



Sugar Research
Australia






VARIETY GUIDE 2020/2021

Southern Region



HOW TO USE THIS GUIDE

This guide is designed to help growers in the Southern canegrowing region with their agronomic considerations when selecting new varieties to plant and trial on their farms. The information comes from the best available data of regional variety performance and disease ratings. The information in the tables will help you understand:

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WANT TO KNOW WHAT IS HAPPENING IN THE OTHER REGIONS?

You can find all the regional variety guides on the SRA website sugarresearch.com.au

(Cover page) Prepared trial site for SRA Variety trial in 2018 on Darryl Rapley's farm in Childers.

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NEW & RECENT VARIETIES AVAILABLE IN THE SOUTHERN REGION

Variety Recommendation and Release Process

Regional Variety Committees (RVC) are responsible for variety release decisions. SRA supports these groups with secretariat support and the provision of technical information to assist the committee to make decisions on particular varieties. RVCs are composed of voting members and observers to ensure transparency in the decision making process. The Southern RVC (Sugarcane Biosecurity Zone 4 and 5) voting membership consists of one grower representative, one miller representative

and Prod Services from Bundaberg, Isis, Maryborough and Rocky Point mill areas, in total 12 voting members. Rocky Point also sits on the RVC in NSW as an observer. The Southern RVC requires a majority vote for progression of a variety through the breeding program and a majority vote for the release of a variety.

If you would like more information on new variety release and regional variety committees, please visit the SRA website: sugarresearch.com.au/growers-and-millers/varieties/regional-variety-committees/

Presented below are the results of trials conducted in the Southern region. Yield (TCH) and CCS for each new variety are compared with the trial results of various standard varieties.

Variety: SRA29 ^Q QS08-9474		Parentage: Q170 x QC90-289 / Summary: High tonnes cane, average CCS.								
TRIAL HARVEST YEAR	CROP CLASS	YIELD (TCH)				CCS				# OF HARVESTS
		SRA29 ^Q	Q208 ^Q	Q240 ^Q	KQ228 ^Q	SRA29 ^Q	Q208 ^Q	Q240 ^Q	KQ228 ^Q	
(2014 series FATs): 2015	Plant	105	95	83	99	17.1	17.1	16.5	16.9	4
2016	1R	116	118	115	116	16.4	16.4	16.2	16.9	4
2017	2R	106	106	109	110	16.3	16.6	16.3	16.7	4
2018	3R	106	105	121	104	16.3	16.3	16.5	16.8	3
(2016 repeat FATs): 2017	Plant	109	100	100	105	15.4	16	15.9	15.8	5
2018	1R	104	91	98	100	14.7	14.7	15.1	15.3	5
2019	2R	87	81	81	82	14.3	14.3	14.7	15	5
Overall Performance		105	99	101	102	15.8	15.9	15.8	16.1	30
Available 2021										
Comments:		Reliable germination, good disease resistance. Resistant to Fiji, Pachymetra, Leaf Scald and Mosaic. Intermediate resistant to Smut.								

Variety: SRA20 ^Q QS07-8815		Parentage: QN86-5279 x QS91-7008 / Summary: High tonnes cane, lower CCS.								
TRIAL HARVEST YEAR	CROP CLASS	YIELD (TCH)				CCS				# OF HARVESTS
		SRA20 ^Q	Q208 ^Q	Q240 ^Q	KQ228 ^Q	SRA20 ^Q	Q208 ^Q	Q240 ^Q	KQ228 ^Q	
(2013 series FATs): 2014	Plant	80	68	68	68	13.4	14.2	14.5	14.2	4
2015	1R	96	86	89	87	15.8	17.0	17.1	17.1	4
2016	2R	102	91	100	95	16	17.2	17.0	17.3	4
2017	3R	93	95	93	93	14.1	15.3	14.9	15.1	2
(2015 repeat FATs): 2016	Plant	155	126	140	137	14.5	15.9	15.9	16.5	4
2017	1R	126	118	123	123	14.0	15.2	15.1	15.5	4
2018	2R	92	88	99	94	14.4	15.3	15.9	15.8	4
Overall Performance		107	96	102	100	14.6	15.8	15.8	16.0	26
Available 2020										
Comments:		Slow and reliable germination, good disease resistance. Resistant to Smut and Pachymetra, intermediate resistant to Fiji and Leaf Scald. Good fibre quality trends and good fibre content.								

Variety: SRA19 [Ⓟ]		QN02-1707	Parentage: QN86-640 x QN90-252 / Summary: High tonnes cane, lower CCS.							
TRIAL HARVEST YEAR	CROP CLASS	YIELD (TCH)				CCS				# OF HARVESTS
		SRA19 [Ⓟ]	Q208 [Ⓟ]	Q240 [Ⓟ]	KQ228 [Ⓟ]	SRA19 [Ⓟ]	Q208 [Ⓟ]	Q240 [Ⓟ]	KQ228 [Ⓟ]	
(2011 series FATs): 2012	Plant	117	91	109	102	15.0	15.7	15.7	15.8	4
2013	1R	120	101	116	105	16.3	17.1	17.2	17	4
2014	2R	116	108	121	111	15.4	16.2	16.1	16.1	4
2015	3R	116	115	125	117	16.6	18.0	17.5	17.7	3
2016	4R	122	115	136	118	17.5	18.7	18.0	18.4	1
(2013 repeat FATs): 2014	Plant	86	78	77	77	12.6	13.6	13.9	13.8	5
2015	1R	100	93	92	92	14.4	15.8	16.1	16.3	5
2016	2R	104	96	104	99	15.0	16.5	16.5	16.8	5
2017	3R	92	95	93	93	13.9	15.3	14.9	15.1	2
Overall Performance		107	97	105	99	15.0	16.00	16.0	16.1	33
Available 2020										
Comments:		Maintains productivity in ratoons. It has been tested until 4th ratoon. Resistant to Pachymetra Root Rot and Leaf Scald and intermediate resistant to Smut and Fiji.								

SRA29

SRA20[Ⓟ]SRA19[Ⓟ]

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DISEASE RESISTANCE

Disease has the potential to lower the performance of varieties on your farm. This table will help you select varieties given the diseases that may be present on your farm.

Southern Disease Ratings											
VARIETY	MILLAREA RECOMMENDED	FIJI LEAF GALL	MOSAIC	LEAF SCALD	SMUT	CHLOROTIC STREAK	ORANGE RUST	BROWN RUST	RED ROT	YELLOW SPOT	PACHY-METRA
SRA29	B, I, M	R	R	R	I	U	U	U	U	U	R
SRA20 [Ⓛ]	B, I, M	I	R	I	R	U	U	U	R	U	R
SRA19 [Ⓛ]	B, I, M	I	R	R	I	U	R	U	U	I	R
SRA11 [Ⓛ]	B, I, M, RP	R	R	R	R	U	R	U	I	U	R
SRA4 [Ⓛ]	B, I, M, RP	R	R	R	I	U	R	U	R	I	I-R
SRA2 [Ⓛ]	B, I, M, RP	R	I	R	I	U	I	U	R	U	R
SRA1 [Ⓛ]	B, I, RP	I	R	R	I	U	R	R	I	U	I
Q252 [Ⓛ]	B, I, M, RP	I	R	R	I	U	R	U	R	I	I
Q249 [Ⓛ]	B, I, M, RP	R	I-R	R	R	U	R	U	I-R	R	I
Q247 [Ⓛ]	B, I	R	R	R	I	U	R	U	R	S	R
Q245 [Ⓛ]	B, I, M, RP	R	R	R	R	U	R	U	S	R	R
Q242 [Ⓛ]	B, I, M, RP	R	R	R	I	I	R	U	I-R	R	R
Q240 [Ⓛ]	B, I, M, RP	I-S	R	R	R	I-R	R	U	R	I	I
Q238 [Ⓛ]	B, I, M, RP	I-R	R	R	R	S	R	R	I-R	S	R
Q235 [Ⓛ]	B, I, M, RP	R	R	R	R	I-S	I-R	U	R	R	R
Q232 [Ⓛ]	B, I, M, RP	I	R	R	R	R	R	U	I-R	R	I
KQ228 [Ⓛ]	B, I, M, RP	I	R	R	R	S	R	R	R	I	I
Q208 [Ⓛ]	B, I, M, RP	I-S	R	R	I-R	R	R	R	R	R	I
Q200 [Ⓛ]	B, I	I	R	R	R	I	R	R	R	I-R	I
Q183 [Ⓛ]	B, I, M, RP	R	R	I	I-R	S	R	R	I	I-S	R
Q151	B, I	R	R	R	R	U	R	R	I-R	U	I-S
Q138	B, I, M, RP	R	I-S	R	I-S	I-R	R	R	I-S	I-S	R

Rotation of varieties is important in the management of diseases. Arrange for your local productivity services officer to inspect your farm for disease. The Diseases of Australian Sugarcane Field Guide provides information on diseases including how to identify and manage them. The guide is available on the SRA website sugarresearch.com.au.

