

LIGHTS. CAMERA. ACTION.

thecanetube competition



**sweet
prizes**

1st prize **\$8,500**

2nd prize **\$3,500**

School prize **\$3,500**

People's Choice **\$2,500**

Most viewed (each month) **\$200**

Most viewed (overall) **\$1,000**

www.canegrowers.com.au/thecanetube

thecanetube competition

\$20,000 in prizes up for grabs

Make a sugarcane movie and win

Great prizes are up for grabs in CANEGROWERS' make a movie for thecanetube competition. All you have to do is make a short video about the sugarcane industry and the best entry will be awarded some sweet prize money. Entries close 1 August 2012.

1st prize \$8,500 | 2nd prize \$3,500 | School prize \$3,500 |
People's Choice \$2,500 | Most viewed (each month) \$200 |
Most viewed (overall) \$1,000

What it needs to be about

Submit a short, entertaining video segment showcasing advances made by Aussie sugarcane growers using the latest technology and practices - and how the sugarcane industry forms an important place in the strength of our nation.

As long as it is rated G, is under 2 minutes, is a positive piece featuring farming relevant content including the good practices being supported by the Australian Government's Reef Rescue program, your video can take any style - it could be a music video, a comedy skit, a cartoon, a documentary, to name just a few ideas.

Getting started

You can use this brochure and our website to learn about the sugarcane industry. You can use any of the movie footage on www.canegrowers.com.au/virtualbustour. You can watch this clip developed by Yeo Valley Organic in the UK to promote good farming practices and commitment to protecting the environment and producing good quality foods - all in a fun way: www.youtube.com/watch?v=eOHAUvbuV4o

We have started on an example - which you can use - or better still - use this brochure to make your own from scratch. We have posted lyrics for our example clip on www.canegrowers.com.au/thecanetube

Make it quirky, make it fun, but make sure you make it informative!

Conditions of entry:

Video entries must be a maximum of 2 minutes and feature visual content.

Entries must be G-rated to be eligible - CANEGROWERS reserves the rights to not post any entry on its website or YouTube based on content which is not suitable for children or does not carry appropriate messaging as per the competition.

Entries must feature the water quality and good farming practices messages of Reef Rescue - CANEGROWERS will provide a fact sheet of information to help scripting/lyric writing by entrants.

Entries must be geared around positive promotion of the industry.

Entries must not bring the sugarcane industry or any other organisation into disrepute to be deemed eligible for judging.

Prizes are AU 1st prize \$8,500 | 2nd prize \$3,500 | School prize \$3,500 | People's Choice \$2,500 | Most viewed (each month) \$200 | Most viewed (overall) \$1,000 inc GST.

The competition opens 01 February 2012 and closes midnight 1 August 2012 (EST).

This competition is open to any entrant. Entrants under 18 must have the signature of their parent/guardian to enter and schools entries must include the school name, teacher name and authorisation to be accepted as a valid entry.

An expert judging panel will assess all valid entries and the winning videos will be posted on the CANEGROWERS website on 15 September 2012. The panel's decision will be final. The competition will be promoted heavily using mainstream media, as well as YouTube, Facebook, Twitter, music publications and websites (aimed at aspiring artists), university publications, schools, free-postcards in cafe's and a variety of other non-mainstream mechanisms.

Entrants may use any footage on the CANEGROWERS site as part of their entry www.canegrowers.com.au/virtualbustour

No copyright music

It is a condition of entry that in sending us your clip, you acknowledge that any intellectual property rights in the entry and the videos will remain with you, but that you grant to CANEGROWERS a free, worldwide, non exclusive perpetual licence to use and exploit all copyright in such material, and to use or exploit the entry and the videos (whether commercially or otherwise) for any purpose.

All entries must be original and shall not, and the Entrant warrants that, the entry does not infringe any copyright and all other rights of any third parties.

CANEGROWERS reserves the right, in its absolute discretion at any time during the competition, to vary, withdraw, postpone or cancel the competition or prize for any reason.

This competition is being run in line with CANEGROWERS General Competition Entry Rules

www.canegrowers.com.au/thecanetube

After all - farming is the future - and with the world population escalating beyond the capacity to grow food to feed the increased numbers, people will be turning to farmers for fresh, safe, nutritious foods.

