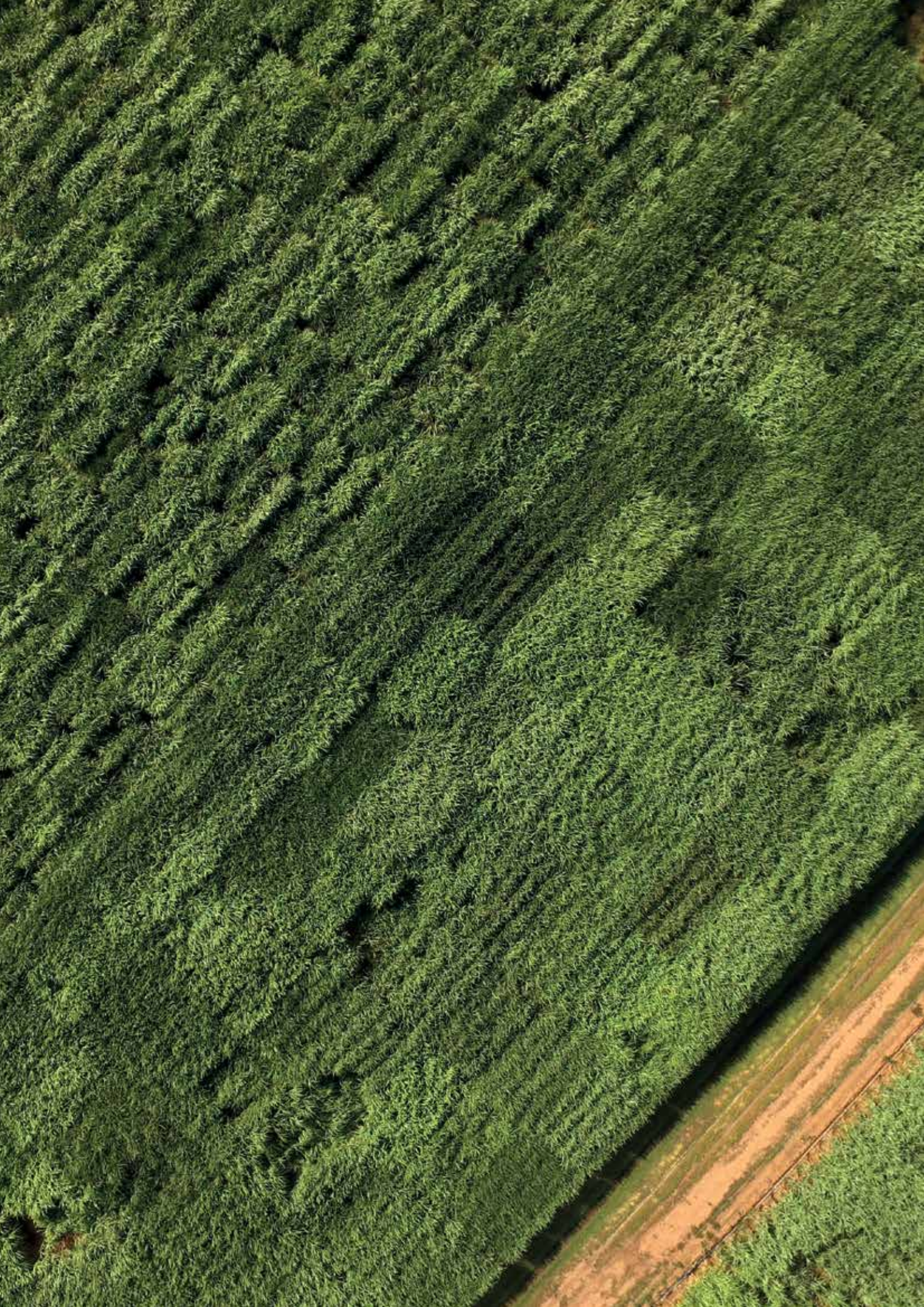
Sugar Research Australia

VARIETY GUIDE 2019/2020

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:***

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***

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NEW & RECENT VARIETIES AVAILABLE IN THE SOUTHERN REGION

New Variety Recommendation and Release Process

Regional Variety Committees (RVC) have replaced Variety Approval Committees (VAC) in line with changes to Queensland biosecurity legislation. With membership drawn from growers, millers and productivity service groups specific to the region, the RVCs will continue to be responsible for variety release decisions. SRA supports these groups with secretariat support and the provision of technical information to assist the committee making decisions on particular varieties.

RVCs are composed of voting and non-voting members to ensure transparency in the decision making process.

The Southern RVC (Sugarcane Biosecurity Zone 4 & 5) membership consists of 1 grower, 1 miller and 1 productivity services representative from each of the Bundaberg, Isis, Maryborough, and Rocky Point regions. 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: SRA11Φ QS05-6092		***Parentage:*** *QN86-2139 x QC90-289* ***/ Summary:*** *Higher tonnes cane, equal CCS*								
TRIAL HARVEST YEAR	**CROP CLASS**	**YIELD (TCH)**				**CCS**				**# OF HARVESTS**
		SRA11Φ	**Q208Φ**	**Q240Φ**	**KQ228Φ**	**SRA11Φ**	**Q208Φ**	**Q240Φ**	**KQ228Φ**	
(2011 Series FATs): 2012	Plant	116	91	109	102	15.8	15.7	15.7	15.8	4
2013	1R	116	101	116	105	16.8	17.1	17.2	17	4
2014	2R	115	108	121	111	16.0	16.2	16.1	16.1	4
2015	3R	120	115	125	117	17.8	18.0	17.5	17.7	3
2016	4R	129	115	136	118	18.6	18.7	18.0	18.4	1
(2014 repeated FATs): 2015	Plant	109	95	83	97	17.2	17.2	16.5	16.9	4
2016	1R	120	119	116	117	16.7	16.4	16.3	16.9	4
2017	2R	105	107	110	113	16.6	16.6	16.4	16.7	4
*(2016 series FOP FATs): 2017	Plant	74	66	68	81	15.1	16.3	15.8	14.9	1
Overall Performance		**114**	**104**	**110**	**108**	**16.7**	**16.7**	**16.5**	**16.7**	**29**
Available 2018										
Comments:		This variety came from the High Early Sugar program. Fast, reliable germination and good disease resistance. Resistant to Fiji leaf gall, Leaf Scald, Mosaic, Orange rust, Smut and Pachymetra.								