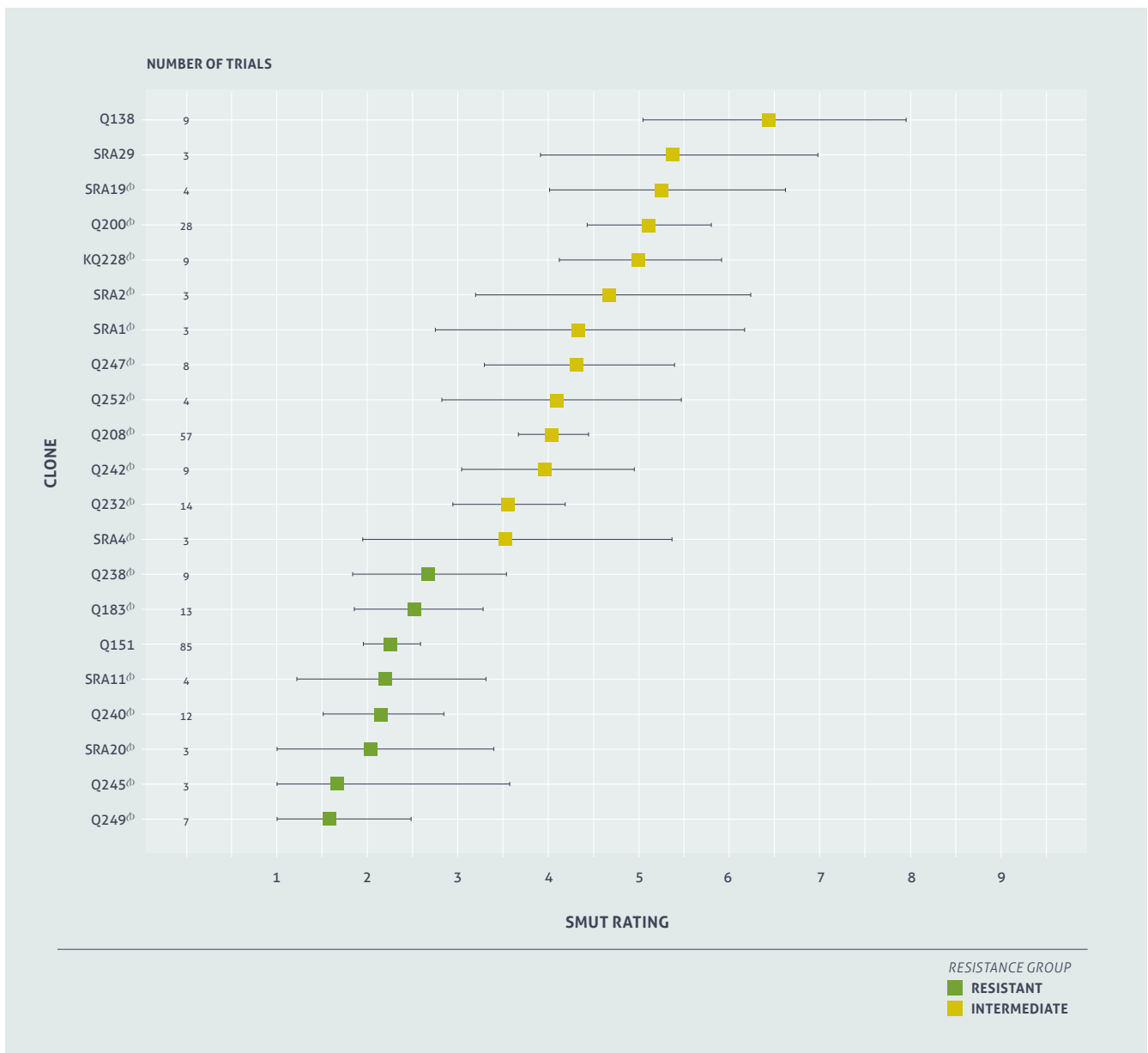
You will note that RSD resistance ratings are not included in this variety guide. Varietal resistance is not one of the three pillars of RSD disease management; growers should continue to ensure that disease-free seed cane is used to establish crops, that crops are planted into volunteer-free land and equipment is decontaminated regularly. SRA is reviewing methods for screening varieties for RSD resistance. Current ratings remain available on QCANESelect®. Current varieties are not immune to RSD and some yield loss can be expected in all canes.

- RESISTANT (R)
 - INTERMEDIATE - RESISTANT (I-R)
 - INTERMEDIATE (I)
 - INTERMEDIATE - SUSCEPTIBLE (I-S)
 - SUSCEPTIBLE (S)
 - UNKNOWN (U)
- B** BUNDABERG
I ISIS
M MARYBOROUGH
RP ROCKY POINT



SMUT RATINGS

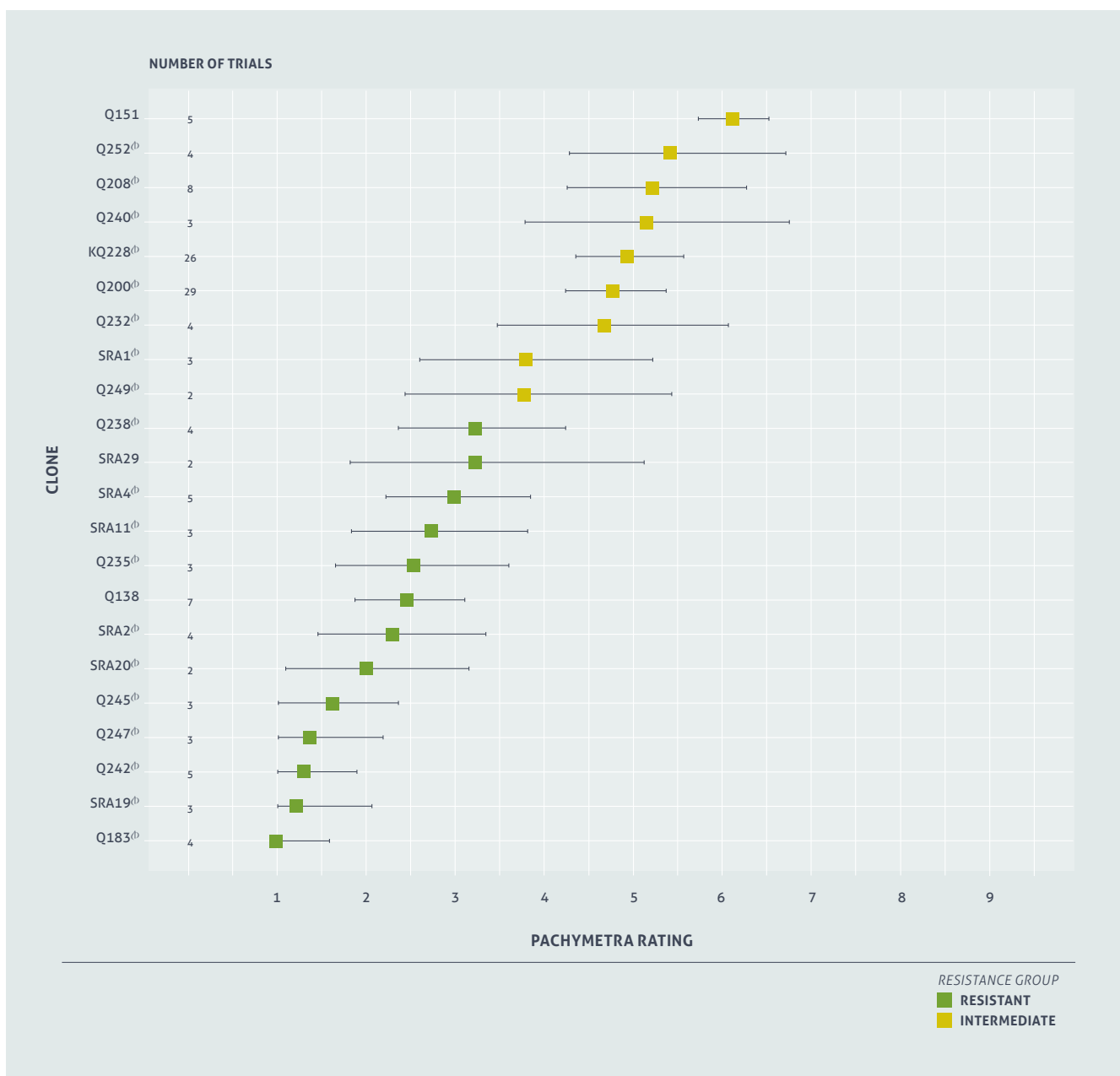
Smut resistance ratings are calculated from the incidence and severity of infection compared to standard varieties in inoculated field trials. The graphic includes the rating and the 95% confidence interval for each variety. The confidence interval is influenced by factors such as the number of trials and the uniformity of smut infection. For example the variety SRA20[Ⓛ] has been in three smut trials (P and 1R) and has a confidence interval from 1 to 3.4. Rating confidence will improve as more data is collected. SRA29 has been included in a fourth smut trial but the results are not presented here. Early indications are that the rating will remain as intermediate, with a lowering of the upper confidence limit from 7.0 to 6.1.