And that's where Australia excels. Australia is recognised internationally for having one of the safest food production systems around and hand in hand with that, we are recognised as being a clean and green country. Aussies have spent serious research dollars on ensuring we grow nutritious food, cost effectively.

Sugarcane growers are recognised world-wide for their adoption of cutting-edge farm practices and the latest technologies - but people in their own back-yards haven't been kept posted about the enormous progress made by farmers in the past couple of decades in particular. They, together with farmers of food, fibre and energy across Australia, have been asked to step up and tell the neighbours and local communities what is happening in the agricultural sector.



This brochure has been produced by CANEGROWERS, the voice of the Australian cane growing industry.

Queensland Cane Growers Organisation Ltd ABN 94 089 992 969
T: 07 3864 6444 | F: 07 3864 6429 | enquiry@canegrowers.com.au
www.canegrowers.com.au



CANEGROWERS

This competition is a partnership between CANEGROWERS & Reef Rescue

Reef Rescue is an Australian Government Caring for our Country initiative, aimed at addressing off-farm impacts on water quality by encouraging uptake of the latest technology and best practices.



CARING
FOR
OUR
COUNTRY

To help with your script, here are just some of the farm practices being supported through Reef Rescue:



Fertilisers (nutrients which help make the crop grow)

Changing machinery to be able to put fertiliser below the soil surface instead of on top. This makes it less likely for nutrients to escape from the farm.

Planting legume crops (like soybean) in between cane crops. These improve soil health and with the help of good soil bacteria take nitrogen gas from the air and make it into a form plants can use.

Harvesting sugarcane without burning the crop to leave thick leafy mulch on the soil surface. This is called a trash-blanket and it conserves water, stops soil from washing away and stops many weeds from growing.

Chemicals (to help control pests, weeds & diseases)

New equipment helps farmers use more environmentally-friendly weed control sprays.

Better spray nozzles mean more droplets hit the weeds and less move off the paddock.

Special machines target weedy parts of the paddock and don't waste spray on clean areas that don't need it.

Growers complete voluntary training to learn about the best ways to reduce application rates and frequency of farm chemical use.

Use of chemicals has changed dramatically over the past 20 years.

Soil

Changing the spacing of cane rows so that all machinery has room to move down the same tracks - without compacting soil around the plants. This helps more water get into the soil instead of running off the paddock.

Using signals from satellites to guide machinery down precise tracks to reduce soil compaction.

Only ploughing the paddock or parts of the paddock when absolutely necessary. This conserves fuel, reduces wear of machinery and results in less soil compaction.

Water

Water and associated pumping costs account for one third of all costs for around 60% of Australia's cane growers who rely on costly irrigation. Saving water is good business for cane growers.

Technology

World class research & development

What if you could grow cane with less water, fertiliser and chemicals?

Australia is investing heavily in this area.

As a direct result of the industry's aggressive research and development program, advances have been made in areas such as pest control, where many of our programs are world class and an example to other Australian and international industries. Progress is being made with marker technology transgenic canes and biotechnology.

As new technology becomes more affordable, increasing numbers of growers are looking into more automated precision farming systems such as Global Positioning System (GPS) technology to assist them to target application of inputs – from fertiliser to water. Programs like Reef Rescue co-invest on large-cost items which help protect water quality. This investment helps growers implement high cost public good items sooner than they otherwise would have been able.

Good for environment & the bottom line

These are just some of the good things farmers do on their farm which in turn, helps to protect the Great Barrier Reef and to improve water quality. This is not only important for the environment, but also for our growers' bottom line.

Farm inputs such as fertiliser, herbicides and water are expensive and subject to frequent price hikes. Applying more precisely makes good business sense for farmers.



Farm inputs are expensive!
New technology & farm practices help sugarcane growers target inputs right to where they need them.

AUSTRALIAN SUGARCANE



One of Australia's most important rural industries

Sugarcane is one of Australia's most important rural industries, worth around \$1.5 - \$2.5 billion to the Australian economy.

Cane growing and sugar production has been around for over a hundred years in Australia. It's been a catalyst for the development of many coastal communities and underpins the economic stability of many rural townships to this day. It is the social fabric that has woven itself through the development of townships up and down the coast.

Recognised worldwide for cutting-edge practices and technology

The Australian cane growing sector is viewed as one of the most progressive in the world. The industry has channelled huge amounts of time and energy into research and development, continually looking at ways of farming better to protect the land and surrounding environment so that growers can continue to plan to make a living from their farms for generations to come.