** Frost observation Gayndah trial*

Variety: SRA20Φ QS07-8815		***Parentage:*** *QN86-5279 x QS91-7008* ***/ Summary:*** *High tonnes cane, lower CCS.*								
TRIAL HARVEST YEAR	**CROP CLASS**	**YIELD (TCH)**				**CCS**				**# OF HARVESTS**
		SRA20Φ	**Q208Φ**	**Q240Φ**	**KQ228Φ**	**SRA20Φ**	**Q208Φ**	**Q240Φ**	**KQ228Φ**	
(2013 series FATs): 2014	Plant	80	68	68	68	13.4	14.2	14.5	14.2	4
2015	1R	96	86	89	87	12.6	17.0	17.1	17.1	4
2016	2R	102	91	100	95	13.3	17.2	17.0	17.3	4
2017	3R	93	95	93	93	13.2	15.3	14.9	15.1	2
(2015 repeated 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:		Reliable germination (not as Fast as SRA11Φ and SRA19Φ), good disease resistance. Resistant to Smut and Pachymetra, intermediate resistant to Fiji and Leaf Scald. Good fibre quality trends and good fibre content.								

Variety: SRA19ф QN02-1707		***Parentage:*** *QN86-640 x QN90-252* **/** ***Summary:*** *High tonnes cane, lower CCS.*								
TRIAL HARVEST YEAR	**CROP CLASS**	**YIELD (TCH)**				**CCS**				**# OF HARVESTS**
		SRA19ф	**Q208**ф	**Q240**ф	**KQ228**ф	**SRA19**ф	**Q208**ф	**Q240**ф	**KQ228**ф	
(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 repeated 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, Fiji and Floc. Good fibre quality trends and good fibre content.								

SRA11ф

SRA19ф

SRA20ф

For more information on *variety field trials* contact:

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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. White indicates unknown.

Southern Disease Ratings												
VARIETY	MILL AREA RECOMMENDED	FIJI LEAF GALL	MOSAIC	LEAF SCALD	SMUT	CHLOROTIC STREAK	ORANGE RUST	BROWN RUST	RSD	RED ROT	YELLOW SPOT	PACHYMETRA
SRA20Φ	BI, M, RP	I	R	I	R					R		R
SRA19Φ	BI, M, RP	I		R	I		R				I	R
SRA11Φ	BI, M, RP	R	R	R	R		R			I		R
SRA4Φ	BI, M, RP	R	R	R	I		R			R	I	I-R
SRA2Φ	BI, M, RP	R	I	R	I		I		S	R		R
SRA1Φ	BI, M, RP	I	R	R	R		R	R	S	I		I
Q252Φ	BI, M, RP	I	R	R	I		R		I-R	R	I	I
Q249Φ	BI, M, RP	R	I-R	R	R		R		S	I-R	R	I
Q247Φ	BI, M, RP	R	R	R	I		R		S	R	S	R
Q245Φ	BI, M, RP	R	R	R	R		R		I-S	S	R	R
Q242Φ	BI, M, RP	R	R	R	I	I	R		S	I-R	R	R
Q240Φ	BI, M, RP	I-S	R	R	R	I-R	R		I-R	R	I	I
Q238Φ	BI, M, RP	I-R	R	R	R	S	R	R	I	I-R	S	R
Q235Φ	BI, M	R	R	R	R	I-S	I-R		S	R	R	R
Q232Φ	BI, M, RP	I	R	R	R	R	R		I	I-R	R	I
KQ228Φ	BI, M, RP	I	R	R	I	S	R	R	S	R	I	I
Q212Φ	RP	I-R	R	R	R		R		I	R	S	R
Q208Φ	BI, M, RP	I-S	R	R	I-R	R	R	R	I-R	R	R	I
Q200Φ	BI	I	R	R	I	I	R	R	I-R	R	I-R	I
Q183Φ	BI, RP	R	R	I	I-R	S	R	R	I	I	I-S	R
Q155Φ	RP		I-S		I	I			S	S		S
Q151Φ	BI	R	R	R	R		R	R	S	I-R		I-S
Q138	BI, M, RP	R	I-S	R	S	I-R	R	R	S	I-S	I-S	R