PACHYMETRA RATINGS

Pachymetra resistance ratings are calculated from the severity of infection in a test clone compared to standard varieties in inoculated bench trials. The graphic includes the rating and the 95% confidence interval for each variety. The confidence interval is influenced by factors such as the number of times a variety has been tested and variability of Pachymetra infection within each trial. For example the variety Q200^(b) has been tested in 29 trials and has a narrow confidence interval from 4.3 to 5.4 while the new variety SRA20^(b) has only been tested in two Pachymetra trials and ranges from 1.2 to 3.3. Rating confidence will improve as more data is collected.



HARVEST MANAGEMENT

Select varieties for a harvest plan that can be followed to maintain maximum CCS throughout the year. The tables below indicate early, mid or late sugar varieties.

Bundaberg & Isis Harvest Management					
VARIETY	EARLY SUGAR	MID SUGAR	LATE SUGAR	TRASHING	LODGING
SRA29	Poor	Good	Good	Free	Average
SRA20 [Ⓞ]	Poor	Average	Good	Free-Average	Average
SRA19 [Ⓞ]	Poor	Average	Good	Average	Average
SRA11 [Ⓞ]	Average	Good	Good	Free	Good
SRA4 [Ⓞ]	Average	Average	Average	Average	Good
SRA2 [Ⓞ]	Good	Good	Good	Free-Average	Average
SRA1 [Ⓞ]	Good	Good	Good	Average	Poor
Q252 [Ⓞ]	Good	Good	Good	Free	Average
Q249 [Ⓞ]	Average	Average	Good	Average	Poor
Q247 [Ⓞ]	Poor	Poor	Poor	Tight	Average
Q245 [Ⓞ]	Poor	Average	Average	Average	Average
Q242 [Ⓞ]	Average	Average	Poor	Average-Tight	Poor
Q240 [Ⓞ]	Good	Good	Good	Free-Average	Average
Q238 [Ⓞ]	Poor	Average	Average	Average	Good
Q235 [Ⓞ]	Good	Good	Average	Average	Poor
Q232 [Ⓞ]	Poor	Average	Poor	Tight	Poor
KQ228 [Ⓞ]	Good	Good	Average	Average-Tight	Average
Q208 [Ⓞ]	Average	Good	Good	Free	Average
Q200 [Ⓞ]	Poor	Average	Good	Free	Average
Q183 [Ⓞ]	Poor	Average	Good	Free-Average	Average
Q151 [Ⓞ]	Good	Average	Poor	Average	Average
Q138	Poor	Poor	Poor	Average	Average

Maximise your profit at harvest:

Selecting varieties for specific sugar maturity profiles, planting and harvesting them for optimal CCS maturity can make a significant difference in the profit your crop can make for you. Making harvest decisions based on in-field maturity maximises profit making decisions.

SEASONAL SUGAR AND LODGING

- GOOD
- AVERAGE
- LOW
- POOR
- UNKNOWN

TRASHING

- FREE
- FREE-AVERAGE
- AVERAGE
- AVERAGE-TIGHT
- TIGHT

Maryborough					
VARIETY	EARLY SUGAR	MID SUGAR	LATE SUGAR	TRASHING	LODGING
SRA29	Poor	Good	Good	Free	Average
SRA20 [Ⓛ]	Poor	Average	Good	Free-Average	Average
SRA19 [Ⓛ]	Poor	Average	Good	Average	Average
SRA11 [Ⓛ]	Average	Average	Average	Free	Good
SRA4 [Ⓛ]	Average	Average	Average	Average	Good
SRA2 [Ⓛ]	Good	Good	Good	Free-Average	Average
SRA1 [Ⓛ]	Good	Good	Good	Average	Poor
Q252 [Ⓛ]	Good	Good	Average	Free	Average
Q249 [Ⓛ]	Average	Average	Good	Average	Poor
Q242 [Ⓛ]	Average	Average	Average	Average-Tight	Poor
Q240 [Ⓛ]	Good	Good	Good	Free-Average	Average
Q238 [Ⓛ]	Poor	Average	Average	Average	Good
Q235 [Ⓛ]	Good	Good	Average	Average	Poor
Q232 [Ⓛ]	Poor	Average	Average	Tight	Average
KQ228 [Ⓛ]	Good	Good	Average	Average-Tight	Average
Q208 [Ⓛ]	Average	Good	Good	Free	Average
Q138	Average	Average	Average	Average	Good

Rocky Point					
VARIETY	EARLY SUGAR	MID SUGAR	LATE SUGAR	TRASHING	LODGING
SRA11 [Ⓛ]	Average	Average	Average	Free	Unknown
SRA4 [Ⓛ]	Average	Average	Average	Average	Unknown
SRA2 [Ⓛ]	Good	Good	Average	Free-Average	Average
SRA1 [Ⓛ]	Good	Good	Good	Average	Average
Q252 [Ⓛ]	Good	Good	Good	Free	Average
Q249 [Ⓛ]	Average	Average	Average	Average	Poor
Q245 [Ⓛ]	Poor	Average	Average	Average	Unknown
Q242 [Ⓛ]	Good	Good	Good	Average-Tight	Poor
Q240 [Ⓛ]	Good	Good	Good	Free-Average	Average
Q238 [Ⓛ]	Average	Good	Good	Average	Good
Q235 [Ⓛ]	Good	Good	Average	Unknown	Poor
Q232 [Ⓛ]	Poor	Average	Average	Tight	Unknown
KQ228 [Ⓛ]	Good	Good	Average	Average-Tight	Average
Q208 [Ⓛ]	Good	Good	Good	Free	Average
Q183 [Ⓛ]	Average	Good	Good	Free-Average	Average
Q155 [Ⓛ]	Good	Good	Good	Unknown	Unknown
Q138	Average	Average	Average	Tight	Unknown



VARIETY BY HERBICIDE SCREENING TRIALS

Sugarcane varieties are known to have variable responses to herbicides with some being more impacted than others. As a result, data outlining susceptibility is critical to optimise productivity outcomes.