Where is it grown?

Sugarcane production hugs coastal hubs along 2,100 kilometers of coastline between Mossman in far north Queensland and Grafton in northern New South Wales.

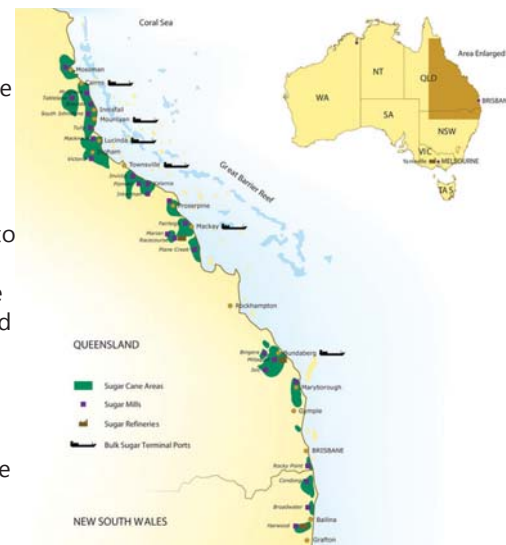
Looking after some of the most beautiful parts of Australia

Sugarcane growers manage some of Australia's most unique vegetation, animal life, waterways and have the Great Barrier Reef in their backyard. Because it is so close to the reef and beautiful rainforests, many cane growing families spend their weekends fishing and on the weekends.

Cane growers go out of their way to manage the land so it is still in excellent condition for their children and grandchildren to enjoy for many generations to come.

Things have really moved on from the hype some twenty years ago and growers have taken upon themselves the mantle of farming responsibly - to protect the natural resources, their children's heritage, and of course, the value of their property and the Great Barrier Reef.

These days growing sugarcane is about the modern technology and practices. Cane growers are always looking at the latest technology to improve their farming practices to help reduce soil erosion and protect nearby waterways and the Great Barrier Reef.



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CANEGROWERS

Naturally sweeter...

Why do we eat sugar?

People like sugar for its sweetness and the energy it provides, so farmers grow sugarcane commercially in Australia to extract the sugar.

Sugar nutrition: energy in, energy out

Sugar plays an important role in providing the energy necessary for our bodies to function properly.

Sugar is a type of carbohydrate. Other carbohydrate-rich food includes breads, cereals, fruit, rice, potatoes, legumes and pastas. Carbohydrates are the body's preferred energy source.

During digestion, all sugars (and other carbohydrates) are broken down into simple sugar, glucose, which then travels through the blood stream to body cells. There it provides energy or is stored, as glycogen, in muscles or the liver for future use.

The key is to balance energy inputs (what we eat) with outputs (the energy we use) while recognising the importance of taste (treats we like) and nutrition (what's good for us).

Since sugar has half the calories of fat (1 teaspoon of sugar contains only 20 calories where as 1 teaspoon of fat contains 45 calories), and gram for gram sugar is less fattening. In fact the most recent research indicates that people who eat moderate amounts of sugar are less likely to eat as much fat, and vice versa.

Where does sugar come from?

In Australia, sugar is made from the juice of a giant tropical grass called sugarcane. Sugar is produced in over 100 countries around the world. About 70% of sugar is produced from sugarcane, and the remaining 30% from sugarbeet, a root crop resembling a large parsnip grown mostly in the temperate zones of the northern hemisphere.

How does a plant make sugar?

Sugarcane itself looks like bamboo stalks and it is in the stalks that the plant stores energy that it doesn't need straight away – rather like animals store fat.

Sugar is actually made in the leaves of the sugarcane plant by a natural process called photosynthesis and then the sugar is stored as sweet juice in its stalks.

Photosynthesis is when the plant takes in carbon dioxide from the air through pores in its leaves and absorbs water through its roots. These combined to make sugar using energy from the sun and with the help of a substance called chlorophyll. Chlorophyll is green which allows it to absorb the sun's energy more readily and which, of course, gives the plants' leaves their green colour. The sugarcane stalks are harvested and converted into raw sugar.



ENERGY IN,
ENERGY OUT

SUGARCANE



Planting

Sugarcane is grown by replanting part of a mature cane stalk.

