tr>
<th>PLANTAIN</th>
<th>AUTUMN</th>
<th>WINTER</th>
<th>SPRING</th>
<th>SUMMER</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>SF Endurance</td>
<td>97</td>
<td>93</td>
<td>93</td>
<td>107</td>
<td>100</td>
</tr>
<tr>
<td>Tonic</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Boston</td>
<td>82</td>
<td>71</td>
<td>86</td>
<td>108</td>
<td>93</td>
</tr>
</tbody>
</table>

* Data based on yields from Tenterfield trial 2011-2013.
## SF Brigadier

**Fodder Beet**

- **Sowing rate**: 80–100,000 seeds/ha
- **16–26 weeks after sowing**
- **Australian release**: > 2008

### FEATURES
- High sugar feed option
- Very high potential yields
- Good weed and pest rotational crop

### BENEFITS
- Very good palatability for all livestock classes
- Can yield up to 20–40t DM/ha. Profitable crop option
- Sound option to avoid Diamondback moth problems

### High yields were never this sweet

SF Brigadier is a traditional polyploid, mangel type fodder beet with orange bulbs. The bulb sits high up out of the soil and is ideal for grazing in-situ by all livestock classes. Its high sugar level makes it very palatable. Fodder beet is a well known crop, but with new genetics and better management practices it is gaining rapid interest for its ability to produce very high yields of high quality forage. It is typically sown in spring using specialist seeders and has a 4–6 month growing period.

SF Brigadier offers new genetic potential and is capable of producing 20–40t DM/ha for late autumn and winter grazing. It is not a brassica but a member of the beet family and offers the opportunity to break the traditional weed and pest cycle of brassicas, particularly for Diamondback moth.

You should seek specialist advice from Seed Force if considering growing this exciting crop.

<table>
<thead>
<tr>
<th>FODDER BEET</th>
<th>SOWING RATES ALONE</th>
<th>MATURITY</th>
<th>GRAZINGS</th>
<th>ME MJ/KG DM</th>
<th>CRUDE PROTEIN</th>
<th>YIELD</th>
</tr>
</thead>
<tbody>
<tr>
<td>SF Brigadier</td>
<td>80–100,000</td>
<td>16–26 weeks</td>
<td>Single</td>
<td>12.5–13.5</td>
<td>6–8%</td>
<td>Up to 40t</td>
</tr>
</tbody>
</table>

### Forage EBV’s – compared to industry standards

<table>
<thead>
<tr>
<th>FODDER BEET</th>
<th>SOWING RATES ALONE</th>
<th>MATURITY</th>
<th>GRAZINGS</th>
<th>ME MJ/KG DM</th>
<th>CRUDE PROTEIN</th>
<th>YIELD</th>
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<td>16–26 weeks</td>
<td>Single</td>
<td>12.5–13.5</td>
<td>6–8%</td>
<td>Up to 40t</td>
</tr>
</tbody>
</table>

---

## SF Lifta

**Fodder Beet**

- **Sowing rate**: 80–100,000 seeds/ha
- **16–26 weeks after sowing**
- **Australian release**: > 2015

### FEATURES
- Very high yielding
- Suited to in-situ grazing
- High dry matter bulbs

### BENEFITS
- Well suited to mechanical harvesting
- Genetic monogerm hybrid
- Good seedling vigour

SF Lifta is a versatile hybrid fodder beet with high dry matter - 17-19%. It offers growers the ability to graze in-situ or mechanical harvest for storage and feeding. It has excellent leaf disease resistance to powdery mildew and rust.

### Stock suitability

> All livestock types

---

## SF Suga

**Sugar Beet**

- **Sowing rate**: 100,000–120,000 seeds/ha
- **16–26 weeks after sowing**
- **Australian release**: > 2014

### FEATURES
- Very high yielding
- Suited to in-situ grazing
- High dry matter bulbs

### BENEFITS
- Well suited to mechanical harvesting
- Genetic monogerm hybrid
- Good seedling vigour

SF Suga is the latest technology in sugar beet. It has high dry matter - 23-26%, making it a high yielding option for mechanical harvest. This high DM% helps prolong its storage ability.

### Stock suitability

> All livestock types
Grazing cereals

Livestock producers have grazed most cereal species for many years, either as dual-purpose graze and grain options, specifically for grazing only, or for grazing and fodder conservation. Graze and grain options have traditionally included white wheat varieties that can be grazed and then locked up to produce high protein premium quality grades, plus more limited use of oats, barley and triticale. More recently the introduction of (mainly red) winter wheats from Europe has enabled crops to be planted earlier, produce forage quicker, produce higher grain yields and have reduced risk of sprouting. But they are currently all rated as feed wheats as there is no segregation for premium milling quality red wheats in Australia.