Since 2014, SRA has been conducting trials following a two-step process to obtain reliable data for the susceptibility of varieties to herbicide

- a fully randomised replicated pot trial in year 1 to short list the most susceptible combinations of varieties and herbicides.
- a fully randomised replicated field trial in year 2 to confirm that the shortlisted combinations have an impact on yield.

In year 3, the two-step process starts again with new combinations of newly released varieties and herbicides.

In these trials, products are applied at their maximum label rate (and their minimum water label rate) when plant cane is at 4 to 6 leaf stage.

In the pot trials, weekly phytotoxicity ratings are conducted using the EWRC (European Weed Research Council) rating scale (Table 1) and the aerial plant dry biomass is measured 10 weeks after spraying.

In the field trials, plant cane yield is measured at harvest using a weigh truck.

In all trials, KQ228[®] is assessed and used as a reference susceptible variety to compare to other tested varieties.

Tables 2 and 3 summarise all phytotoxicity, biomass and yield results obtained in the pot and field trials from 2014 to 2020. These tables will be updated yearly to include newly tested combinations of varieties by herbicides.

TABLE 1 EWRC selectivity rating scale

NOTE	SYMPTOMS SEVERITY
1	No effect
2	Very slight effects. Some stunting and yellowing just visible
3	Slight effects. Stunting and yellowing obvious, effects reversible
4	Substantial chlorosis and or stunting, most effects probably reversible.
5	Strong chlorosis/stunting, thinning of stand. (50 % loss)
6	Increasing severity of damage (70 % loss)
7	Increasing severity of damage (85 % loss)
8	Increasing severity of damage (90% loss) a few plants survive
9	Total loss of plants and yield

TABLE 2 Summary of phytotoxicity ratings and symptoms obtained on the reference susceptible variety KQ228[®]

	2,4-D	2,4-D+ IOXYNIL	AMETRYN	AMETRYN+ TRIFLOXY SULFURON	AMICARBAZONE	ASULAM	DIURON	FLUMIOXAZIN	METOLACHLOR	METRIBUZIN	MSMA
SYMPTOM DESCRIPTION	Small white spotty discolorations	Small yellow spotty discolorations	Yellowing of the whole plant	Slight yellow blotching	Small white spotty discolorations	Bright yellow blotching	Slight yellowing of the whole plant	Large necrotic lesions	Small necrotic lesions	Slight yellowing of the whole plant	Large necrotic lesions
SYMPTOMS PICTURE		NA									
SYMPTOMS SEVERITY ON KQ228 [®]	Mild	Mild	Medium to severe	Mild	Mild	Medium	Mild	Severe	Medium	Mild	Medium to severe
KQ228 [®] PHYTO RATING RANGE	1.2 to 1.9	1.2	1.8 to 3.2	1.3	1.3 to 1.5	1.1 to 2.6	1.8	3.9 to 4.1	1.1 to 2.8	1.2 to 1.8	1.7 to 3.5
NUMBER OF TRIALS	5	1	4	1	3	5	1	2	5	5	5

■ MILD
■ MEDIUM
■ SEVERE

Table 3 presents the herbicide symptoms severity on the cane foliage on all tested varieties in a green to red scale (mild to severe symptoms due to the herbicide treatment compared to the untreated control). Table 3 also presents the cane dry biomass measured 10 weeks after spraying compared to the biomass of the untreated variety in a light to dark grey scale (slight to severe biomass reduction due to the herbicide treatment compared to the untreated control). Yield data from the field trials were also added to Table 3 and the combinations of varieties by herbicide that were tested in the field are marked with the symbols ☆ or △. Cells with ☆ indicate varieties whose

yield was reduced by less than 10% compared to the untreated control. Cells with △ indicates varieties whose yield was reduced by more than 10% compared to the untreated control (no yield loss was statistically significantly different to the untreated control at P 0.05).

Phytotoxicity symptoms and yield loss observed on-farm may vary from those reported here, as severity of symptoms, biomass and yield can vary depending on local environmental conditions (temperature, humidity, soil moisture), the condition of the crop (actively growing or stressed) and the weather conditions at the time of application, as was seen in

KQ228^φ's response to metolachlor ranging from mild to severe depending on the year and season it was trialled. Additionally, while visual symptoms might be seen in a range of varieties trialled, in most cases no yield loss is expected if the correct label rates are followed. However, a minor yield loss might be expected in a variety such as SRA4^φ when applying either MSMA or asulam. The newer SRA11^φ variety is being evaluated in the 2019-20 phytotoxicity field trial to assess whether the biomass reductions observed in pot trials could translate into yield loss under field conditions.

TABLE 3 Phytotoxicity rating, biomass and yield difference compared to the untreated control of the same variety

VARIETY	2,4-D		2,4-D+ IOXYONIL		AMETRYN		AMETRYN+ TRIFLOXY-SULFURON		AMI-CARBAZONE		ASULAM		DIURON		FLUMI-OXAZIN		METOLA-CHLOR		METRIBUZIN		MSMA	
	PHYTOTOXICITY	BIOMASS/YIELD	PHYTOTOXICITY	BIOMASS/YIELD	PHYTOTOXICITY	BIOMASS/YIELD	PHYTOTOXICITY	BIOMASS/YIELD	PHYTOTOXICITY	BIOMASS/YIELD	PHYTOTOXICITY	BIOMASS/YIELD	PHYTOTOXICITY	BIOMASS/YIELD	PHYTOTOXICITY	BIOMASS/YIELD	PHYTOTOXICITY	BIOMASS/YIELD	PHYTOTOXICITY	BIOMASS/YIELD	PHYTOTOXICITY	BIOMASS/YIELD
KQ228 ^φ	Green	Light Grey	Green	Light Grey	Orange	Dark Grey	Yellow	Light Grey	Green	Light Grey	Yellow	Light Grey	Yellow	Light Grey	Orange	Dark Grey	Green	Light Grey	Yellow	Light Grey	Orange	Dark Grey
Q208 ^φ	Green	Light Grey	Green	Light Grey	Diagonal	Diagonal	Yellow	Light Grey	Diagonal	Diagonal	Green	Light Grey	Diagonal	Diagonal	Diagonal	Diagonal	Orange	Light Grey	Yellow	Light Grey	Orange	Dark Grey
Q232 ^φ	Green	Light Grey	Green	Light Grey	Diagonal	Diagonal	Yellow	Light Grey	☆	Diagonal	Green	Light Grey	Diagonal	Diagonal	Diagonal	Diagonal	Orange	Light Grey	☆	Light Grey	☆	Light Grey
Q238 ^φ	Green	Light Grey	Green	Light Grey	Diagonal	Diagonal	Yellow	Light Grey	△	Diagonal	Green	Light Grey	Diagonal	Diagonal	Diagonal	Diagonal	Orange	Light Grey	☆	Light Grey	△	Light Grey
Q240 ^φ	Green	Light Grey	Green	Light Grey	Diagonal	Diagonal	Yellow	Light Grey	Diagonal	Diagonal	Green	Light Grey	Diagonal	Diagonal	Diagonal	Diagonal	Orange	Light Grey	☆	Light Grey	Orange	Dark Grey
Q242 ^φ	Green	Light Grey	Green	Light Grey	Diagonal	Diagonal	Yellow	Light Grey	☆	Diagonal	Green	Light Grey	Diagonal	Diagonal	Diagonal	Diagonal	Orange	Light Grey	☆	Light Grey	☆	Light Grey
Q249 ^φ	Green	Light Grey	Green	Light Grey	Diagonal	Diagonal	Yellow	Light Grey	Diagonal	Diagonal	Green	Light Grey	Diagonal	Diagonal	Diagonal	Diagonal	Orange	Light Grey	☆	Light Grey	☆	Light Grey
Q252 ^φ	Green	Light Grey	Green	Light Grey	Diagonal	Diagonal	Yellow	Light Grey	Diagonal	Diagonal	Green	Light Grey	Diagonal	Diagonal	Diagonal	Diagonal	Orange	Light Grey	☆	Light Grey	☆	Light Grey
SRA1 ^φ	Green	Light Grey	Diagonal	Diagonal	Yellow	Light Grey	Diagonal	Diagonal	Diagonal	Diagonal	Orange	Light Grey	☆	Diagonal	Diagonal	Diagonal	Green	Light Grey	Diagonal	Diagonal	Diagonal	Light Grey
SRA2 ^φ	Green	Light Grey	Diagonal	Diagonal	Yellow	Light Grey	Diagonal	Diagonal	Diagonal	Diagonal	Orange	Light Grey	☆	Diagonal	Diagonal	Diagonal	Green	Light Grey	Diagonal	Diagonal	Diagonal	Light Grey
SRA4 ^φ	Green	Light Grey	Diagonal	Diagonal	Yellow	Light Grey	Diagonal	Diagonal	Diagonal	Diagonal	Orange	Light Grey	△	Diagonal	Diagonal	Diagonal	Green	Light Grey	Diagonal	Diagonal	Diagonal	Light Grey
SRA11 ^φ	Green	Light Grey	Diagonal	Diagonal	Yellow	Light Grey	Diagonal	Diagonal	Diagonal	Diagonal	Orange	Light Grey	Diagonal	Diagonal	Diagonal	Diagonal	Green	Light Grey	Diagonal	Diagonal	Diagonal	Light Grey
SRA19 ^φ	Green	Light Grey	Diagonal	Diagonal	Orange	Dark Grey	Diagonal	Diagonal	Diagonal	Diagonal	Green	Light Grey	Diagonal	Diagonal	Diagonal	Diagonal	Green	Light Grey	Diagonal	Diagonal	Diagonal	Light Grey