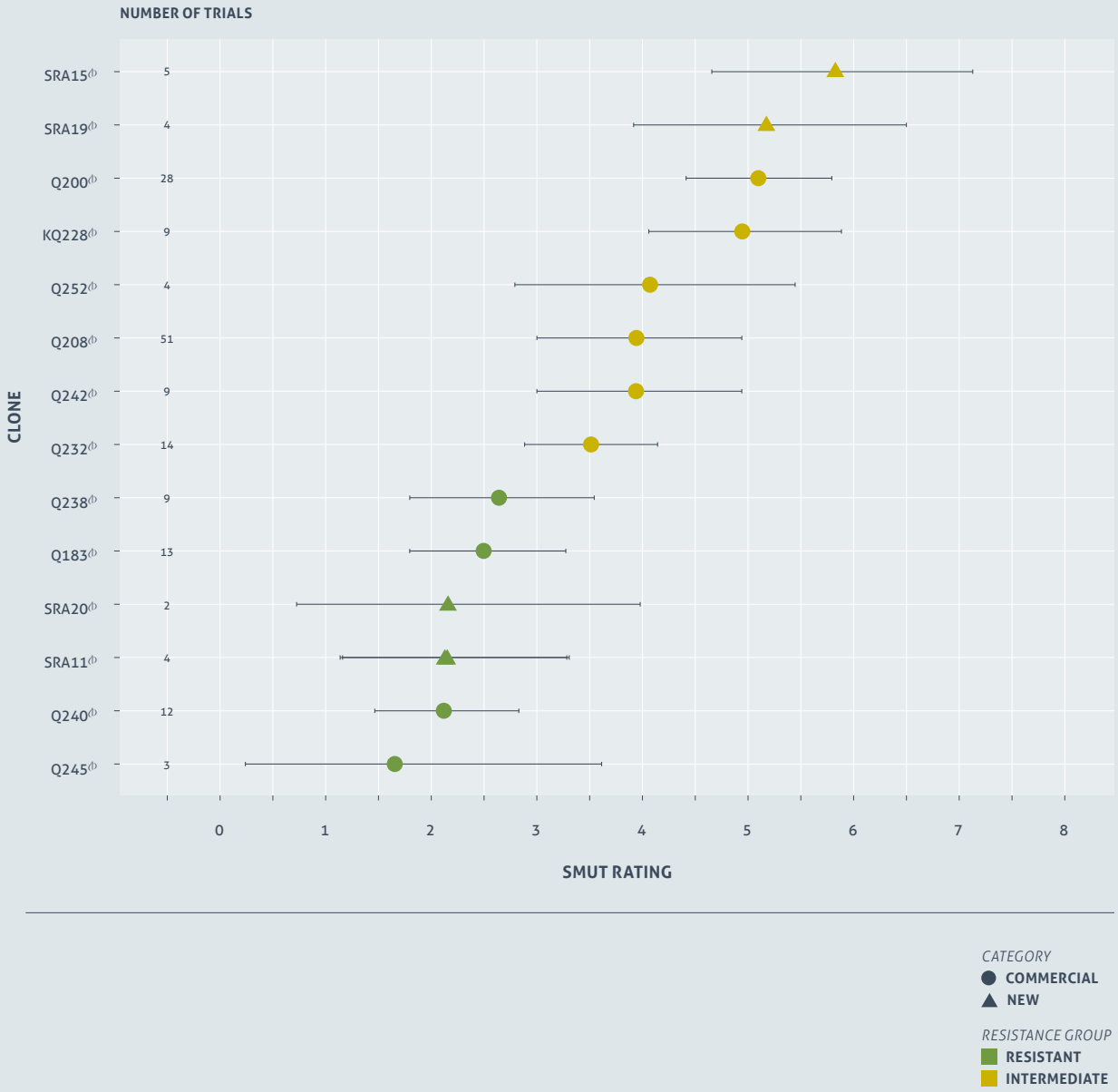
Rotation of varieties is important in the management of diseases. Arrange for your local productivity services officer to inspect your farm for disease. The Diseases of Australian Sugarcane Field Guide provides information on diseases including how to identify and manage them. The guide is available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

- RESISTANT (R)
- RESISTANT -INTERMEDIATE (I-R)
- INTERMEDIATE (I)
- INTERMEDIATE- SUSCEPTIBLE (I-S)
- SUSCEPTIBLE (S)

BI BUNDABERG - ISIS
M MARYBOROUGH
RP ROCKY POINT

NEW PRESENTATION FORMAT FOR 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 Q200ϕ has been tested in 28 trials and has a narrow confidence interval from 4.5 to 5.5 while the new variety SRA20ϕ has only been tested in 2 trials and ranges from 0.75 to 4. 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 charts below indicate early, mid or late sugar varieties.

Bundaberg & Isis Harvest Management					
VARIETY	EARLY SUGAR	MID SUGAR	LATE SUGAR	TRASHING	LODGING
SRA20Φ	Average	Average	Average	Free-Average	Poor
SRA19Φ	Average	Average	Average	Average	Average
SRA11Φ	Average	Average	Average	Free	Average
SRA4Φ	Average	Average	Average	Average	Poor
SRA2Φ	Good	Good	Good	Free-Average	Average
SRA1Φ	Good	Good	Good	Average	Average
Q252Φ	Good	Good	Good	Free	Poor
Q249Φ	Average	Average	Good	Average	Average
Q247Φ	Poor	Poor	Poor	Tight	Good
Q245Φ	Poor	Average	Average	Average	Poor
Q242Φ	Average	Average	Poor	Average-Tight	Poor
Q240Φ	Good	Good	Good	Free-Average	Average
Q238Φ	Poor	Average	Average	Average	Average
Q235Φ	Good	Good	Average	Average	Average
Q232Φ	Poor	Average	Poor	Tight	Average
KQ228Φ	Good	Good	Average	Average-Tight	Average
Q208Φ	Average	Good	Good	Free	Average
Q200Φ	Poor	Average	Good	Free	Average
Q183Φ	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.

- GOOD
- AVERAGE
- LOW
- POOR
- UNKNOWN

TRASHING

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

Rocky Point Harvest Management

VARIETY	EARLY SUGAR	MID SUGAR	LATE SUGAR	TRASHING	LODGING
SRA11Φ	Average	Average	Average	Unknown	Unknown
SRA4Φ	Average	Average	Average	Average	Unknown
SRA2Φ	Good	Good	Average	Free-Average	Average
SRA1Φ	Good	Good	Good	Average	Average
Q252Φ	Good	Good	Good	Free	Average
Q249Φ	Average	Average	Average	Average	Poor
Q245Φ	Poor	Average	Average	Average	Unknown
Q242Φ	Good	Good	Good	Average-Tight	Poor
Q240Φ	Good	Good	Good	Free-Average	Average
Q238Φ	Average	Good	Good	Average	Good
Q235Φ	Good	Good	Average	Unknown	Poor
Q232Φ	Poor	Average	Average	Tight	Unknown
KQ228Φ	Good	Good	Average	Average-Tight	Average
Q208Φ	Good	Good	Good	Free	Average
Q183Φ	Average	Good	Good	Free-Average	Average
Q155Φ	Good	Good	Good	Unknown	Unknown
Q138	Average	Average	Average	Tight	Unknown