Farmers cut some of the fully grown cane stalks into lengths of about 40 centimeters called "setts". The setts are planted by special machines, which drop them into furrows, add fertiliser and cover them with soil.



Growing

Sugarcane needs strong sunlight, fertile soil and lots of water (at least 1.5 metres of rain each year or access to irrigation) to grow.

After a few weeks new shoots grow from buds on the joints of the setts and break through the surface of the soil. Up to 12 stalks grow from each sett, forming what is known as the stool of sugarcane.



A crop of cane takes about 9-16 months to grow in Queensland. In northern New South Wales (where it is cooler) it takes 18-24 months to grow. Typically, a cropping cycle comprises one plant crop and 3-4 ratoon (regrowth) crops. When ripe, the cane is usually about 2-4 metres tall.

Harvesting

During harvest, the cane harvester drives along each row and cuts the cane stalk off at the bottom of the plant. The long stalk is then cut into many shorter lengths called 'billets' (around 30cm). Another machine known as a cane haulout drives alongside the harvester, collecting all the billets.



Australia's sugarcane is harvested during the drier months in tropical climates – between June and December each year - depending on the weather.

Getting the cane to the mill

Once sugarcane has been harvested, it must be transported to a sugar mill as soon as possible. The longer it takes, the more sugarcane juice stored in the stalks will evaporate - so it is important that it arrives within 16 hours of being cut, to minimise deterioration.



The cane haulout collects billets until its full, then drives across the paddock to the road, where it unloads its contents either into a semi truck (for road transport) or mill bins at local sidings on the nearest railway track (for train transport). The industry maintains a network of nearly 4000 km of narrow-gauge rail lines to get cane from the paddock to the mill quickly and cost effectively.

Milling into raw sugar

Sugar mills crush and wash the juice from cane stalks and separate as much sucrose as possible from the water, impurities, fibre and dirt that comprise the rest of the cane juice.



Weighed & recorded: When the sugarcane first arrives, computerised cane transport scheduling systems enable cane movements to be continually monitored. When the cane arrives at a mill it is weighed and processed at automatic cane-receiving stations.

Chopped & shredded: The billets (short pieces of canestalk) are tipped onto a cane carrier for transport to a shredder, which chops and shreds the cane into fibrous material and ruptures the juice cells.

Crushed: It is then crushed by large rollers. Firstly, pairs of rollers feed the cane through a series of mills comprising three large rollers arranged in a triangular formation. This separates the juice from the fibrous material, which is called bagasse, which is used as fuel to run the mill's boiler furnaces.



Heated & cooled to make crystals: The juice is pumped away for processing into raw sugar. It is cleaned to remove impurities and thickened into a syrup by boiling off excess water. It is then seeded with tiny sugar crystals in a vacuum pan and boiled until

Paddock to Plate

sugar crystals have formed and grown. These crystals are separated from the molasses around them in centrifuges that are like giant spin dryers. The crystals are then tumble-dried and stored in large bins until they are to ports.

Refining (from 'raw' to ready to eat)

Australian mills produce 'raw' sugar, which is an intermediate product which then needs further refining before it becomes suitable for human consumption, or used as an ingredient in the manufacture of food and beverages.

At the refinery, the raw sugar crystals are washed and dissolved in hot water. Carbon dioxide and lime are added to the melted sugar to remove any remaining impurities. The sugar is filtered through cloth, then the remaining colours and impurities are removed and the pure sugar is boiled in a vacuum pan and seeded with fine sugar crystals. When the crystals are large enough they are tumble dried to remove moisture. The dried sugar is then graded into sizes ready for delivery to customers.



Australian refineries process around 20% of Australia's raw sugar into white (refined) sugar and liquid sugar products and other specialty products such as Golden Syrup, treacle, coffee sugar and cube sugar.



Cane growers see themselves as guardians of rainforest and reef, which many of them consider part of their backyard, and part of their legacy to their children and grandchildren

80% exported overseas



Around 80% of Australia's production is exported overseas as 'raw' sugar, where it is further processed.

Raw sugar is stored at bulk sugar terminals before being sent to refineries.

Queensland's bulk sugar terminals can store more than 2 million tonnes of raw sugar, allowing year-round deliveries to refineries in Australia and overseas. Queensland bulk sugar

terminals are located at Cairns, Mourilyan, Lucinda, Townsville, Mackay, and Bundaberg.