- NO SYMPTOMS TO MILD PHYTOTOXICITY SYMPTOMS ON FOLIAGE
- MILD PHYTOTOXICITY SYMPTOMS ON FOLIAGE
- MODERATE PHYTOTOXICITY SYMPTOMS ON FOLIAGE
- SEVERE PHYTOTOXICITY SYMPTOMS ON FOLIAGE
- ▨ COMBINATION OF HERBICIDE BY VARIETY NOT TESTED

- NO BIOMASS REDUCTION COMPARED TO UNTREATED
- SLIGHT BIOMASS REDUCTION COMPARED TO UNTREATED
- MODERATE BIOMASS REDUCTION COMPARED TO UNTREATED
- SEVERE BIOMASS REDUCTION COMPARED TO UNTREATED
- ☆ COMBINATION OF HERBICIDE BY VARIETY TESTED IN FIELD TRIALS < 10% COMPARED TO UNTREATED
- △ COMBINATION OF HERBICIDE BY VARIETY TESTED IN FIELD TRIALS > 10% COMPARED TO UNTREATED

For more information contact:
 Senior Researcher
 Emilie Fillols
 T 07 4056 4510



VARIETY ADOPTION IN EACH MILL AREA

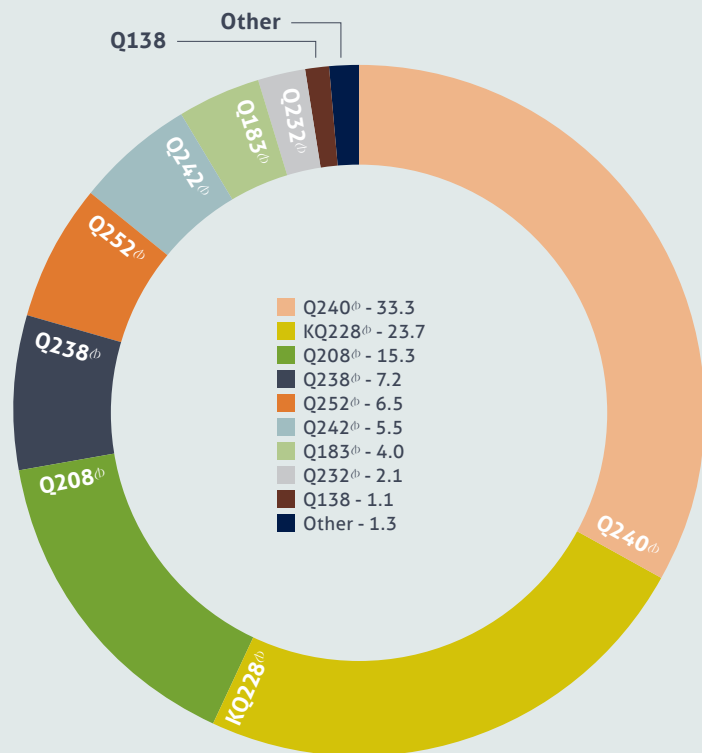
Data below can be found in QCANESelect® under the regional reporting tab. Use this information to assess yield performance of varieties over a number of years. Caution should be taken when comparing commercial performance of newer varieties (from plant and young ratoons) to older/established varieties (which include older ratoons).

Bundaberg (% TONNES 2019)

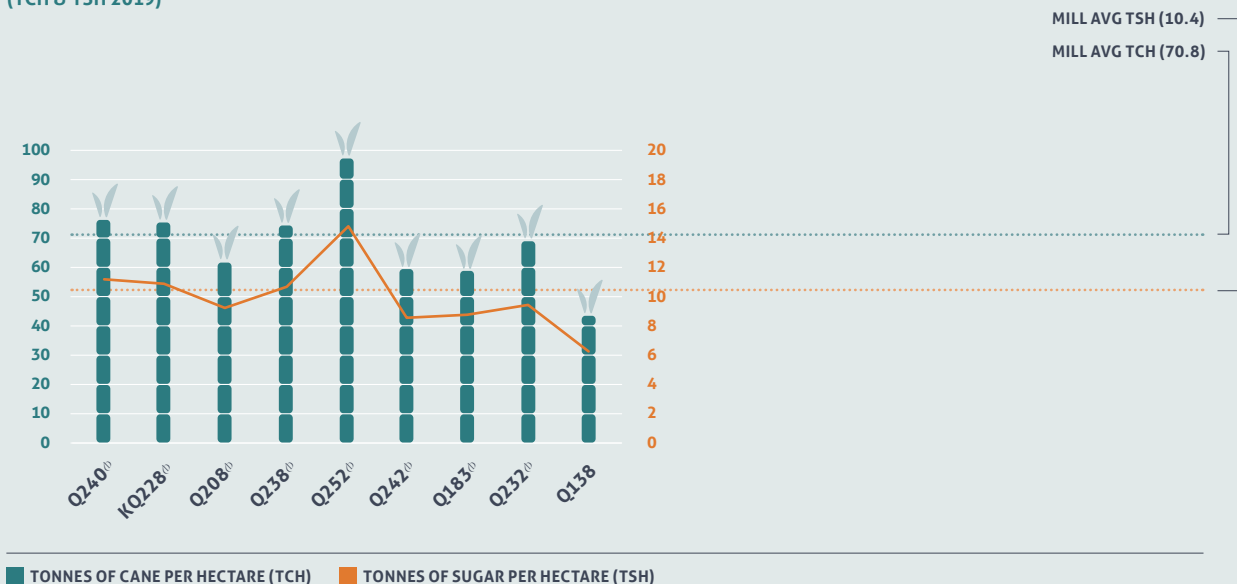
In 2019, a total of 1,095,130 tonnes of cane was harvested from 15,461 hectares in the Bundaberg region. The Bundaberg Mill area had an average yield of 70.8 tonnes of cane per hectare and an average CCS of 14.62.

Q240th accounts for the majority of production in the Bundaberg region, increasing from 29% in 2018 to 33% in 2019. KQ228th slightly decreased from 25% to 24% of production between 2018 and 2019. Q208th, Q242th and Q232th declined slightly to 15%, 5% and 2% respectively.

Q183th, Q208th, Q240th and Q252th performed at or above mill average for CCS in 2019.