Maryborough Harvest Management

VARIETY	EARLY SUGAR	MID SUGAR	LATE SUGAR	TRASHING	LODGING
SRA20Φ	Average	Average	Average	Free-Average	Average
SRA19Φ	Average	Average	Average	Average	Average
SRA20Φ	Average	Average	Average	Free-Average	Average
SRA11Φ	Average	Average	Average	Free	Good
SRA4Φ	Average	Average	Average	Average	Good
SRA2Φ	Good	Good	Good	Free-Average	Average
SRA1Φ	Good	Good	Good	Average	Average
Q252Φ	Good	Good	Average	Free	Average
Q249Φ	Average	Average	Good	Average	Poor
Q242Φ	Average	Average	Average	Average-Tight	Poor
Q240Φ	Good	Good	Good	Free-Average	Average
Q238Φ	Poor	Average	Average	Average	Good
Q235Φ	Good	Good	Average	Average	Poor
Q232Φ	Poor	Average	Average	Tight	Average
KQ228Φ	Good	Good	Average	Average-Tight	Average
Q208Φ	Average	Good	Good	Free	Average
Q138	Average	Average	Average	Average	Good

VARIETY BY HERBICIDE SCREENING TRIALS

Sugarcane varieties can have sensitive responses to herbicides with some being more impacted than others. Data outlining susceptibility can be important to optimise productivity outcomes.

Since 2014, SRA has conducted 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 one to shortlist the most susceptible combinations of varieties and herbicides.
- a fully randomised replicated field trial in year two to confirm that the shortlisted combinations have an impact on yield.

In year three, the process stars 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 four to six leaf stage. Weekly phytotoxicity ratings are conducted in the pot trials using the EWRC (European Weed Research Council) rating scale and the aerial plant dry biomass is measured 10 weeks after spraying. Field trials are conducted on plant cane and yield is measured at harvest using a weigh truck. In all trials, KQ228(!) is used as a reference variety.

A range of factors including environmental conditions and plant health status strongly influence herbicide efficacy on target weeds and sugarcane. The screening trials are intended to identify varieties with sensitivity to particular herbicides, and do not predict the outcome in all situations.

For more information contact:
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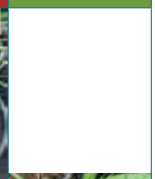
TABLE 1 Summary of phytotoxicity ratings and symptoms obtained on the reference variety KQ228(!)

	2,4-D	METRIBUZIN	AMETRYN+ TRIFLOXY SULFURON	ASULAM	MSMA	2,4-D + IOXYNIL	METOLACHLOR	AMETRYN	FLUMIOXAZIN	AMICARBAZONE
SYMPTOM DESCRIPTION	small white spotty discolorations	slight yellowing of the whole plant	slight yellow blotching	bright yellow blotching	large necrotic lesions	small yellow spotty discolorations	small necrotic lesions	yellowing of the whole plant	large necrotic lesions	small white spotty discolorations
SYMPTOM PICTURE						NA				
SYMPTOM SEVERITY ON KQ228(!)	mild	mild	mild	medium	medium to severe	mild	medium	medium	severe	mild
KQ228(!) PHYTO RATING RANGE	1.2 to 1.7	1.2 to 1.8	1.3	1.2 to 2.6	1.7 to 3.5	1.2	1.4 to 2.8	1.8 to 2.7	3.9 to 4.1	1.4 to 1.5
NUMBER OF TRIALS	4	4	1	4	4	1	4	3	2	2

MILD
MEDIUM
MEDIUM TO SEVERE
SEVERE

Herbicide toxicity symptoms for all tested varieties are compared to KQ228$^{\phi}$ in Table 2. Green cells indicate varieties that display less severe symptoms than KQ228$^{\phi}$. White cells indicate varieties with similar symptoms to KQ228$^{\phi}$ and red cells indicate varieties that display more severe symptoms than KQ228$^{\phi}$.

- SYMPTOMS LESS SEVERE THAN KQ228$^{\phi}$
- SYMPTOMS SLIGHTLY LESS SEVERE THAN KQ228$^{\phi}$
- SYMPTOMS SLIGHTLY MORE SEVERE THAN KQ228$^{\phi}$
- SYMPTOMS MORE SEVERE THAN KQ228$^{\phi}$
- -- COMBINATION OF HERBICIDE BY VARIETY NOT TESTED

TABLE 2 Visual symptoms of herbicide toxicity compared to KQ228$^{\phi}$.
This table indicates if varieties display more or less phytotoxicity symptoms than KQ228$^{\phi}$

KQ228$^{\phi}$ COMPARED TO:	2,4-D	METRIBUZIN	AMETRYN+ TRIFLOXY SULFURON	ASULAM	MSMA	2,4-D + IOXYNIL	METOLACHLOR	AMETRYN	FLUMIOXAZIN	AMICARBAZONE
SRA1$^{\phi}$			--			--			--	--
SRA2$^{\phi}$			--			--			--	--
SRA4$^{\phi}$			--			--			--	--
SRA11$^{\phi}$			--			--				
Q208$^{\phi}$								--	--	--
Q232$^{\phi}$								--	--	--
Q238$^{\phi}$								--	--	--
Q240$^{\phi}$								--	--	--
Q242$^{\phi}$								--	--	--
Q249$^{\phi}$								--	--	--
Q252$^{\phi}$								--	--	--

Biomass reduction in pot trials and yield loss in field trials in response to herbicide application is shown in Table 3. Dry cane biomass was measured 10 weeks after spraying and was compared to the biomass of the untreated variety. Green cells indicate varieties whose biomass was not reduced by the herbicide. Red cells indicate varieties with reduced biomass due to the herbicide treatment compared to the untreated control. Cells with a star display the combinations of herbicide by variety tested in the field to date. The orange star indicates varieties with yield reduced by more than 10% compared to the untreated control (no yield loss was significantly different to the untreated control at p = 0.05).

