



CANEGROWERS

# Sugarcane

Resource Book 2010

Learn why sugar  
can be good for us  
and our  
environment



## Sugar is our most precious crop that provides energy and so much more!

Queensland and northern New South Wales have the best weather and soil conditions to be able to grow sugarcane. Sugarcane is a type of grass that contains sugar in the stalk. You may know sugar in its finished form, as white sugar or brown sugar. However, sugar comes in many other forms, such as caster sugar, icing sugar and molasses.

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

Our body needs sugar, which is a carbohydrate.

Natural sugar energy types are fructose, sucrose and glucose. Athletes, such as the Cowboys, need sugar so they have enough energy on the field.

The energy used by the Cowboys to play football comes from glucose.

Too much sugar is bad for you, but meeting your daily needs makes a balanced way of life.

## Facts

Sugar is a type of carbohydrate and is good for easy and fast absorption into your body. Sugar gives body cells energy to produce glucose.

The glucose makes the body run. Sugar is also stored as glycogen in the liver. When your body runs out of glucose, it uses the glycogen to produce energy.

Once your body has stored enough glucose and glycogen, the rest is turned into fat.

It's important to get the balance right to ensure you have enough energy for your activities and are not over-storing sugar supplies.

Carbohydrate-rich food includes breads, cereals, fruit, rice, potatoes and pastas.



**Cowboys player Ty Williams was born and raised in Innisfail, a large sugarcane growing area in Queensland. Listen to Ty talk about sugarcane in the interactive video for a chance for your classroom to win a great Cowboys prize.**



# Water

Cane growers take our natural resource of water very seriously. They use water wisely to ensure a profitable, healthy crop.

There are several ways growers use water effectively and efficiently.

They collect it, store it and keep it clean.

Here are 9 ways growers collect water, store it on their farm and filter it so when it leaves the farm it's as clean as possible. This is the new way farmers make sure they work with the environment, not against it.



## collect it

1 Cane growers collect water in several ways in order to grow the sugarcane plants.

2 They build man-made dams and **wetlands** to collect the rainwater. This stores the water but also provides a good spot for wildlife, birds and fish.

3 They use irrigators that apply water to the cane. They try and put the right amount on at the right time, ensuring little water wastage.

## store it

4 Rain soaks into the soil and is used by the cane. Sometimes heavy rain runs off the paddock and by using the natural lay of the land, cane growers are able to **channel** water into their **wetland** and dams.

5 Excess water that can not be stored is filtered naturally through grasses and soil. This cleans the water before it flows back into the rivers.

6 **Sediment traps** are also used to ensure any soil being carried by running water is trapped, keeping the soil on the farm.

## keep it clean

7 Natural processes are used as much as possible so the cane farmer does not work against the land. This helps to keep the farm a success.

8 Nutrients (food for the cane) are needed to help the cane grow. Only the right amount needed is applied to the crop, because too much would be a waste of money and not be good for the land.

9 Growers can use environmentally-friendly weed killers which do not build up in the soil or move off the farm in water. They only apply the spray where needed.



## Being Green

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.

Sugar is one of Australia's most important rural industries, worth around \$1.5 - \$2.5 billion to the Australian economy. Sugarcane farmers grow 32 - 35 million tonnes of cane per year, which when processed, equates to around 4.5 - 5 million tonnes of sugar.

understanding nutrition (what's good for us).

Sugar has half the calories of fat. 1 teaspoon of sugar contains 20 calories whereas 1 teaspoon of fat contains 45 calories.

The key to sugar is to balance energy inputs (what we eat) with outputs (the energy we use) while

The energy you put into your body needs to be balanced with the energy you use up. Physical activity, such as football, will help to keep your body balanced.

# Energy In Energy Out



# One cool crop



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## CANEGROWERS

Major sugarcane growing areas in Queensland and northern New South Wales



## Sugarcane facts Queensland Crop

Sugarcane can be seen growing along the northern New South Wales and Queensland coast. 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.

Sugar is made and stored as sweet juice in the stalk of the sugarcane plant by a natural process called **photosynthesis**.

**Sugarcane is a very useful crop and more than just sugar**

### Ethanol for fuel

Once the sugar is extracted from the stalk, the leftover sugar in molasses can be processed to make ethanol. This is the only crop in the world that can give you both fuel for the body and fuel for the car at the same time!

### Disposal products

Sugarcane fibres can be used to make disposable cutlery, plates, cups and also pen casings as well as other items previously made from plastic.

### Clothing

The sugarcane fibre can make material for clothing such as t-shirts and even jeans.

### Food for cattle

Molasses is made from sugar which is used as cattle food.

*Imagine having clothing made from sugarcane?*



*Become a sugarcane farmer supporter.*

Sugarcane farmers love the land they work on. It is in their best interests to protect and nurture their land to ensure their farm stays productive and well managed for the future.

We need farmers to grow our food and we trust them to grow the food in the best way for us and the land.

## Our Sweetest Queensland Crop

Did you know that up to 5 million tonnes of processed sugar is grown in Queensland and northern New South Wales every year? That is the equivalent to 21,000 Dairy Farmers Stadiums!



# Glossary of Terms

- Bagasse** - The fibrous pulp that remains after juice is extracted from sugar cane stalk.
- Channel** - The transfer water from one location to another.
- Fallow** - Land that is plowed and left unseeded during a growing season and between seasons.
- Fertile** - Capable of producing crops
- Glucose** - The main sugar found in the blood and the body's main source of energy.
- Molasses** - Thick dark syrup produced by boiling down juice from sugar cane during the sugar refining process.
- Photosynthesis** - The process by which green plants use sunlight to synthesize foods from carbon dioxide and water.
- Sediment Traps** - Dam-like structures to conserve water and soil on a farm.
- Wetlands** - Land that is covered mostly with water, with occasional marshy and soggy areas.

## Enter & win!

Just as the Cowboys have many fantastic supporters, why not show your support for all the great work the sugarcane farmers are doing in

working towards a better future for our land and our water health?

Enter our competition for your chance to win some CANEGROWERS goodies. Details are on the canegrowers website. [www.canegrowers.com.au](http://www.canegrowers.com.au)

## Our growers caring for our Reef with the help of the Australian government.

The Australian government has a program called 'Caring for our Country' which helps sugarcane farmers do good things on their farm which in turn, helps to protect the Great Barrier Reef from pollution and to improve water quality. This program is called Reef Rescue and pays for up to half the cost of environmental changes needed on the farms.

### Areas where farmers are given help are:

#### Nutrients

- 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

- 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

#### Soil

- Changing the spacing of cane rows so that machinery has room to move 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 so it doesn't wander all over the paddock compacting soil.
- 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.



CARING  
FOR  
OUR  
COUNTRY

## Canegrowers + Cowboys

CANEGROWERS are proud sponsors of the North Queensland Cowboys. Look out for our fantastic ball boys this 2010 season sporting the CANEGROWERS shirts. We are working together with the Cowboys to bring science education to Queensland schools. Check out our website for modules and current activity pages at [www.canegrowers.com.au](http://www.canegrowers.com.au)