

# CANE PRICE FORMULA



## History of the cane price formula

The formula has a long history dating back to the early 1900s:

$$\text{Cane Price} = \text{Sugar Price} \times 0.009 \times (\text{CCS}^* - 4) + \text{Constant}$$

\*The recoverable sugar content from sugar cane crushed by a sugar mill is termed the Commercial Cane Sugar (CCS) content of cane.

With very minimal adjustment (in fact, only to the value of the Constant), this formula is still in use for most Queensland mills. The linkage of cane price to sugar price underpins the operation of today's grower price risk management choices.

The original formula was introduced in the early 1900's when CCS was around 12 and mill efficiency (Coefficient of Work, or COW) was around 90%. In effect, the formula divided the revenue earned from the sale of raw sugar into approximately 2/3 for the grower and 1/3 for the miller.

Since the early 1900's, cane quality and milling efficiency have both significantly improved. However despite these changes, and the fact that neither the formula nor any specific division of sugar revenue has been legislated, the cane price formula has endured.

One of the reasons for this is that the formula cleverly incentivised the parties to improve their individual sections of the industry. If growers' grew sweeter cane they would keep the value of any additional CCS above 12. If the mills were to invest in better equipment and technology they would keep efficiency gains above 90% COW. This is exactly what has happened.

### Commercial Cane Sugar (CCS)

CCS is a measure of the sucrose that is commercially obtainable from cane. The CCS content in cane varies across the crushing season. Today, the CCS used in the cane price formula is a grower's 'relative CCS'. Relative CCS is used as opposed to actual CCS of delivered cane so growers who harvest and deliver at different times during the season are not disadvantaged relative to other growers.

### Sugar Price

The sugar price used in the cane price formula is the net sugar price received by the miller for the sale of sugar after the inclusion of marketing premiums and costs. Marketing premiums include polarisation premiums and physical premiums. Marketing costs include sugar storage and handling costs, finance costs for advance payments, pricing and marketing administration costs.

Internationally traded sugar contracts are based on raw sugar of 96 degrees polarisation as measured by the International Polarisation Scale (IPS), which is the equivalent of saying that the sugar contains 96% sucrose. These contracts also specify standard payment adjustment factors to account for sugar with different sucrose content or polarisation. The Queensland sugar industry typically produces sugar which has a polarisation close to 99 degrees which results in an additional polarisation premium of approximately 3.7 per cent. In addition to polarisation premiums, Queensland sugar also attracts physical premiums because we are closer to Asian markets than other suppliers such as Brazil.

To align industry payments on a similar basis to internationally traded sugar, the Queensland sugar industry has also developed a standardised method for converting tonnes of sugar at its typical production quality of 99 degrees polarisation, to an equivalent amount of tonnes of sugar at 96 degrees polarisation, or tonnes IPS. Sugar price in the Queensland industry is therefore expressed in dollars per tonne IPS (AUD/IPS tonne).

## WILMAR'S CANE PRICE FORMULA

Wilmar's cane price in AUD/tonne of cane is determined by:

**SUGAR PRICE** is based on the weighted average outcome resulting from a grower's pooling and forward pricing decisions for the season and is expressed in units of AUD/IPS tonne.

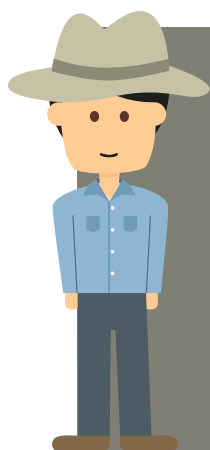
**THE CONSTANT** is the result of changes over time, expressed in cents per tonne of cane.

$$\text{CANE PRICE} = 0.009 \times \text{SUGAR PRICE} \times (\text{CCS} - 4) + \text{CONSTANT}$$

**CCS** is the grower's relative CCS determined in accordance with the methodology specified in the grower's Cane Supply Agreement which varies slightly from region to region.

## Mick and Tony

Let us introduce two cane growers\* with different pricing decisions and growing conditions. Through a series of factsheets we're going to track Mick and Tony's decisions on their farms, to see how each element of the pricing process affects their cane revenue.



### MICK

manages an irrigated cane farm in the Burdekin area. Mick started cane farming 20 years ago having firstly bought a 150 hectare farm in the Burdekin Irrigation Area auction scheme. He's since purchased additional land and now farms 267 hectares. Mick had no prior knowledge of cane farming until his original farm purchase 20 years ago. He was previously a cattle and cotton farmer from Emerald and has a high level of understanding on how commodity hedges can help with managing price risk. He has a low appetite for risk and uses hedging mechanisms conservatively.

Mick's farm produces 25,000 cane tonnes (5 year average) on an 85% rotation. His average cane yield is 110 tonnes per hectare. His cane consistently measures above mill average CCS. Last season his relative CCS was 14.9. It is assumed the Constant for Mick's cane price formula is 0.6.

Mick's sugar price is \$466.50/tonne based on the weighted average outcome of his pooling and forward pricing decisions.

#### Mick's cane price

Based on the information above, Mick's cane price is:

$$0.009 \times (14.9 - 4) \times \$466.50 + 0.6 = \$46.36/\text{tonne of cane}$$

### TONY

farms in the Herbert River district and runs a 166 hectare farm producing 12,000 tonnes of cane at 85 tonnes per hectare (85% rotation). Tony is a third generation cane farmer. He has low debt levels, though his cane performed below expectation last season when the relative CCS in his cane was 13.45. Tony's farm was badly affected by last season's excessive wet weather.

Despite the wet weather impact on the cane crop, his farm has recovered well after being battered by Cyclone Fran in 2012 when it only produced 9,600 tonnes of cane (equivalent to a 20% production loss from average production). Sugar price risk management is a new subject to Tony; he is not fully across the subject but thinks it is a good idea. It is assumed the Constant for Tony's cane price formula is 0.6

Tony's sugar price is \$481.50/tonne based on the weighted average outcome of his pooling and pricing decisions.

#### Tony's cane price

Based on the information above, Tony's cane price is:

$$0.009 \times (13.45 - 4) \times \$481.50 + 0.6 = \$41.55/\text{tonne of cane}$$



\*hypothetical case studies, not based on any individual farm or cane grower.



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