

# VARIETY GUIDE 2019/2020










*Herbert Region*





# HOW TO USE THIS VARIETY GUIDE

*This Variety Guide provides Herbert-specific information to help Herbert growers select new varieties to trial on their farms from the varieties currently recommended for planting in the Herbert. The guide has the following sections:*

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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](http://sugarresearch.com.au)

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# NEW AND RECENTLY RELEASED VARIETIES

## 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 Herbert RVC (Sugarcane Biosecurity Zone 1) membership is drawn from grower and miller groups from the Herbert region. Three voting grower representatives from Canegrowers and ACFA and three voting miller representatives from Wilmar sit on the RVC. The Herbert RVC requires a majority vote for progression of a variety through the SRA breeding program and a unanimous vote for the release of a variety.

If you would like more information on the variety release process Regional Variety Committee (RVC) please visit the SRA website: [sugarresearch.com.au/growers-and-millers/varieties/regional-variety-committees/](http://sugarresearch.com.au/growers-and-millers/varieties/regional-variety-committees/)

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

Variety: SRA24		QA05-2486	Parentage: QN80-3425 X BN61-1123 / Summary: Higher tonnes cane; lower CCS							
TRIAL HARVEST YEAR	CROP CLASS	YIELD (TCH)				CCS				# OF HARVESTS
		SRA24	Q200 <sup>Ⓟ</sup>	Q208 <sup>Ⓟ</sup>	Q240 <sup>Ⓟ</sup>	SRA24	Q200 <sup>Ⓟ</sup>	Q208 <sup>Ⓟ</sup>	Q240 <sup>Ⓟ</sup>	
(2014 series FATs): 2015	Plant	96	79	89	76	14.7	16.3	16.2	16.3	4
2016	1R	116	102	101	103	15.9	17.0	16.9	16.7	4
2017	2R	98	92	87	93	14.8	16.1	15.8	15.9	4
(2016 series FATs): 2017	Plant	92	88	79	87	15.2	16.7	16.2	16.7	3
2018	1R	81	77	79	79	16.0	17.7	17.9	17.7	3
<b>Overall performance</b>		<b>98</b>	<b>88</b>	<b>88</b>	<b>88</b>	<b>14.5</b>	<b>15.8</b>	<b>15.7</b>	<b>15.7</b>	<b>18</b>
Available 2020										
Comments:		SRA24 has good resistance to smut, Pachymetra and leaf scald. Average to above average yield compared to standards (Q200 <sup>Ⓟ</sup> , Q240 <sup>Ⓟ</sup> , and Q208A <sup>Ⓟ</sup> ). Average to below average CCS compared to standards (2R data from 2016 series still being collected). Has been noted to be a potential mid to late CCS variety (higher CCS from September to November).								

SRA24



SRA14<sup>Ⓟ</sup>



SRA10<sup>Ⓟ</sup>



Variety: SRA14 <sup>Ⓟ</sup>		QC02-402	Parentage: QN91-295 X Q200 <sup>Ⓟ</sup> / Summary: Lower tonnes cane; equal CCS							
TRIAL HARVEST YEAR	CROP CLASS	YIELD (TCH)				CCS				# OF HARVESTS
		SRA14 <sup>Ⓟ</sup>	Q208 <sup>Ⓟ</sup>	Q200 <sup>Ⓟ</sup>	Q240 <sup>Ⓟ</sup>	SRA14 <sup>Ⓟ</sup>	Q208 <sup>Ⓟ</sup>	Q200 <sup>Ⓟ</sup>	Q240 <sup>Ⓟ</sup>	
(2011 series FATs): 2012	Plant	74	67	70		16.2	16.2	16.3		3
2013	1R	65	64	66		16.8	16.7	16.8		3
2014	2R	62	64	65		15.8	16.2	16.6		3
(2013 series FATs): 2014	Plant	78	85	88	80	14.9	15.4	15.1	15.1	2
2015	1R	72	74	83	71	16.1	15.5	16.2	16.7	2
2016	2R	78	82	91	83	13.5	13.9	14.1	14.1	2
(2014 series FATs): 2015	Plant	75	79	89	76	16.3	16.3	16.2	16.3	4
2016	1R	101	102	101	103	16.9	17	16.9	16.7	4
2017	2R	90	92	87	93	15.9	16.1	15.8	15.9	4
(2015 series FATs): 2016	Plant	94	96	99	94	17.1	16.9	17.2	16.6	4
2017	1R	90	97	94	95	16.5	16.5	16.0	16.5	4
2018	2R	93	101	100	101	18.8	18.2	18.3	17.9	4
<b>Overall performance</b>		<b>83</b>	<b>85</b>	<b>87</b>	*	<b>16.4</b>	<b>16.4</b>	<b>16.4</b>	*	<b>39</b>
<b>Available 2019</b>										
Comments:		SRA14 <sup>Ⓟ</sup> has intermediate resistance to smut and is resistant to leaf scald and Pachymetra. This variety has lower TCH and similar CCS when compared to the standards. The relative yield performance of 2011 series FATs are consistent with the long term performance results. *Q240 <sup>Ⓟ</sup> was only evaluated in the 2013, 2014 & 2015 series FATs (only 12 trials) so overall performance was not assessed.								