- NO BIOMASS REDUCTION COMPARED TO UNTREATED
- NO SIGNIFICANT BIOMASS REDUCTION COMPARED TO UNTREATED
- SLIGHT BIOMASS REDUCTION COMPARED TO UNTREATED
- SIGNIFICANT BIOMASS REDUCTION COMPARED TO
- -- UNTREATED
- ★ COMBINATION OF HERBICIDE BY VARIETY NOT TESTED COMBINATION TESTED IN FIELD TRIAL WITH YIELD
- ★ LOSS < 10% COMPARED TO UNTREATED COMBINATION TESTED IN FIELD TRIAL WITH YIELD LOSS > 10% COMPARED TO UNTREATED

TABLE 3 Biomass and yield difference compared to the untreated control of the same variety

	2,4-D	METRIBUZIN	AMETRYN+ TRIFLOXY SULFURON	ASULAM	MSMA	2,4-D + IOXYNIL	METOLACHLOR	AMETRYN	FLUMIOXAZIN	AMICARBAZONE
SRA1$^{\phi}$		★	--	★	★	--			--	--
SRA2$^{\phi}$		★	--	★	★	--			--	--
SRA4$^{\phi}$		★	--	★	★	--			--	--
SRA11$^{\phi}$			--			--				
Q208$^{\phi}$								--	--	--
Q232$^{\phi}$		★		★	★			--	--	--
Q238$^{\phi}$		★		★	★			--	--	--
Q240$^{\phi}$								--	--	--
Q242$^{\phi}$		★		★	★			--	--	--
Q249$^{\phi}$								--	--	--
Q252$^{\phi}$								--	--	--
KQ228$^{\phi}$ biomass reduction range	0-49%	13-60% ★	40%	0-48% ★	9-56% ★	12%	0-35%	38-80%	37-55%	0-36%
Number of trials where KQ228$^{\phi}$ was tested	4	4	1	4	4	1	4	3	2	2

Some herbicides should only be applied as a directed spray – always consult the chemical label.

VARIETY ADOPTION IN EACH MILL AREA

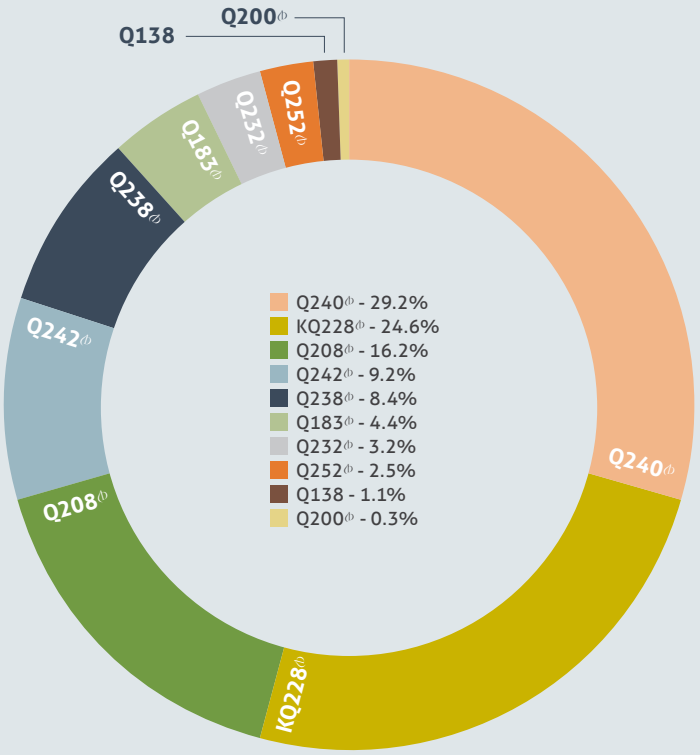
**Data below can be found in QCANESelect® under the regional reporting tab.
Use this information to assess yield performance of varieties over a number of years.
Caution should be taken when comparing commercial performance of newer varieties (from plant and young ratoons) to older/established varieties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

Bundaberg (% TONNES 2018)

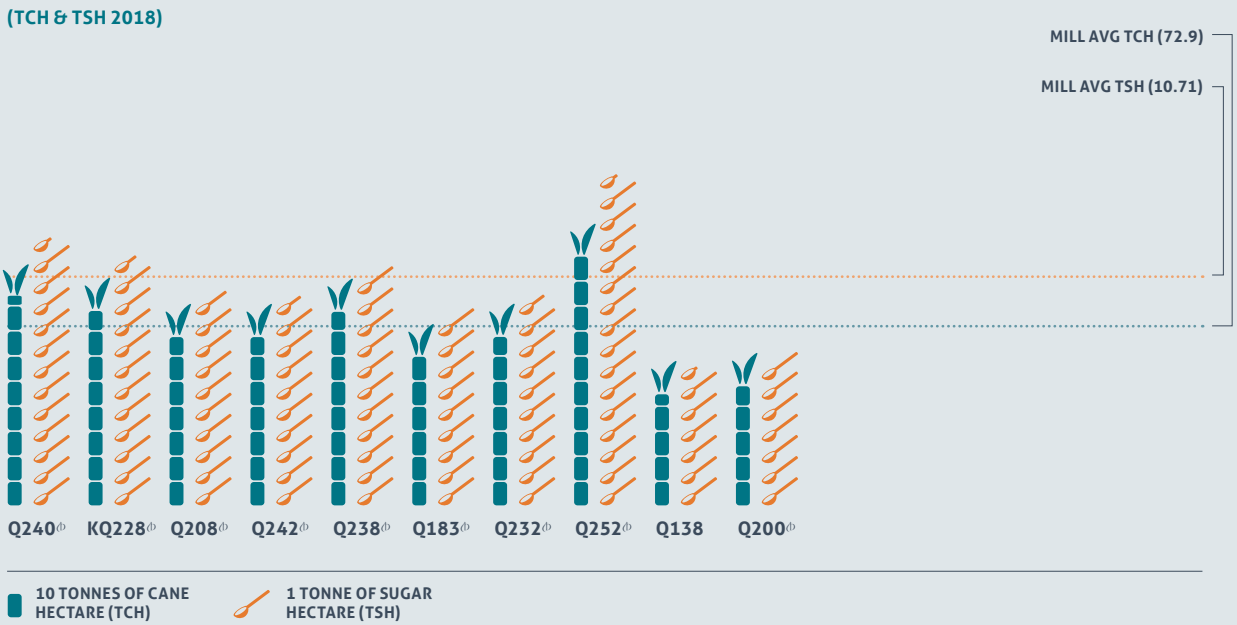
In 2018 a total of 1,315,907 tonnes of cane was harvested from 18,023 hectares in the Bundaberg region. The Bundaberg Mill area had an average yield of 72.9 tonnes of cane per hectare (TCH) and an average CCS of 14.80.

