



Forage Sorghum Silage

Forage sorghum is a summer crop which can be ensiled to provide quality feed, and relatively high dry matter yield. There are basically two growth stages when forage sorghum is ensiled:

- Sorghum is basically grown as a grain crop but harvested at the dough stage with a precision chop harvester to provide a feed that contains both grain and plant material. Together the two components combine to provide quality feed particularly if the grain content is maximised. Forage sorghums such as Pioneer® brand Graze-N-Sile and Pioneer® brand Mega Sweet are harvested this way.
- Forage sorghums can also provide a higher protein and sound energy content feed when conserved earlier. Pioneer® brand Betta Graze and the new Pioneer® brand hybrid SSS (Super Sweet Sudan) are designed to be intensively managed and utilised in the vegetative phase of growth. These crops are often grazed but if the crop's growth stage is at risk of advancing past the vegetative stage then silage or hay can be made. This will ensure that forage of the highest quality is utilised and conserved.

Table 1 shows typical range of feed quality of forage sorghum silage and the target dry matters for ensiling forage sorghum at either growth stage.

Table 1: Target harvest dry matter and typical feed quality of forage sorghum (precision chop silage) and wilted forage sorghum (baled silage)

Crop	Target Harvest Dry Matter	Typical Energy ME	Typical Crude Protein %
Forage Sorghum precision chop (Graze-N-Sile / Mega Sweet)	28 - 35% DM	9 - 10.5	6 - 9%
Wilted forage sorghum Betta Graze / SSS	35 - 40% DM	9.5 - 10.5	10 - 16%

Harvest at the correct time

Harvesting at the correct time is critical. The overall driver of time of harvest for precision chop forage sorghum is the target dry matter. Whole plant dry matter should be within the dry matter targets in table 1. Harvesting in this window should maximise yield, quality and stack fermentation. Harvesting a crop too early will result in a yield loss and potentially poor fermentation. High losses will occur as plant fluids run from the stack or bunker taking away valuable sugars. Late harvest may result in a loss of quality as plant stover (leaf and stalk) increase in fibre and becomes less digestible. Dry crops are also difficult to compact properly, risking the fermentation process. Wilted forage sorghums need to be harvested before forage quality starts to decline rapidly. This is normally around 0.8m - 1.2m in height. The forage will need to be wilted to achieve the target dry matter range in table 1.



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Mowing with a mower conditioner and using a crimper machine will be an advantage. The aim is to achieve the target dry matter within 48 hours to maximise quality. With baled silage and wilted forage sorghum it is important to minimise contamination from dirt as the contamination will put the fermentation at risk.

Inoculant

Using Pioneer® brand inoculant adds significant value to your investment in silage. Pioneer inoculants improve the fermentation in the stack or bale, reduce losses or shrinkage and improve the performance from your silage when fed to stock. Table 2 shows suitable Pioneer inoculants for these crop situations.

Table 2: Recommended Pioneer Inoculants

Crop	Recommended Pioneer Inoculant
Forage Sorghum precision chop (Graze-N-Sile / Mega Sweet)	Pioneer® brand 11CFT Triple Stack or Pioneer® brand 11C33 . Both contain <i>L. buchneri</i> Pioneer® brand 1174 fermentation only
Wilted forage sorghum Betta Graze / SSS	Pioneer® brand 11G22 contains <i>L. buchneri</i> or Pioneer® brand 1174 fermentation only.

Compaction and sealing

Good compaction is the key to making top quality silage. Compaction is a function of vehicle weight, rolling time, and depth of spread of harvested material. Fill the bunker or stack as quickly as possible to minimise exposure to the air. Where possible, fill in a wedge shape. This will give good compaction and minimise the amount of time that the forage is exposed to the air. Spread each load into a 100-150 mm layer so that it can be compacted properly. If large loads are being delivered to a stack site, dump the loads in front of the stack. Build the stack by taking small loads to the stack layering as you go to achieve the desired shaping. After the last load has been delivered continue compacting until the surface of the stack or bunker is firm. The stack or bunker should have a smooth surface. This allows the cover to be laid flat without creases or folds. Cover the stack as soon as possible with a quality plastic cover. The quicker the environment of the stack becomes anaerobic after the sealing of the cover, the lower the loss in feed value. Tape joints and seal edges. Ensure tyres are touching one another across the stack.

Baled silage needs to be wrapped as soon as possible. Use a quality plastic and follow the manufacturer's recommendations for the number of wraps. Handle bales carefully to avoid puncturing the wrap and generally stack no more than two high. For more information regarding ensiling forage sorghum please contact your **local Pioneer Area Manager** or **Pioneer Promoter Agent**.

**For further information contact
DuPont Pioneer on 1800 PIONEER
or www.pioneer.com**

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