(TCH & TSH 2019)

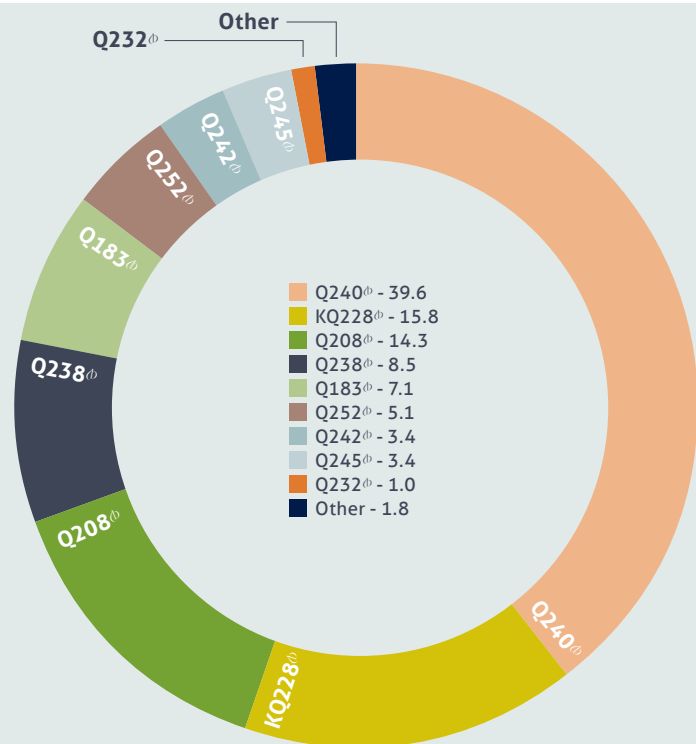


Isis (% TONNES 2019)

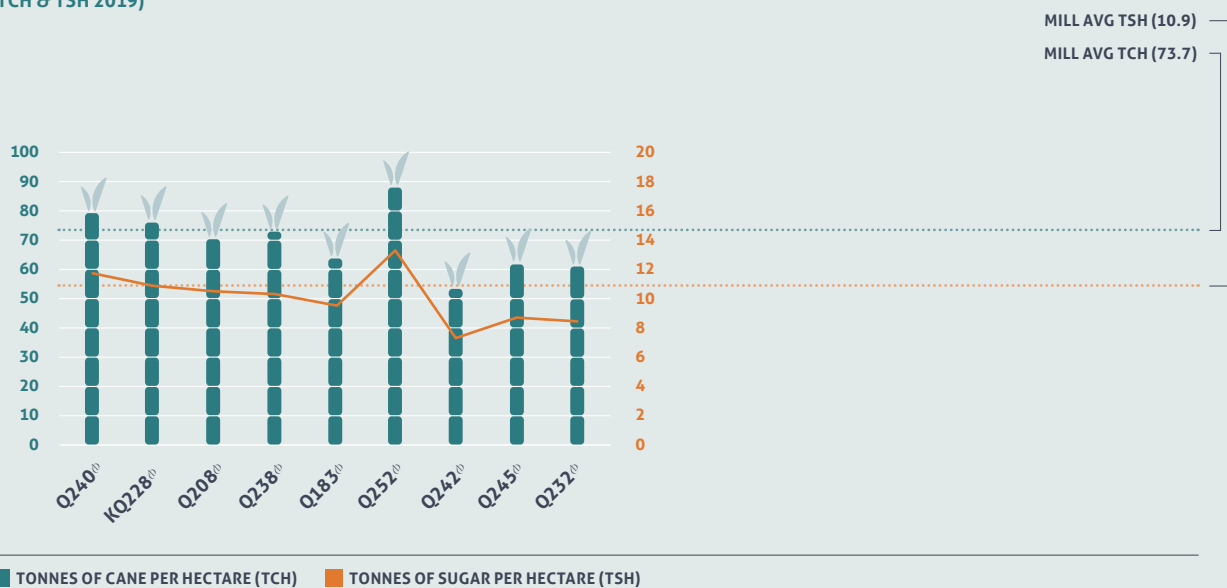
In 2019, a total of 971,582 tonnes of cane was harvested from 13,184 hectares in the Isis region. The Isis mill area had an average yield of 73.7 tonnes of cane per hectare and an average CCS of 14.76.

Q240^φ accounts for the majority of production in the Isis region, increasing from 37% in 2018 to 40% in 2019. KQ228^φ, Q208^φ, and Q183^φ all declined to 16%, 14%, and 7% respectively.

Q183^φ, Q208^φ, Q240^φ and Q252^φ performed at or above mill average for CCS in 2019.



(TCH & TSH 2019)



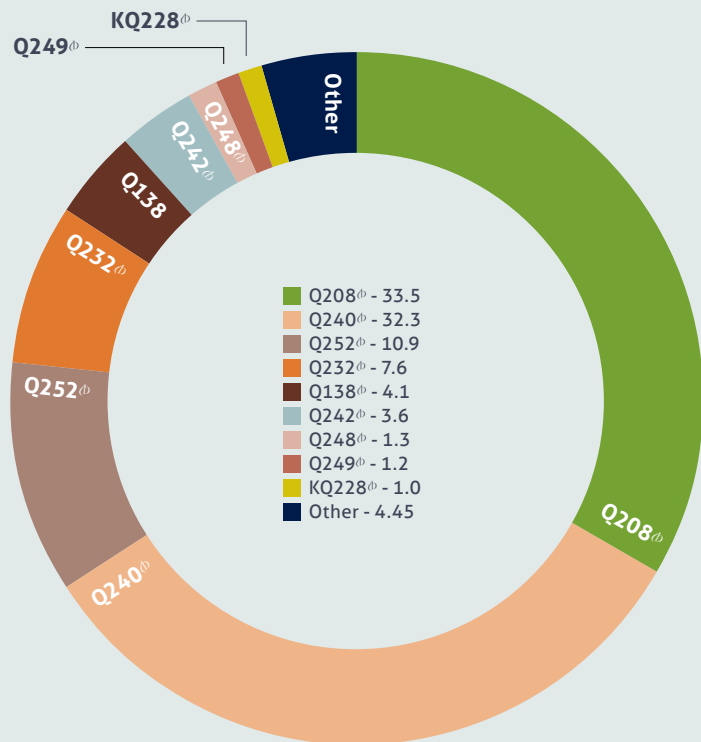


Maryborough (% TONNES 2019)

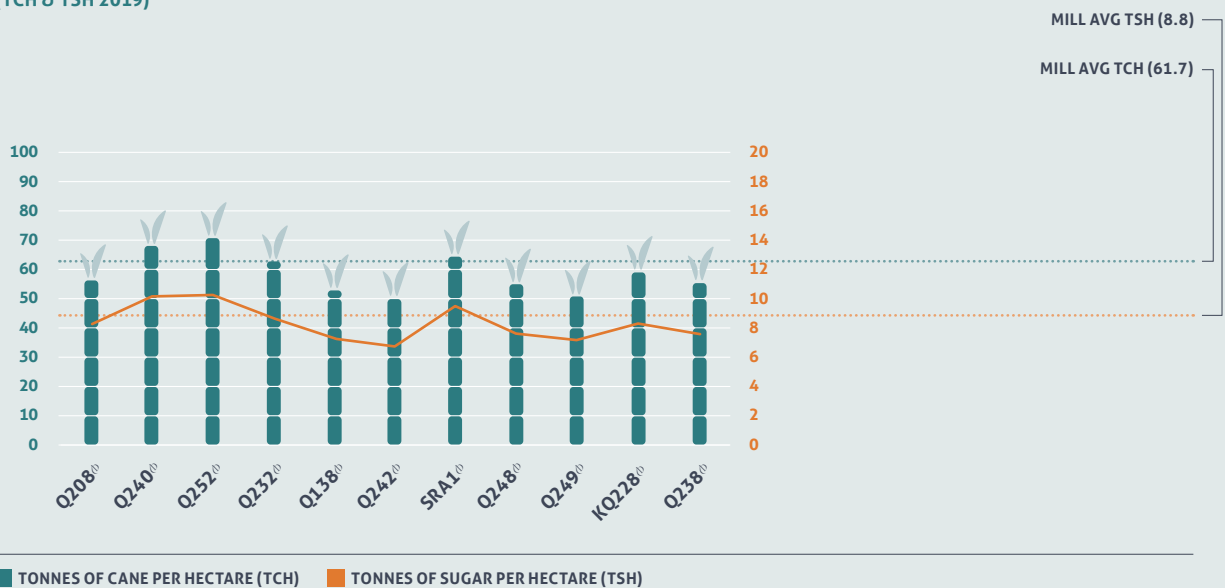
In 2019, a total of 592,216 tonnes of cane was harvested from 9,603 hectares in the Maryborough region. The Maryborough Mill area had an average yield of 61.7 tonnes of cane per hectare and an average CCS of 14.32.