Seed Force has a range of graze and grain winter wheats including SF Ovalo, SF Adagio, RGT Accroc and RGT Zanzibar. For information about these contact Seed Force for a copy of our winter crop guide or check our website – www.seedforce.com.

We do have some specialist cereals suited to either grazing or grazing and fodder conservation which are included in this guide.

Grazing guidelines

Ideally crops should be grazed when they are well anchored and have commenced tillering – Zadok’s stage 21-29. They can be continually grazed maintaining a residual of 1000-1500kg DM/ha (5-10cm for prostrate varieties and 10-20cm for erect types). They should be locked up at stem elongation but before seed head development – Zadok’s stage 31 at the latest.

Grazing cereal options

Grazing winter wheat – best sown late summer or early autumn where there is adequate moisture.

They can be sown earlier than spring wheats and other cereals as they require vernalisation to initiate head development. Seed Force has selected a late flowering, awnless winter type especially for grazing and production of higher quality forage.

**SF Moskito** is a prostrate type and can be grazed hard much earlier than most other options. It also has good aphid resistance.

Grazing oats – should be sown when soil temperatures are below 25°C with adequate soil moisture. They should be grazed when they will withstand pulling and canopy has closed. If they are to be cut for conserved fodder, they should be locked up.

For varietal choice refer crop selection table on page 3. In areas of high humidity and increased risk of rust, we only recommend the use of **SF Empire** oats.

Grazing triticale – has an advantage in light acid soils with high exchangeable Aluminium levels. It is however, more susceptible to frost damage and requires later sowing in frost-prone regions. Seed Force has selected a specialist variety with high forage yield and excellent recovery after grazing for silage.

**SF Bolt** is not suited to hay production.

---

SF Colossus
forage oats

### FEATURES

<table>
<thead>
<tr>
<th>BENEFITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rapid establishment</td>
</tr>
<tr>
<td>Medium seed size</td>
</tr>
<tr>
<td>Mid-late maturity</td>
</tr>
</tbody>
</table>

### Sowing rate

<table>
<thead>
<tr>
<th>Season</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autumn</td>
<td>75–80kg/ha</td>
</tr>
<tr>
<td>Winter</td>
<td>80–100kg/ha</td>
</tr>
</tbody>
</table>

### Australian release

> 2011

### Stock suitability

> All livestock types

### Bulk winter feed faster

SF Colossus is a mid-late flowering forage oat with suitability to grazing and high quality hay. It has medium seed size enabling slightly lower seeding rate than larger seeded varieties, and a heavier seeding rate than Saia oats. It has rapid establishment with wide leaves and tillers well. It is best suited to early grazing as this will encourage tillering and prevent lodging if locked up as a hay or grain crop.

SF Colossus is mid-late flowering and in local trials has shown to be about 3 weeks later flowering than Wintaro and 4 weeks later than Swan oats. Its later maturity makes it ideally suited to cutting for hay or mixing with other species for specialist use.
SF Tucana
forage oats

SF Empire
forage oats

**SF Tucana**

Leafy oat for grazing, hay & silage

SF Tucana is a mid-late flowering forage oat suitable for multiple grazings and lock up for high yields of high quality hay. It is about 7 days later flowering than SF Colossus and better suited to mixing with forage legumes such as clovers or vetch to increase hay quality.

**FEATURES**
- Multi-grazing variety
- High yielding
- Late flowering
- Large broad leaf

**BENEFITS**
- Can provide increased grazing returns
- For either increased grazing or hay production
- Suitable for producing high quality
- Improves quality and overall yield

**Sowing rate**
- 80–100kg/ha

**Australian release**
- > 2014

**Forage EBV’s – compared to industry standards**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>SF Empire</td>
<td>6.4</td>
<td>91</td>
<td>9.06</td>
<td>104</td>
<td>3.95</td>
<td>10</td>
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<tr>
<td>Taipan</td>
<td>7.1</td>
<td>100</td>
<td>8.64</td>
<td>100</td>
<td>3.64</td>
<td>10</td>
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<tr>
<td>Aladdin</td>
<td>7.5</td>
<td>106</td>
<td>11.83</td>
<td>136</td>
<td>4.32</td>
<td>11</td>
</tr>
</tbody>
</table>

**SF Empire**

**Improved resistance to leaf rust**

SF Empire is a new mid-late flowering forage oat with improved resistance to leaf rust. It is an erect type oat with good tillering ability, and a proportion of thinner tillers which assists in recovery after cutting or grazing.

