

Primefact

White cottonseed – a supplementary feed

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White cottonseed (WCS) is the seed left after ginning, when it still has some cotton lint on it. It is an ideal supplement for stock during drought, allowing them to efficiently utilise dry standing feed.

Feed value

White cottonseed is high in energy and protein (Table 1) but also provides fibre, mostly from the seed hulls but also from the lint. Most of the energy is in the form of oil (Table 1) which can inhibit rumen function when it exceeds 6% of any ration and so ideally WCS should be around one third of total diet.

Table 1. White cottonseed feed value.

component	typical value
dry matter	90 - 93%
energy	13 -14MJ ME/kg DM
digestibility	80%
crude protein	20 - 24%
acid detergent fibre (ADF)	35 - 45%
oil content	15-22%

Digestion of WCS in the rumen releases nutrients slowly, which means that it can be fed twice weekly.

Feeding cottonseed

Cottonseed can be fed alone or combined with other feeds. It does not require rolling or other processing and cannot cause acidosis but should be fed with 1-2% lime. Molasses, salt or grain can be used to entice stock not familiar with WCS, though once started palatability is not a problem.

Consider feeding daily amounts, to monitor acceptance and intake, for up to 10 days before switching to feeding every second day or twice weekly.

Allow 600mm per head when feeding adults in troughs. Use small dumps (enough to feed four head per dump) if feeding on the ground.

Feeding white cottonseed in small dumps allows all stock access when feeding limited amounts.



Photo: Todd Andrews

Where there is adequate dry pasture (>1200kg DM/ha), WCS can be available all the time. Note that intake generally increases as pasture quality and availability declines.

Another option is to dump a load of cottonseed in a paddock, encircle with an electric fence and then either push WCS under the fence or move the fence to feed stock.

White cottonseed can be fed *ad lib* when roughage is available. Avoid feeding in tractor tyres that have exposed wire, which can puncture internal organs.



Photo: Todd Andrews

As a high-energy feed source, WCS is valuable for short term use in emergencies. It can be dumped in a paddock for free feeding without needing to introduce it slowly. WCS can help poor cattle during cold weather, including cows that are calving, to prevent metabolic disorders. It has also been given to stock isolated by floods that can be reached by tractor and trailer.

Amounts to feed

Cottonseed is an ideal supplement for stock grazing low quality feed, such as cereal stubble or mature / frosted / drought affected pasture with no green content. Under these conditions, it can be fed at up to 0.5% of bodyweight for cows, and 0.33% for weaned calves, daily equivalent (Table 2).

It can also be combined with other feeds as a full ration during drought. For example, mix 70% grain: 30% WCS, plus a roughage source.

Table 2. Suggested feeding levels with adequate dry feed available.

stock class	kg/head/day
lactating cows	2 - 3
dry – pregnant cows	1 - 2
yearlings 250-350kg	1 - 2
Weaned calves 100-150kg	0.5

If a suitable roughage source is not available, for example during severe drought, seek veterinarian or other expert advice about the risks of feeding WCS on its own.

Restrictions

Most Australian cotton is genetically modified (GM) and not segregated from non-GM crops. As such, WCS cannot be fed to stock being produced for programs that prohibit GM feeds, such as premium grassfed markets.

As with any other purchased feed, WCS may contain chemical residues and producers should request a Commodity Vendor Declaration (CVD) at purchase. If no CVD is available, cattle sold or processed within 60 days of being fed WCS must be identified in Question 7 of a National Vendor Declaration.

Animal health

Cottonseed is low in calcium and so 1-2% lime should be added (10-20kg of lime per tonne of WCS fed) to prevent calcium deficiency. Adding lime also binds gossypol, a natural toxin contained in WCS, making it safe.

While past publications warned about gossypol poisoning, no Australian cases of calf deaths or bull infertility have been recorded when lime is added.

Ruminants such as cattle and sheep can break down some gossypol in the rumen. However, WCS should not be fed to pigs, poultry or horses as they are more sensitive to gossypol.

Lime can be sprinkled over WCS dumps or in the feed-out tray and roughly mixed in as it

sticks well to the lint. Providing lime in separate loose licks, with salt for example, is less reliable as not all stock utilise licks and intake is therefore highly variable.

Handling and storing WCS

Twelve tonnes of WCS is equivalent in volume to 20T of grain and is distributed either in tip trucks or specialised ‘moving floor’ trailers. It should be stored in sheds where it can be moved with a loader or shovelled. It should not be stored in a silo and cannot be augered.

It can be stored for short periods uncovered although the pile should have a peak and smooth sides to shed water. White cottonseed is combustible and so should not be stored with moisture content above 14% or in stacks greater than 5m high.

While it can be stored for several years in good conditions, WCS can be infested by weevils and vermin.

Like most feeds, WCS may still be palatable but contain aflatoxins that can kill stock when it gets mouldy.



Photo: Todd Andrews

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