Q240Φ accounts for the majority of production in the Bundaberg region, increasing from 24% in 2017 to 29% in 2018. KQ228Φ slightly increased from 23.3% to 25% of production between 2017 and 2018. Q208Φ, Q242Φ and Q232Φ declined slightly to 16%, 9% and 3% respectively.

Q240Φ, Q208Φ, Q183Φ, Q252Φ all performed at or above mill average for CCS in 2018.



(TCH & TSH 2018)

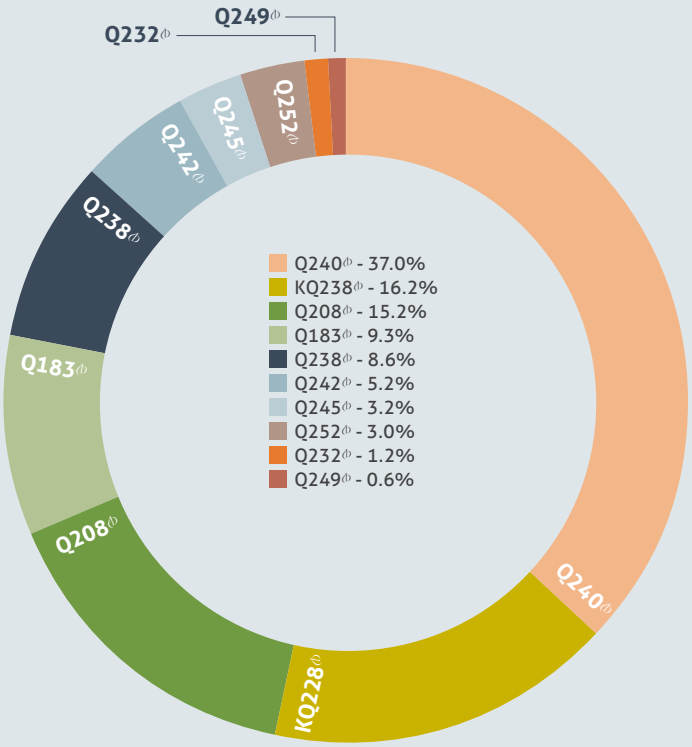


Isis (% TONNES 2018)

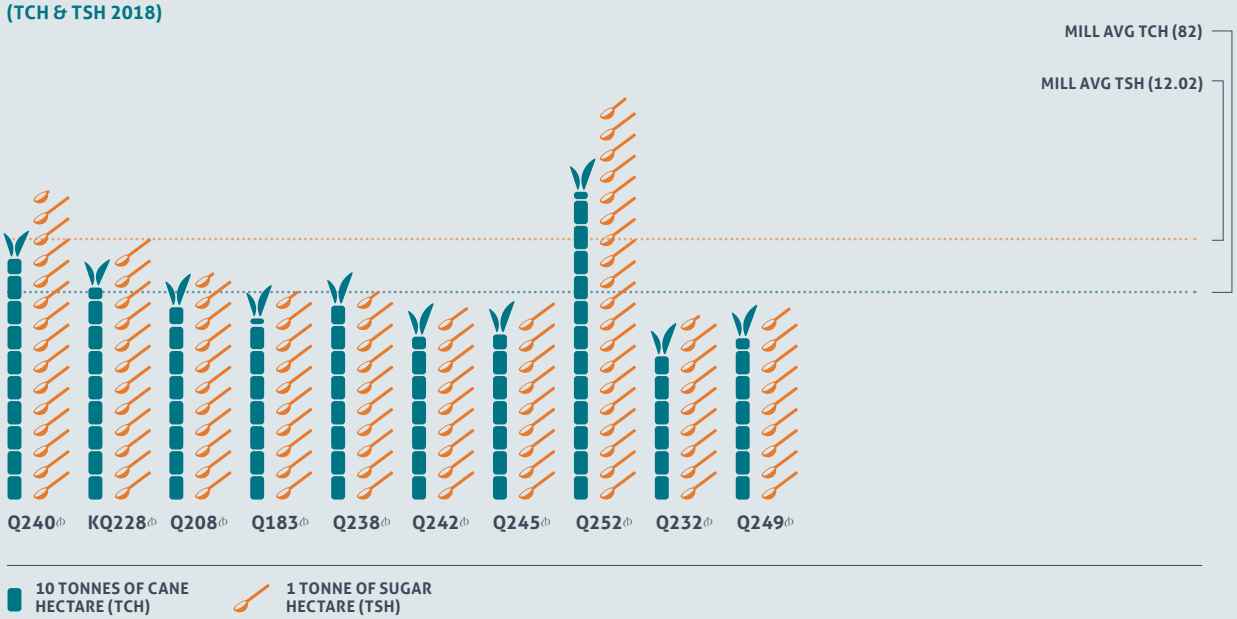
In 2018 a total of 1,202,300 tonnes of cane was harvested from 14,657 hectares in the Isis region. The Isis Mill area had an average yield of 82 tonnes of cane per hectare (TCH) and an average CCS of 14.65.