SF Empire has good warm soil tolerance and can be planted early (late summer/early autumn) particularly in areas that receive good summer rain. Being late flowering it can be grazed over an extended period and will make better hay or silage than earlier flowering types.

**FEATURES**
- Warm start capability
- Strong initial growth
- Improved resistance to leaf rust
- Late maturity
- Fine leaves

**BENEFITS**
- Earlier planting opportunity
- Faster winter feed
- Improved palatability & better quality feed
- Longer growing season & better quality hay
- Handles dry conditions better

**Sowing rate**
- northern (dry winters) 50–80kg/ha
- southern (wet winters) 80–100kg/ha

**Australian release**
- > 2016
SF Bolt
forage triticale

**Dual purpose forage cereal**

SF Bolt is a new forage triticale that can be autumn or spring sown, ideally suited for green chop or whole crop cereal silage. It is the latest in forage triticale technology using unique double haploid breeding. It is unsurpassed in crop uniformity. This provides the benefit of all plants maturing at a similar time, therefore enhancing ease of harvest and enabling consistent yields across the paddock. SF Bolt has very good resistance to rust and other diseases potentially reducing the use of expensive fungicides that other older varieties may require. It offers the typical characteristics of a high production forage triticale with very good metabolisable energy and carbohydrate levels.

**FEATURES**

- Unique double haploid breeding technology
- Good rust resistance
- Lower NDF % and higher ME grain
- Good lodging tolerance

**BENEFITS**

- Uniform crop maturity for ease of harvest
- Reduced need for expensive fungicides
- Greater intake with more energy for milk
- Easier harvesting with less wastage

**Sowing rate**

120–150kg/ha

**Australian release**

> 2013

**Stock suitability**

> All livestock types

---

SF Moskito
forage wheat

**For grazing and fodder conservation**

SF Moskito is a new winter wheat specifically selected for grazing and fodder conservation. It is an awnless variety with good tillering ability and more prostrate habit and will be more palatable than awned varieties when made into silage.

SF Moskito has good feed quality and can be planted early (late summer/early autumn) particularly in areas that receive early autumn rain or have irrigation. Being a winter type, it requires cold vernalisation, so will not flower from early plantings like spring wheats. It is ideally suited to conserving as whole crop silage at milky dough stage of crop.

**FEATURES**

- Winter type
- Strong recovery after grazing
- Awnless variety
- Late maturity

**BENEFITS**

- Earlier planting opportunity
- More grazing potential
- Improved palatability when conserved as silage
- Longer growing season and better quality hay

**Sowing rate**

80–100kg/ha

**Australian release**

> 2017

**Stock suitability**

> All livestock types

---
Summer crop efficiency

Forage sorghum is more water use efficient than millet and can provide consistent yields even under limited dryland rainfall situations.

Results from many Seed Force trials highlight the fact that forage sorghums are around twice as efficient as millet.

Efficiency and profitability.

In 2008/09 Seed Force set up a split paddock trial to examine the efficiency of millet vs forage sorghum under both irrigation and dryland. Whilst most producers and advisors would examine the relative costs of feed and opt for millet, the superior WUE of sorghum showed higher profitability in both cases.

Irrigated dairy split paddock trial results

<table>
<thead>
<tr>
<th>Location</th>
<th>Millet</th>
<th>Forage sorghum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yield (kg DM/ha)</td>
<td>7,240</td>
<td>16,964</td>
</tr>
<tr>
<td>NDF (%)</td>
<td>53.33</td>
<td>55.33</td>
</tr>
<tr>
<td>ME (MJ/kg DM)</td>
<td>9.07</td>
<td>8.93</td>
</tr>
<tr>
<td>Daily milk from crop (litres/cow/day)</td>
<td>5.90</td>
<td>4.76</td>
</tr>
<tr>
<td>Total milk from crop (litres/cow/day)</td>
<td>2373</td>
<td>4658</td>
</tr>
<tr>
<td>Price ($/ha)</td>
<td>0.45</td>
<td>0.45</td>
</tr>
<tr>
<td>Gross Income ($/ha)</td>
<td>$1,067</td>
<td>$2,096</td>
</tr>
<tr>
<td>Total costs ($/ha)</td>
<td>$306</td>
<td>$430</td>
</tr>
<tr>
<td>Gross Margins ($/ha)</td>
<td>$709</td>
<td>$1,666</td>
</tr>
<tr>
<td>Extra Profit from forage sorghum</td>
<td>+5957</td>
<td></td>
</tr>
</tbody>
</table>

The irrigated trial showed improved water use efficiency from 27kg DM/mm rain for shirohie millet to 63kg DM/mm rain for forage sorghum.