Q208[Ⓛ] accounts for the majority of production in the region but declined slightly from 40% of the total harvest in 2018 to 33% in 2019. Q240[Ⓛ] increased from 28% in 2018 to 32% in 2019.

Q208[Ⓛ], Q240[Ⓛ], Q252[Ⓛ] and SRA1[Ⓛ] performed at or above mill average for CCS in 2019.



(TCH & TSH 2019)



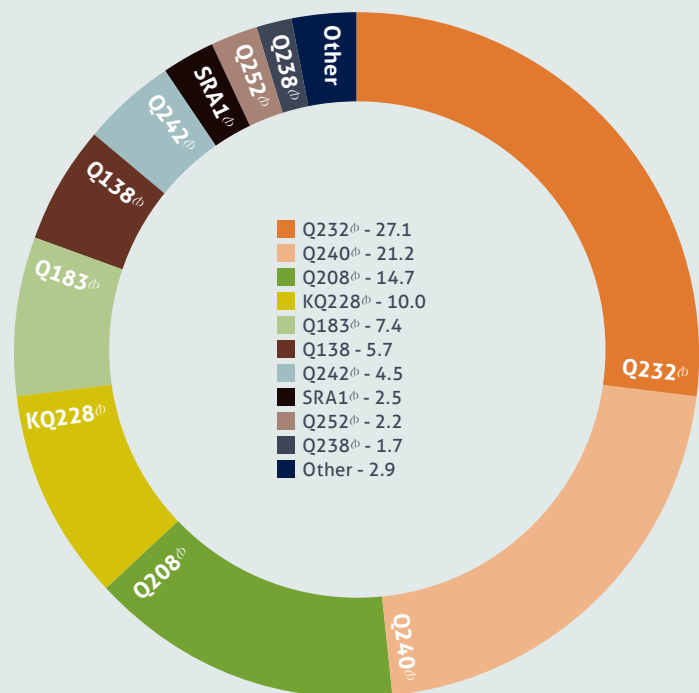
For more information please visit:
sugarresearch.com.au

Rocky Point (% TONNES 2019)

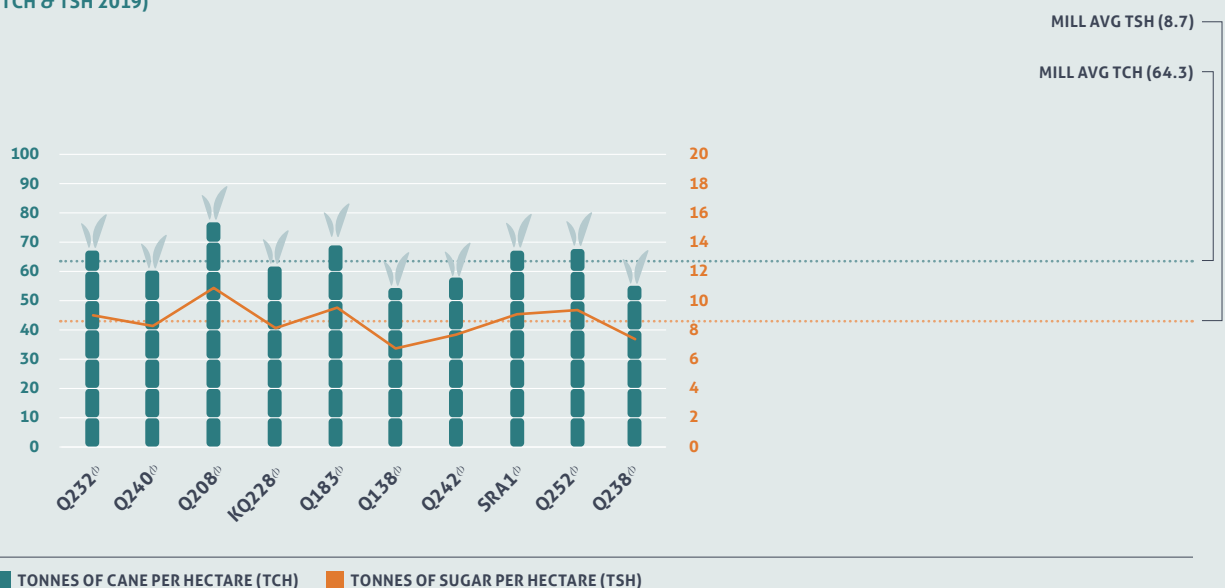
In 2019, a total of 193,897 tonnes of cane was harvested from 3,017 hectares in the Rocky Point region. The Rocky Point Mill had an average yield of 64.3 tonnes of cane per hectare and an average CCS of 13.58.

Q232^{ph} remains the most dominant variety in 2019, accounting for 27% of the total harvest which is a decrease of 3% from the previous year. Q240^{ph} remained stable at 21% of the crop and Q208^{ph} increased slightly to 15% of production.

Q183^{ph}, Q208^{ph}, Q240^{ph} and Q252^{ph} performed at or above mill average for CCS in 2019.

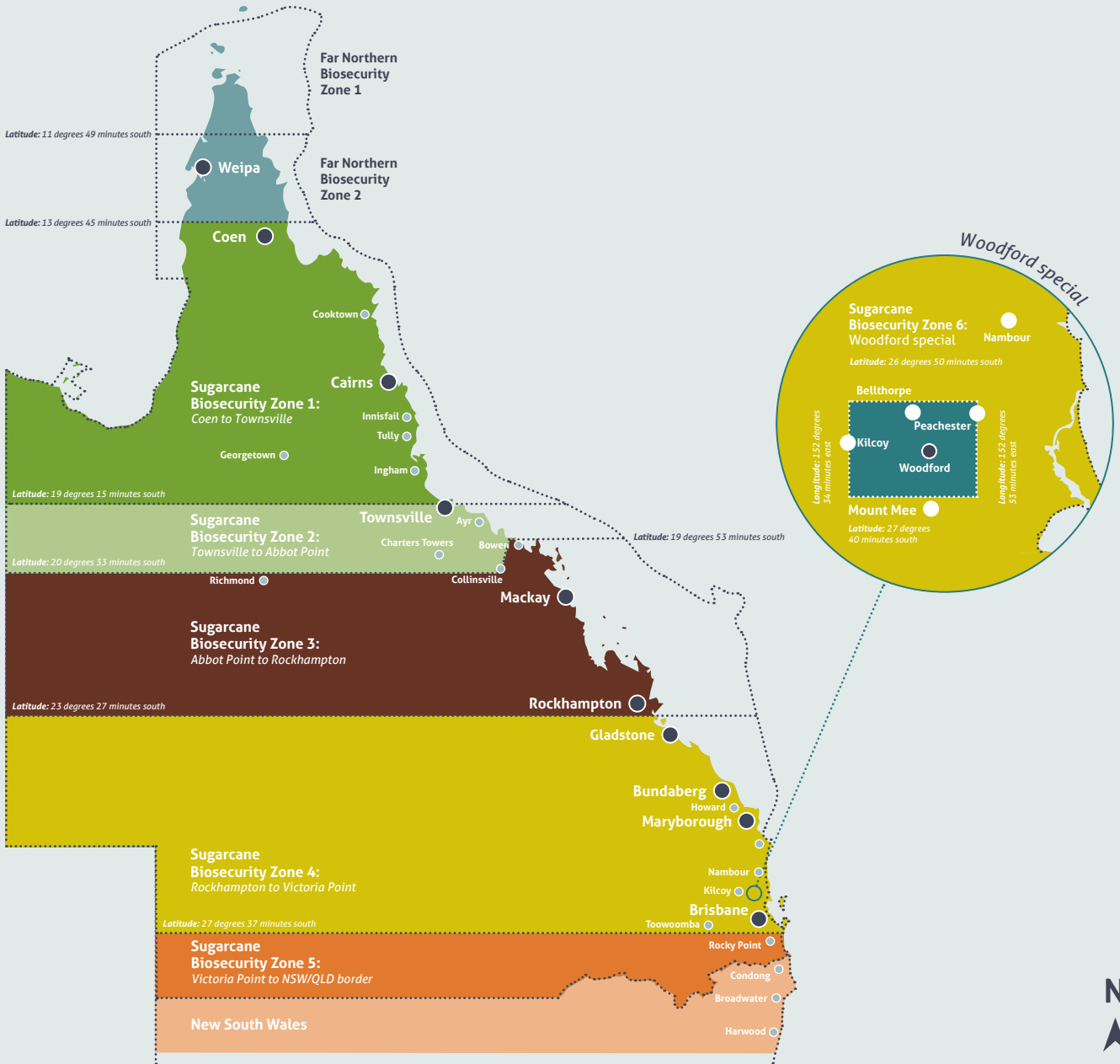


(TCH & TSH 2019)





