

# Liberty Grain sorghum

Summer crop

## Key features

- White grain sorghum
- Semi-open head type
- Medium – tall height
- 75–80 days to flowering
- Mid - late maturity option
- Moderate stay-green (standard spray out practices)
- Moderate lodging tolerance
- Excellent pollen producer (reduces ergot risk)

## Key benefits

- White grain for diversified markets (livestock feed rations)
- Water use efficient silage option
- Good drought tolerance
- Well adapted to a broad range of environments
- Reliable and profitable
- Well suited to dryland and irrigation

## Product fit

Liberty combines all the attributes that growers desire in a white sorghum hybrid - high yield for maturity, adaptability across most environments and improved standability. Liberty is the ideal choice for growers wanting to widen their marketing options or those wishing to add real value when used in their own livestock feed rations. Liberty has the ability to accumulate dry matter rapidly in warm conditions, as well as being an ideal rotation crop that tolerates heat and moisture stress, performing better than most other annual summer crops when soil water is limiting.

## Advantages

- Large, creamy white grain for improved feed values
- Moderate tillering
- Good seedling vigour
- Easy insect control – semi open head

## Attributes chart

Attribute	Liberty
Maturity	Medium-Late
Grain colour	White
Head type	Semi-open
Zones	All
Irrigation	Yes
Wide Rows	Yes
Seedling Vigour	7
Early Spring Vigour	7
General Appearance	6.5
Head Exertion	7
Standability	4/5
Lodging - Stress	6
Lodging - Charcoal Rot	6
Grain Size	7
Staygreen	Medium
Tillering	7
Midge Rating	4

# Liberty white sorghum for headlage

White grain sorghum is a summer forage option that has been making a resurgence in the silage industry, with producers looking for cheaper and more effective sources of starch due to the reliance on high cost concentrates. Liberty white sorghum is a low cost crop that can be grown well in both irrigated and dryland systems. It is well known for its fast growth and adaption to restricted water conditions. Naturally the highest in starch of all grains, grain sorghum has the lowest starch digestibility due to the tight starch protein matrix in the grain. It is evident that white grain sorghum like Liberty has up to 10% more starch digestibility. Harvesting as headlage and chopping below the flag leaf, produces a high quality forage source with similar feed value to grain without the need to process through a grain mill prior to feeding.

## Why grow headlage

- Higher starch digestibility
- Palatable
- Lower cost source of starch
- No processing required – ready to feed
- Further gains if ensiled
- Retention of stubble improves soil health
- Reduces reliance on high cost concentrates

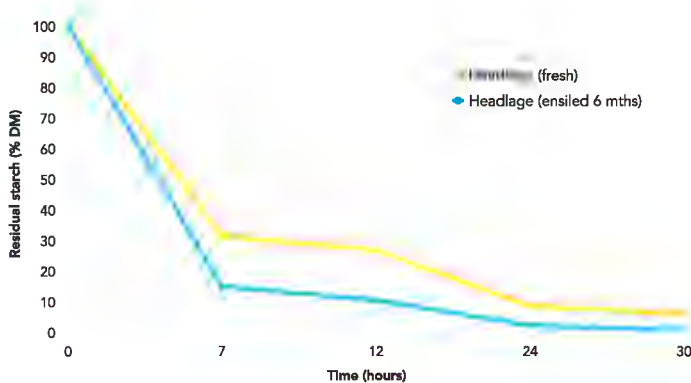
## Seeding rate

- Irrigated 4.5–6Kg/Ha
- Approx. 140,000–200,000 seeds/Ha
- Dryland 2–4.0Kg/Ha
- Approx. 60,000–120,000 seeds/Ha

## Harvesting

- Cut below first leaf
- Grain should be just past soft dough stage
- Use a draper style front (Honey Bee) rollers closed up to crack all grain
- Aim for 50–55%DM of heads
- Inoculate @ 1.5X rate of silage
- Demonstration yield – 11.5t/Ha

## Starch digestibility of white headlage

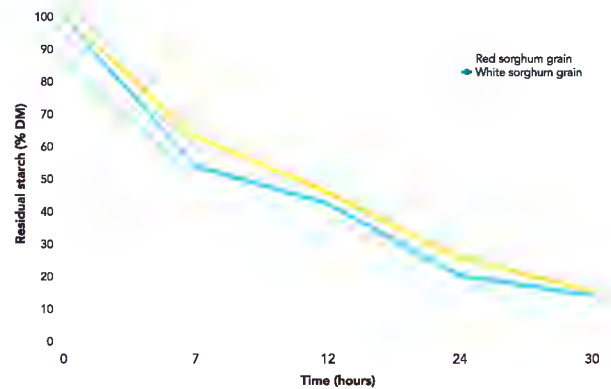


Source: DAF, Dairy Australia.

## Starch digestibility of red and white sorghum grain

With white sorghum grain, there is a 10% increase in starch availability in the rumen at 7 hours.

A 600 Kg cow fed 6Kg of white sorghum grain could potentially produce an extra 1.4 litres of milk per day.



6 Kg with 15% more available (10% of 66% starch) = 900 g of grain utilised  
 Grain at \$250/t = \$0.25/Kg \* 0.9 Kg = **\$0.23** cow/day  
 Increase milk = 1.4 L at 50c/L = **\$0.70** cow/day  
 Potential **\$0.93** cow/day OR \$93 for 100 cow herd/day

### Details

Variety	White Liberty
Planting Date	18/11/2014
Planting Rate	5 Kg/Ha
Harvest Date	2/03/2015

Calculations	Headlage	Silage	Grain
Cost MT/wet	\$75	\$40	\$290
Yield t/Ha AS FED	11.54	31.39	*
Average DM%	57%	41%	90%
Dy Matter Yield/Ha (tonnes)	6.58	12.87	*
Cost/MT DM	\$131.58	\$97.56	\$318.68
Cost Kg/DM	\$0.13	\$0.10	\$0.32
Starch %DM	51.0	23.0	66.0
Total Cost Kg/Starch	\$0.26	\$0.42	\$0.48

\* purchased price delivered

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orders@barenbrug.com.au

Freecall 1800 007 333 barenbrug.com.au

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