Dryland beef split paddock trial results

<table>
<thead>
<tr>
<th>Location</th>
<th>Millet</th>
<th>Forage sorghum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yield (kg DM/ha)</td>
<td>2,526</td>
<td>6,011</td>
</tr>
<tr>
<td>NDF (%)</td>
<td>52.5</td>
<td>54</td>
</tr>
<tr>
<td>ME (MJ/kg DM)</td>
<td>9.3</td>
<td>9.3</td>
</tr>
<tr>
<td>Ave daily gain (kg/hr/day)</td>
<td>0.439</td>
<td>0.400</td>
</tr>
<tr>
<td>Live weight gain (kg/lew/ha)</td>
<td>105</td>
<td>234</td>
</tr>
<tr>
<td>Price ($/ha)</td>
<td>3.00</td>
<td>3.00</td>
</tr>
<tr>
<td>Gross Income ($/ha)</td>
<td>$315</td>
<td>$702</td>
</tr>
<tr>
<td>Total costs ($/ha)</td>
<td>$216</td>
<td>$340</td>
</tr>
<tr>
<td>Gross Margins ($/ha)</td>
<td>$99</td>
<td>$362</td>
</tr>
<tr>
<td>Extra Profit from forage sorghum</td>
<td>+$263</td>
<td></td>
</tr>
</tbody>
</table>

The dryland trial showed improved water use efficiency from 24kg DM/mm rain for shirohie millet to 57kg DM/mm rain for forage sorghum.

Forage sorghum selection

The term forage sorghum covers a range of C4 summer forages including sudan grass, sorghum x sudan crosses, sorghum x sweet sorghum and sweet sorghum x sweet sorghum types. These hybrids can also have crosses involving BMR (brown mid rib) genes improving feed quality. Each of these has specific traits making them better suited to different on farm uses.

The selection guide below is included to help you select the most appropriate option for your situation.

You should also be aware that whilst they are included as forage sorghums, sudangrass is more susceptible to Atrazine damage which is excluded from most herbicide labels. If grass weeds are a problem, then you should use a seed safener such as Concep II, which can be used on all forage sorghum types. This can then enable the use of either Dual Gold® or Primextra Gold®.

### DECISION CRITERIA

<table>
<thead>
<tr>
<th>BEST TYPE</th>
<th>PREFERRED OPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focus on rotational grazing, highest quality for milking or live weight gain</td>
<td>BMR Sudangrass</td>
</tr>
<tr>
<td>Quickest feed to first grazing, Dual purpose grazing or hay cuts</td>
<td>sorghum x sudan</td>
</tr>
<tr>
<td>Higher quality option, Quickest feed to first grazing, Dual purpose grazing or hay cuts</td>
<td>BMR sorghum x sudan</td>
</tr>
<tr>
<td>Deferred grazing or hay production: Ultra-late flowering to maintain quality 1-2 cuts</td>
<td>Photo-Period Sensitive sorghum x sudan</td>
</tr>
</tbody>
</table>
SF Beamer
BMR Sudangrass

**FEATURES**
- Superior forage quality
- Sudangrass x sudangrass
- Earlier grazing opportunity
- Fast recovery

**BENEFITS**
- Increased intake for greater animal performance
- Reduced prussic acid risk
- Can be grazed at 500–600mm
- Can be re-grazed faster

**Sowing rate**
- Dryland: 10–15kg/ha
- Irrigated: 25–30kg/ha

**Focus on high quality**
SF Beamer has finer stems, narrow leaf blades, tillers profusely and re-grows rapidly after harvest compared to forage sorghums.

It can be sown when soil temperatures reach 18°C and are rising. The time to first grazing will depend upon soil temperatures. A stubble of about 100mm is recommended after cutting or grazing to promote vigorous re-growth and profuse tillering of the next crop.

We recommend SF Beamer where the focus is on high quality grazing and fast recovery between grazings.