Q240Φ has increased to from 30.7% in 2017 to 37% of the total tonnes harvested in the Isis region in 2018. KQ228Φ, Q208Φ, and Q183Φ all declined to 17%, 15%, and 9% respectively.

Q240Φ, Q208Φ, Q252Φ, and Q183Φ all performed at or above mill average for CCS in 2018.



(TCH & TSH 2018)

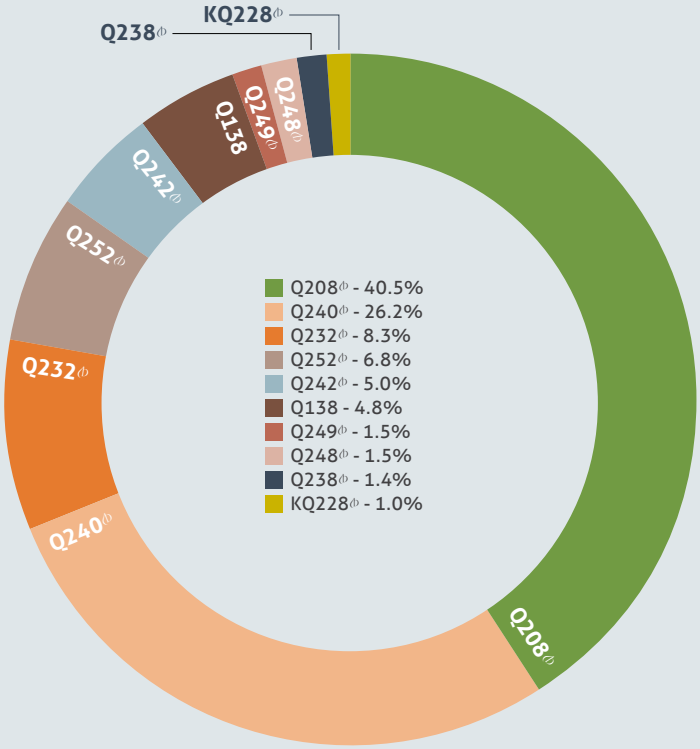


Maryborough (% TONNES 2018)

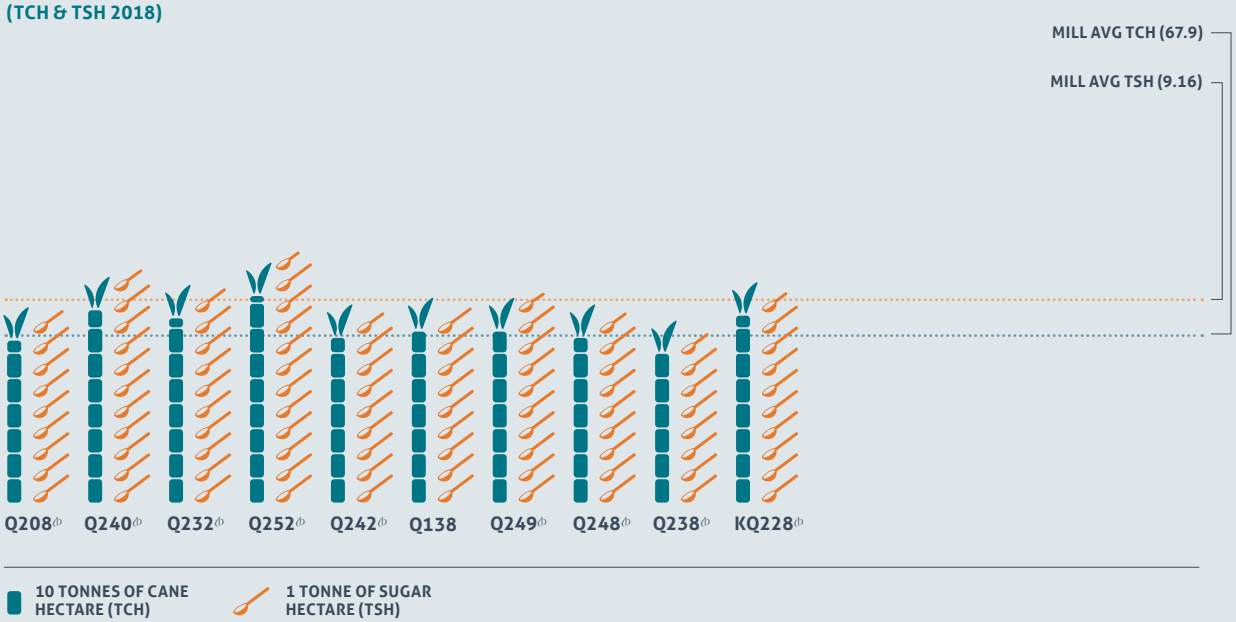
In 2018 a total of 795,353 tonnes of cane was harvested from 11,708 hectares in the Maryborough region. The Maryborough Mill area had an average yield of 67.9 tonnes of cane per hectare (TCH) and an average CCS of 13.49.

Q208Φ accounts for the majority of production in the region but declined slightly from 42.8% of the total harvest in 2017 to 40% in 2018. Q240Φ also increased very slightly from 26.2% to 28% in 2018.

Both Q240Φ and Q252Φ performed above mill average for CCS in 2018.