SUGARCANE BIOSECURITY ZONE MAP



- All appliances (harvesters and other sugarcane machinery) moving between sugarcane biosecurity zones must:
 - > be free of cane trash and soil
 - > be inspected by an authorised inspection person who will issue a Plant Health Assurance Certificate (PHAC)
 - > be accompanied during transportation by the PHAC.
- Machinery moving from NSW to Qld requires a Plant Health Certificate issued by NSW Department of Primary Industries.
- Machinery inspections can be arranged by contacting the local Productivity Service organisation.
- To move sugarcane plants (stalks, leaves, potted plants, etc) between biosecurity zones contact Biosecurity Queensland (13 25 23).



PROPAGATING NEW VARIETIES

Contact your local productivity services group for regional advice on varieties. They can supply clean planting material of recommended varieties and place orders for tissue culture plantlets.



Isis Productivity Ltd:
T 07 4126 1444



MSF Sugar Limited:
M 0487 017 811



Sugar Services Bundaberg:
T 07 4151 2555



Rocky Point Productivity Services:
T 07 5546 1481

Billet planting



PLANT MATERIAL FROM AN APPROVED SEED SOURCE

Approved-seed provides cane growers with disease-free seed of varieties that are true-to-type. Disease-free seed (stalks, billets, setts or tissue culture plantlets used for planting) is a key control measure for systemic diseases of sugarcane, including chlorotic streak, Fiji leaf gall, leaf scald, mosaic, ratoon stunting disease (RSD) and smut. Provision of disease-free or approved-seed in each mill area in the Australian sugar industry is coordinated by SRA, in cooperation with the local productivity services group. SRA provides a disease-free supply of DNA fingerprinted new varieties. The local productivity services group multiplies the new varieties, maintaining the disease-free status and distributes the approved-seed to growers.



GROW SUGARCANE SPECIFICALLY FOR PLANTING MATERIAL

The block selected for growing plant material should be disease-free, weed-free and sugarcane volunteer-free. When selecting cane for planting material the cane should be less than one year old, erect and free from damage. Plan for two or more eyes per sett when harvesting for billets or stick planting. For non-irrigated regions plants should be well watered, have adequate nutrition immediately prior to harvest for billet planting. For irrigated regions you may need to reduce fertiliser rates, withhold irrigation or plant late in the season. The cane should also have originated from an approved seed plot and therefore be no more than three years away from long hot water treatment.

The best "whole farm" disease risk minimisation and productivity strategies can be achieved through consistent access to clean seed. It is highly recommended that cane considered for use as planting material be RSD tested well in advanced of harvest so an informed choice can be made prior to planting.



SET UP THE HARVESTER FOR CUTTING HIGH QUALITY SOUND BILLETS

Rubber coating rollers and optimising the roller speeds to chopper speed will produce good quality billets with minimal split or crushed ends and damaged eyes. Reduce the speed of harvesting and maintain sharp basecutter and chopper blades for clean cutting. Disinfect the machinery used to cut and plant new varieties to limit the spread of disease and weeds.

Tissue culture



CALCULATE HOW MUCH TISSUE CULTURE TO ORDER

We've made it easier with our online tissue culture calculator. It demonstrates the speed at which large quantities of planting material can be produced from a set number of plantlets or for a set cost. Below is a look-up table including common results from the calculator (available at sugarresearch.com.au/calculator).



TRY TISSUE CULTURE AS AN APPROVED CLEAN SEED SOURCE

Tissue culture is an excellent source of clean seed for all varieties and can help reduce the spread of serious diseases such as RSD, smut and Fiji leaf gall. Tissue-cultured plantings are more uniform and produce more sticks than conventional plantings so larger quantities of planting material are achieved the following year. This means earlier commercial-scale production of more productive new varieties can be achieved when using tissue culture.

STAGE	ORDER DEADLINE FOR SPRING PLANTING	ORDER DEADLINE FOR AUTUMN PLANTING
Grower finalises order. Productivity services group places order with SRA.	15 November	1 July
Productivity services group receives established plantlets from nursery and distributes to growers.	Delivery on agreed date between grower, productivity services group and nursery. Available in August.	Delivery on agreed date between grower, productivity services group and nursery. Available in March.

ESTIMATED COST AND TIME TO SCALE UP NEW VARIETY PRODUCTION USING TISSUE CULTURE					
Yr 1	No. plantlets ordered	100	250	500	1000
	Approximate cost	\$150	\$375	\$750	\$1500
	M row planted @ 0.8m	80	200	400	800
Yr 2	M row available for planting	2400	6000	12000	24000
	Ha avail for planting @ 1.8m	0.4	1.1	2.2	4.3

For more information on *tissue culture*, contact:

SRA Tissue Culture Manager Clair Bolton E cbolton@sugarresearch.com.au T 07 3331 3374

PLANTING AND MANAGING TISSUE-CULTURED PLANTLETS IN THE FIELD

Planting

- Prepare soil to a fine tilth to ensure good soil/root contact.
- A seedling planter can be used if one is available, although hand planting small numbers is not a huge job. Plant them deep at the bottom of a drill to prevent stool tipping.
- Fill in after early growth.
- Plant the plantlets 500 mm to 1 m apart. A good distance is 800 mm, which will allow tillering to produce a high number of sticks.

Irrigating

- Provision of water is the most critical factor for the successful establishment of tissue culture plantlets.
- Irrigate plantlets immediately after planting and monitor them to ensure they don't dry out over the first three weeks to get the roots well established.
- If you do not have access to flood or sprinkler irrigation a simple irrigation system can be set up using cheap drip tape and an in-line filter hooked up to your garden tap or water tanker.

Insects

- If you expect problems with insects then an application of an insecticide drench (such as chlorpyrifos or imidacloprid) at planting will protect the young plantlets.
- In canegrub-prone areas use your standard grub control treatment.

Fertiliser

- Fertiliser requirements of the tissue cultured plantlets are the same as for billet plantings.
- If possible, plant with a planter mix to maintain good early growth, and side-dress later to avoid fertiliser burn.

Weeds

Weed control is important for good establishment and growth.

- Ideally pre-irrigate the soil to germinate weeds, then apply a knock-down herbicide or cultivate just prior to planting to reduce the weed pressure on young plantlets.
- Allow at least one week after planting before applying pre-emergent herbicides, longer if planted into cold, wet soils, as the root system needs time to establish:
 - > Atradex® at 2.5 kg/ha plus Dual Gold® at 1.5 L/ha has been successfully applied over the top, for grass and broadleaf weed control.
 - > Do not use diuron as young plantlets are sensitive to this product.
- Sempra® at 100 g/ha plus Activator at 200 mL/100 L for nutgrass. Both applications were sprayed over the top for nutgrass control.
- Do not use paraquat unless you have no other option and only on established plantings.

QCANESelect®

- Using sugarcane varieties that are best-suited to your farm may help maximise productivity and profitability.
- To access QCANESelect® and the tissue culture calculator visit the SRA website sugarresearch.com.au
- Once you have identified the best varieties for planting on your farm, contact your local productivity services group to place orders for tissue-cultured plantlets.



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