---

**SF Mustang**
BMR forage sorghum

**FEATURES**
- Mid maturity hybrid sorghum x sudan
- BMR 12 gene
- Fine stemmed and leafy
- Excellent regrowth & drought tolerance
- Works well as a multi-cut hay or silage

**BENEFITS**
- Low prussic acid risk
- Reduced lignin, for higher feed quality
- Improved feed quality
- Outstanding animal performance
- Flexible stand management

**Sowing rate**
- Dryland: 8–12kg/ha
- Irrigated: 20–25kg/ha

**General fit**
SF Mustang is a new high-quality forage sorghum option ideally suited to fast first feed and multiple harvests. It should be grazed from 60–100cm in height to maximise forage quality, but being a BMR type it will have lower lignin and higher quality than conventional forage sorghums of similar mid maturity.

Higher sowing rates will maximise yield and improve quality through production of finer stems. Suited to hay or grazing by sheep, beef or dairy cattle.

---

**Forage EBV’s – compared to industry standards**

<table>
<thead>
<tr>
<th>VARIETY</th>
<th>YIELD (KGDM/HA)</th>
<th>NDF ME</th>
<th>C P</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.5M 1.0M 1.5M</td>
<td>0.5M 1.0M 1.5M</td>
<td>0.5M 1.0M 1.5M</td>
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<tr>
<td>sudangrass</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>SF Beamer BMR</td>
<td>12,119</td>
<td>41</td>
<td>55</td>
</tr>
<tr>
<td>Superdan 2</td>
<td>11,577</td>
<td>44</td>
<td>50</td>
</tr>
<tr>
<td>SSS</td>
<td>11,254</td>
<td>45</td>
<td>60</td>
</tr>
<tr>
<td>Nudan</td>
<td>10,094</td>
<td>46</td>
<td>65</td>
</tr>
<tr>
<td>millet</td>
<td>4,228</td>
<td>47</td>
<td>66</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>VARIETY</th>
<th>YIELD (KGDM/HA)</th>
<th>NDF ME</th>
<th>C P</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.5M 1.0M 1.5M</td>
<td>0.5M 1.0M 1.5M</td>
<td>0.5M 1.0M 1.5M</td>
</tr>
<tr>
<td>sudangrass</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SF Mustang BMR</td>
<td>3,121</td>
<td>55</td>
<td>60</td>
</tr>
<tr>
<td>Superdan 2</td>
<td>2,205</td>
<td>60</td>
<td>63</td>
</tr>
<tr>
<td>SSS</td>
<td>2,175</td>
<td>60</td>
<td>63</td>
</tr>
<tr>
<td>Nudan</td>
<td>2,094</td>
<td>65</td>
<td>68</td>
</tr>
<tr>
<td>millet</td>
<td>1,929</td>
<td>66</td>
<td>66</td>
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</table>

**Trial data**

<table>
<thead>
<tr>
<th>BMR sorghum x sudans</th>
<th>C1 19.1.17</th>
<th>C2 13.2.17</th>
<th>C3 16.3.17</th>
<th>Total</th>
<th>Homogeneous groups</th>
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</thead>
<tbody>
<tr>
<td>Calibre BMR</td>
<td>3,085</td>
<td>1,489</td>
<td>2,916</td>
<td>7,489</td>
<td>A</td>
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<tr>
<td>Octane BMR</td>
<td>2,205</td>
<td>2,789</td>
<td>2,353</td>
<td>7,347</td>
<td>A</td>
</tr>
<tr>
<td>SF Mustang BMR</td>
<td>3,121</td>
<td>1,382</td>
<td>2,567</td>
<td>7,069</td>
<td>A B</td>
</tr>
<tr>
<td>Rocket BMR</td>
<td>1,929</td>
<td>2,302</td>
<td>2,694</td>
<td>6,924</td>
<td>A B</td>
</tr>
<tr>
<td>BMR Revolution</td>
<td>2,579</td>
<td>1,578</td>
<td>2,374</td>
<td>6,531</td>
<td>A B</td>
</tr>
<tr>
<td>trial mean</td>
<td>2,271</td>
<td>1,948</td>
<td>2,543</td>
<td>6,762</td>
<td></td>
</tr>
<tr>
<td>CV%</td>
<td>32.50%</td>
<td>26.10%</td>
<td>24.10%</td>
<td>18.10%</td>
<td></td>
</tr>
<tr>
<td>LSD(0.05)</td>
<td>1,069</td>
<td>737</td>
<td>890</td>
<td>1,780</td>
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</tr>
</tbody>
</table>

*based on data from trial at Shepparton 2016/17. Trial sown and managed by Eurofins Agrisearch.
SF Splendour

ultra-late PPS forage sorghum

SF Splendour is an ultra-late Photo Period Sensitive (PPS) hybrid sorghum x sudangrass. It can be grazed or held over as standing feed or hay and will not run to head like the early maturing varieties on the market. The plant will not enter the reproductive stage until there is less than 12 hours and 20 minutes sunlight which takes it out well into autumn.