Since 1964 all raw sugar in Australia has been handled in bulk. Bulk sugar is transported from the mills in containers by road or rail to the terminals, where it is carried by conveyor into the storage shed. When a ship arrives it is filled quickly via conveyors.

Australia is the world's second largest exporter of raw sugar after Brazil. We sell mainly to East Asia, China, Indonesia, Japan, Korea, Malaysia and New Zealand. Australia has an international reputation as a reliable producer of high quality sugar.

HOW JUST ONE PRACTICE CHANGE CAN HAVE MANY BENEFITS...

An industry that was once characterised by brilliant cane fires, now only relies on the iconic blazes where land management practices dictate. The coastline, which is subject to seasonal inundation, has now virtually eliminated movement of soil once associated with the heavy rains. Over 80% of growers now cut the cane green and spread the trash cuttings over the harvested paddock, protecting the soil.



Fire was used to get rid of trash and stop the spread of disease by rats living in cane



New technology means most cane can be harvested green which is better for the farm and environment

Harvesting cane green has many benefits, including:

- Filtration of nutrient run-off
- Minimises siltation of waterways
- Minimises undergrowth, weeds and grasses
- Reduces chemical control requirements
- Stabilises bank erosion
- Provides wildlife corridors
- Assists with vermin control.

FOOD, FIBRE & ENERGY

Although raw sugar is the main product made from Australian sugarcane, there are a host of other uses for the plant. Here we cover just some of these.

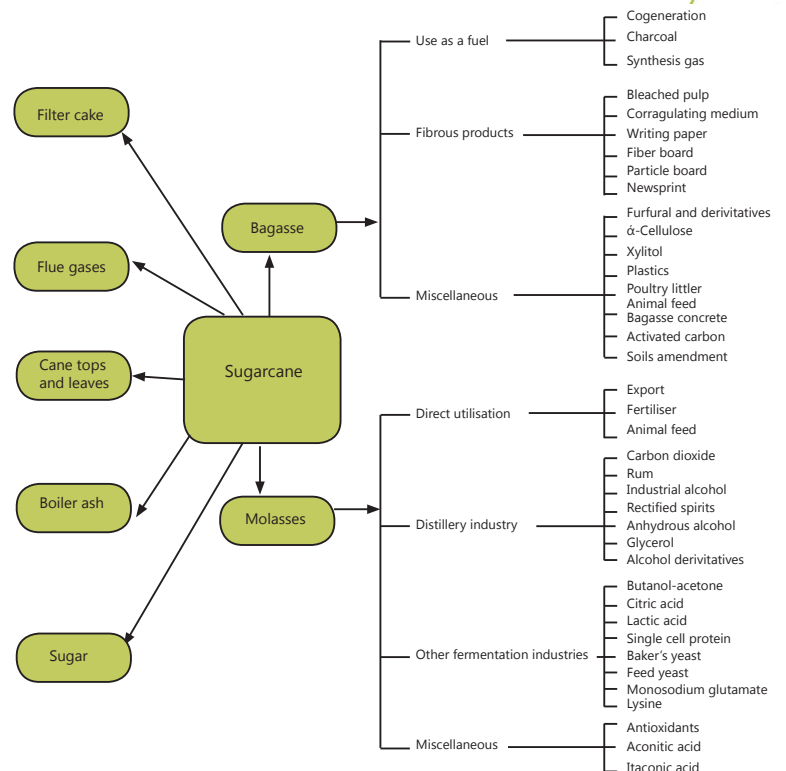
By-products from mills are recycled, adding to the efficiency of the milling process.

Other by-products include residue which can be used as a fertiliser on cane farms and gardens, and specialised inputs which can be made into plastics, clothing and pharmaceuticals.

Molasses is a dark syrup separated from raw sugar crystals during the milling process. It is used as a raw material for ethanol and rum. It can also be used for animal feed.



Did you know that every part of the sugarcane plant is used once it goes to the sugar mill? The sugar is taken out of the stalk through a crushing process. The left over fibre from the stalk is called **bagasse**. It is used to power the sugarcane mill. That means that the sugarcane can make electricity as well as sugar! Sugarcane is the only crop in the world that provides its own processing energy, which means it does not rely on fossil fuel to power the mill.



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