



Green versus burnt cane harvesting

Although cane fires are still regarded as a tourist attraction, pre-harvest burning of sugarcane is one of the most sensitive environmental issues faced by cane growers.

In districts where urban communities have expanded into traditional cane growing areas, residents sometimes complain of inconvenience and discomfort caused by smoke and soot from cane fires. They query why some farmers still burn their cane when others do not.

Unfortunately, green cane harvesting and associated trash blanketing (spreading leaves and other plant residue in a thick layer of mulch over the ground) can not be used successfully on every farm due to climatic and technical constraints. Research is developing new technology aimed at overcoming present obstacles.

Until the early 1940s most sugarcane in Australia was cut green by hand and then topped and loaded manually. Pre-harvest burning was adopted in some areas as a result of serious outbreaks of Weil's disease (spirochaetal jaundice), a potentially fatal disease spread by rats in the cane.

As well as reducing pest and disease problems, burning greatly reduced the volume of leaf matter, making it easier to cut and load the cane. In fact, burning and a change in the manual harvesting method raised the nominal daily output per cutter from six tonnes a day to about nine.

This created a demand for all cane to be burnt before harvesting. From World War II onwards, burning became standard practice and farmers acquired great expertise in burning limited areas without imperiling their neighbours' crops or their own.

In 1976 a very wet season in North Queensland prompted the re-introduction of green cane harvesting after a gap of more than 30 years.

Over 85% of Queensland's sugarcane is now harvested green; north of Townsville more than 85% of the crop is cut green including nearly 100% in some areas. The inability of current machines to harvest large plant cane and two-year crops at commercial rates has restricted the adoption of green cane harvesting in the Burdekin and in northern New South Wales. In some other districts, older machinery inhibits green cane harvesting.

Advantages of green cane harvesting

Although there is environmental pressure for farmers to adopt green cane harvesting, the main impetus for change has come from the potential agronomic gains plus improved flexibility in harvesting.

With the green cane approach, harvesting is still possible when wet weather prevents burning and there is no loss when heavy rain delays harvesting of burnt cane for long periods. Blocks of cane also can be cut as scheduled without worry about unfavourable wind conditions for burning.



CANEGROWERS

Harvesting the natural energy of life

Movement of farm machinery in canefields in wet weather is often improved due to better soil weight bearing capacity under zero tillage that often occurs with green cane trash blanketing.

Trash blankets help suppress weed growth, reducing the need for frequent cultivation and spraying. This provides labour and cost savings in ratoon (regrowth) operations. Less cultivation, plus the protection against heavy downpours provided by trash blankets, means that less soil is lost from erosion in wet weather.

Because trash blankets help prevent evaporation of water from the soil surface and allow better water infiltration, they can reduce irrigation requirement and produce higher cane yields in drier areas.

Green cane generally yields as much as burnt cane and sometimes more. This varies with weather and cane varieties and is most significant where there are delays between burning and cutting of more than 24 hours. Delays of this type occur regularly during wet weather in north Queensland.

Disadvantages

Several major disadvantages to green cane harvesting have led to slow adoption in the southern region and in parts of the northern region.

Cane losses during harvesting are much higher than for burnt cane. Losses can be very high in some cane varieties; this may negate any yield advantage. Losses can be reduced by modifying harvester design but there may be higher levels of extraneous matter in the cane supply.

Harvesting green costs more because cutting rates are lower - only 60% to 70% of those in burnt cane. In very large or lodged (fallen) crops the rate may be only half that of burnt cane. Maintenance and fuel costs are also higher in green cane. Some modified older machines have difficulty cutting green.

Green cane trash blanketing is not suitable for poorly drained blocks or for cold conditions. Significant

yield losses may result from poor germination and slower growth.

Crop failures have been reported, particularly in the southern region. Recent research has also indicated higher green house gas emissions from poorly drained blocks than their burnt counter parts.

Trash blanketing may create problems in weed control, fertilising and irrigation without significant modification to equipment.

A layer of dry vegetation on the ground poses a significant fire risk. Whereas controlled pre-harvested burning of cane is seasonal and fires are short-lived, accidental or deliberately lit trash fires can occur throughout the year. These are dangerous because they can move quickly and are usually very difficult to extinguish. Trash fires cause extensive damage in immature crops, retarding maturity and resulting in lost fertiliser and other inputs.

Adoption of green cane harvesting was slow at first due to the limited capacity of most machines and lack of experience in trash blanketing. Although new harvesters can now cut most green crops commercially and many older models have been modified to cut green, improved technology still needs to be developed for cutting the biggest crops and for handling the resulting bulk of vegetation matter in the field.

Recent research in Australia has targeted ratooning in wet conditions, cane losses during harvesting, extraneous matter levels, harvesting rates, costs of harvesting and group sizes. Overseas scientific developments are being continually monitored

Progress is being made in adopting more environmentally friendly farming practices. Australian cane growers want to be good community citizens and are striving to minimise the nuisance effect of everyday farming practices on those who choose to live close to existing farms. We ask people to be tolerant of any inconvenience experienced during the harvest period from May to December



Bundaberg CANEGROWERS
32 Bourbong Street
PO Box 953
BUNDABERG QLD 4670

Telephone: (07) 4151 2555 Facsimile: (07) 4153 1986
E-mail: bdb_office@bdbcanegrowers.com.au