It will need to be fed with adequate nutrition based on a soil test. We recommend sowing with an N/P based starter fertiliser and regular topdressing after grazings with Nitrogen and some Potassium.

Being a sorghum by sudan, grass weeds can be controlled with Atrazine without the need for a seed safener. For difficult grass and broadleaf weed problems, you can use a seed safener such as Concep II® to enable the use of Dual Gold® or Primextra Gold®.

**Features**

- Hybrid Sorghum X Sudan
- Fine stemmed and leafy
- Excellent regrowth & drought tolerance
- Works well as a multi-cut hay or hay and silage

**Benefits**

- Improved feed quality over early varieties
- Ideal as stand-over feed for grazing or cutting
- Flexible stand management

**Sowing rate**

- Dryland 8–12kg/ha
- Irrigated 20–25kg/ha

**Australian release**

> 2016

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SF Flourish

forage sorghum

SF Flourish is an excellent value forage sorghum option ideally suited to fast first feed and multiple harvests. It should be grazed from 60–100cm in height to maximise forage quality, but can be conserved as hay, but with lower feed value. Higher sowing rates will maximise yield and improve quality through production of finer stems. suited to hay or grazing by sheep, beef or dairying cattle.

It will need to be fed with adequate nutrition based on a soil test. We recommend sowing with an N/P based starter fertiliser and regular topdressing after grazings with Nitrogen and some Potassium.

Being a sorghum by sudan, grass weeds can be controlled with Atrazine without the need for a seed safener. For difficult grass and broadleaf weed problems, you can use a seed safener such as Concep II® to enable the use of Dual Gold® or Primextra Gold®.

**Features**

- Hybrid Sorghum X Sudan
- Fine stemmed and leafy
- Excellent regrowth & drought tolerance
- Works well as a multi-cut hay or hay and silage

**Benefits**

- Improved feed quality
- Outstanding animal performance
- Outstand animal performance
- Efficient water use efficiency

**Sowing rate**

- Dryland 8–12kg/ha
- Irrigated 20–25kg/ha

**Australian release**

> 2015

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**Forage EBV’s – compared to industry standards**

<table>
<thead>
<tr>
<th>VARIETY Height</th>
<th>YIELD KG DM/HA 0.5M</th>
<th>NDF 1.0M</th>
<th>ME 1.5M</th>
<th>NDF 0.5M</th>
<th>ME 1.0M</th>
<th>ME 1.5M</th>
<th>NDF 0.5M</th>
<th>ME 1.0M</th>
<th>ME 1.5M</th>
</tr>
</thead>
<tbody>
<tr>
<td>sudan grass SF Flourish</td>
<td>10,417</td>
<td>48</td>
<td>61</td>
<td>58</td>
<td>11.4</td>
<td>9.7</td>
<td>9.9</td>
<td>23.2</td>
<td>18.2</td>
</tr>
<tr>
<td>BMR Revolution</td>
<td>10,583</td>
<td>45</td>
<td>57</td>
<td>64</td>
<td>11.2</td>
<td>9.7</td>
<td>9.3</td>
<td>21.8</td>
<td>20.6</td>
</tr>
<tr>
<td>Boost</td>
<td>10,576</td>
<td>47</td>
<td>62</td>
<td>59</td>
<td>11.2</td>
<td>9.6</td>
<td>9.8</td>
<td>20.7</td>
<td>16.5</td>
</tr>
<tr>
<td>Octane BMR</td>
<td>8,497</td>
<td>49</td>
<td>54</td>
<td>64</td>
<td>10.8</td>
<td>10.3</td>
<td>9.1</td>
<td>21.2</td>
<td>18.7</td>
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<tr>
<td>millet Siberian</td>
<td>4,228</td>
<td>47</td>
<td>66</td>
<td>11.6</td>
<td>8.8</td>
<td>8.8</td>
<td>24.9</td>
<td>15.3</td>
<td></td>
</tr>
</tbody>
</table>

* based on data from trial at Myall Llubun 2015/16

* Quality data from NSW DPI Feed Analysis Service based on different cutting heights