(TCH & TSH 2018)



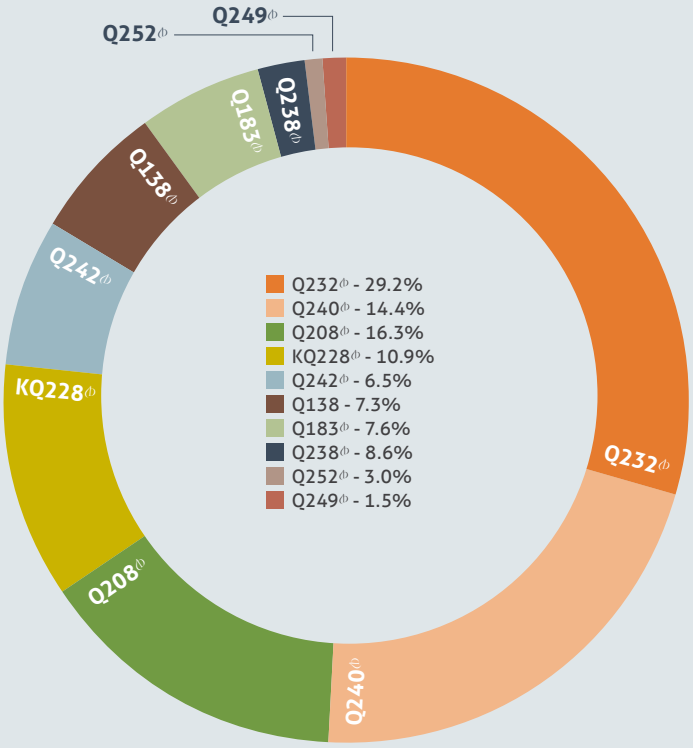
For more information please visit:
sugarresearch.com.au

Rocky Point (% TONNES 2018)

A total of 391,765 tonnes of cane was harvested from 3886 hectares in the Rocky Point Mill area in 2018. The Rocky Point Mill had an average yield of 100.8 TCH and an average CCS of 13.63 which includes a majority of standover cane or two-year old cane.

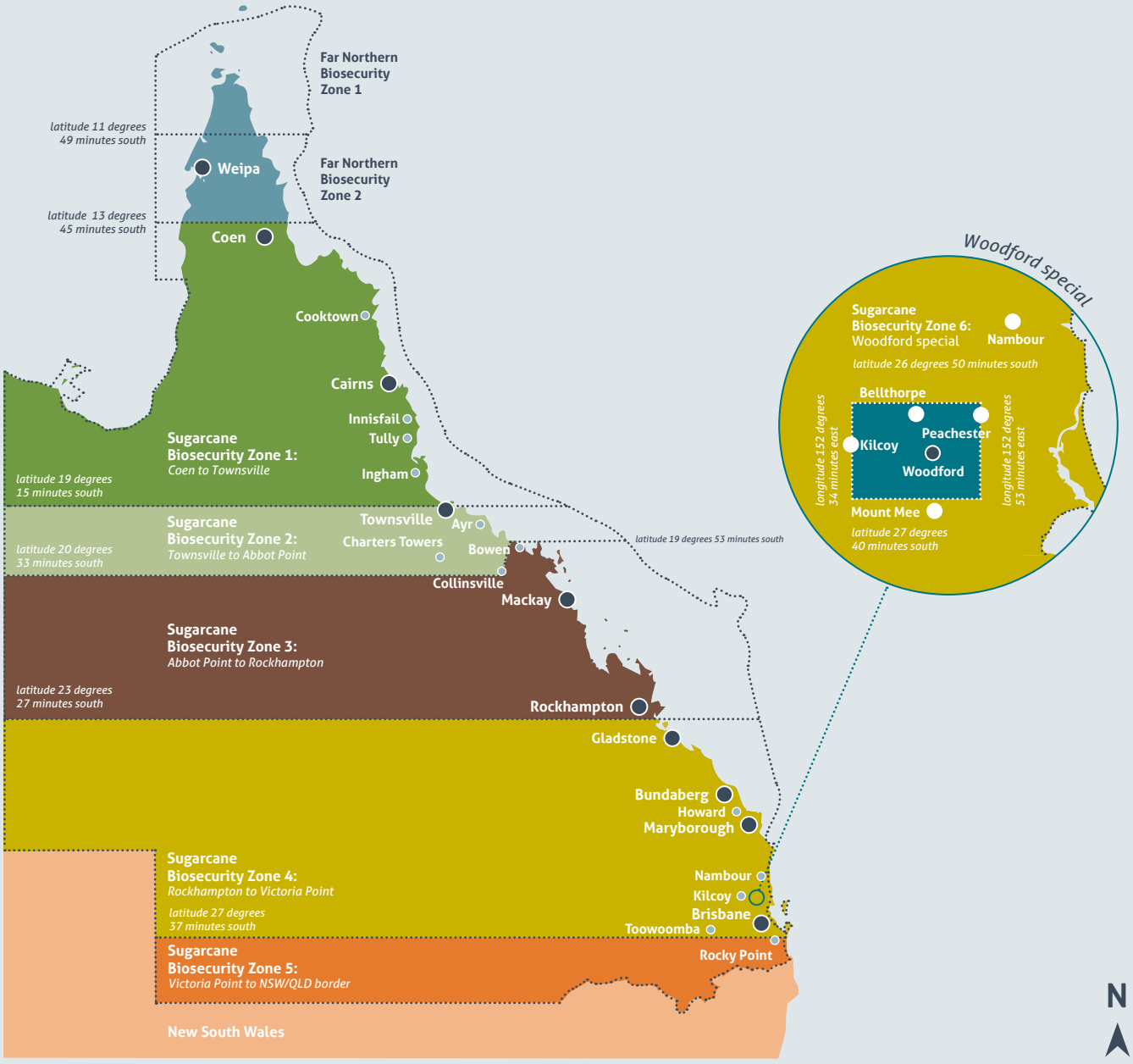
Q232Φ remains the most dominant variety in 2018, accounting for 30% of the total harvest which is similar to the previous year with an increase of 0.8%. Q240Φ increased substantially from 14.4% in 2017 to 21% in 2018. Q208Φ declined slightly to 14%.

Q240Φ , Q252Φ, KQ228Φ, Q232Φ, and Q183Φ all performed at or above mill average for CCS in 2018.



(TCH & TSH 2018)

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

Maryborough Cane Productivity Services:
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.
- QCANESelect® is an online tool that allows you to review, compare and select varieties for use on each block on your farm.
- To access QCANESelect® and the tissue culture calculator visit the SRA website **sugarresearch.com.au**
- The information in QCANESelect® is updated regularly based on our most recent trials and from observations and experiences of varieties that are growing in the field.
- 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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