Variety: SRA10 <sup>Ⓟ</sup>		QN06-807	Parentage: QN92-157 X QN91-3898 / Summary: Lower tonnes cane; higher CCS							
TRIAL HARVEST YEAR	CROP CLASS	YIELD (TCH)				CCS				# OF HARVESTS
		SRA10 <sup>Ⓟ</sup>	Q208 <sup>Ⓟ</sup>	Q200 <sup>Ⓟ</sup>	Q240 <sup>Ⓟ</sup>	SRA10 <sup>Ⓟ</sup>	Q208 <sup>Ⓟ</sup>	Q200 <sup>Ⓟ</sup>	Q240 <sup>Ⓟ</sup>	
(2012 series FATs): 2013	Plant	88	90	97	84	16.4	15.4	15.8	16	4
2014	1R	73	72	83	71	16.2	15.6	16.1	15.8	4
2015	2R	83	88	97	85	16.4	16.0	16.4	16.3	4
(2014 series FATs): 2015	Plant	73	79	89	76	16.3	16.3	16.2	16.3	4
2016	1R	89	102	101	103	17.3	17.0	16.9	16.7	4
2017	2R	74	92	87	93	16.4	16.1	15.8	15.9	4
(2016 series FATs): 2017	Plant	83	88	79	87	17.4	16.7	16.2	16.7	4
2018	1R	71	77	79	79	18.6	17.7	17.9	17.7	4
<b>Overall performance</b>		<b>79</b>	<b>86</b>	<b>90</b>	<b>85</b>	<b>16.8</b>	<b>16.3</b>	<b>16.4</b>	<b>16.4</b>	<b>32</b>
<b>Available 2019</b>										
Comments:		The 2R data from 2016 series FATs are still being collected. Lower cane yields were observed when compared to standards. CCS trial results for SRA10 <sup>Ⓟ</sup> were consistently higher than standards. SRA10 <sup>Ⓟ</sup> showed resistance to leaf scald; intermediate resistance to smut and Pachymetra root rot.								

For more information on variety field trials contact:  
Herbert Variety Officer  
Juan Briceno  
T 07 4776 8205

# DISEASE RESISTANCE

The table below indicates disease ratings of the recommended varieties. Disease has the potential to lower the performance of varieties on your farm. This table will help you select varieties that will perform well given the diseases that may be present on your farm.

Herbert Disease Ratings												
VARIETY	ZONE	SMUT	PACHYMETRA	LEAF SCALD	CHLOROTIC STREAK	ORANGE RUST	BROWN RUST	RSD	RED ROT	YELLOW SPOT	FIJI LEAF GALL	MOSAIC
KQ228 <sup>db</sup>	Wet, Dry	I	I	R	S	R	R	S	R	I	I	R
MQ239 <sup>db</sup>	Wet, Dry	R	I	R		R		I-R	I-R	I	S	
Q138	Wet, Dry	S	I-R	R	I	R	I-R	S	I-S	I	I-R	I-S
Q183 <sup>db</sup>	Wet, Dry	I-R	R	I	S	R	R	I	I	I-S	R	R
Q190 <sup>db</sup>	Wet, Dry	I	R	R		R	I-R	I-R	R	I-S	R	R
Q200 <sup>db</sup>	Wet, Dry	I	I	R	I	R	R	I-R	R	I-R	I	R
Q208 <sup>db</sup>	Wet, Dry	I-R	I	R	R	R	R	I-R	R	R	I-S	R
Q215 <sup>db</sup>	Dry	I-S	R	R		R	R	I-S	R	R	R	R
Q219 <sup>db</sup>	Wet, Dry	I-R	R	R		R		I-R	R		S	S
Q226 <sup>db</sup>	Wet, Dry	R	I-R	R		R	I-S	I	R	R	R	R
Q231 <sup>db</sup>	Wet, Dry	I-R	R	I-R		R		I-R	R	I	S	I-R
Q232 <sup>db</sup>	Wet, Dry	R	I	R	R	R		I	I-R	R	I	R
Q237 <sup>db</sup>	Wet, Dry	I	I-S	I			R	I	I		I	R
Q238 <sup>db</sup>	Wet, Dry	R	R	R	S	R	R	I	I-R	S	I-R	R
Q240 <sup>db</sup>	Wet, Dry	R	I	R	I-R	R		I-R	R	I	I-S	R
Q242 <sup>db</sup>	Wet, Dry	I	R	R	I	R		S	I-R	R	R	R
Q247 <sup>db</sup>	Wet, Dry	I	R	R		R		S	R	S	R	R
Q250 <sup>db</sup>	Wet, Dry	R	I-S	R		I		I-R	I	I-R	S	I-R
Q252 <sup>db</sup>	Wet, Dry	I	I	R		R		I-R	R	I	I	R
Q253 <sup>db</sup>	Wet, Dry	R	I	R		R	I-S	S	I	S	S	R
SRA5 <sup>db</sup>	Wet, Dry	I	I-S	I-R		R	R	I	R		I	R
SRA10 <sup>db</sup>	Wet, Dry	I	I	R		R			I		S	S
SRA14 <sup>db</sup>	Wet, Dry	I	R	R		R			R		S	R
SRA24	Wet, Dry	R	R	R							I	I-R

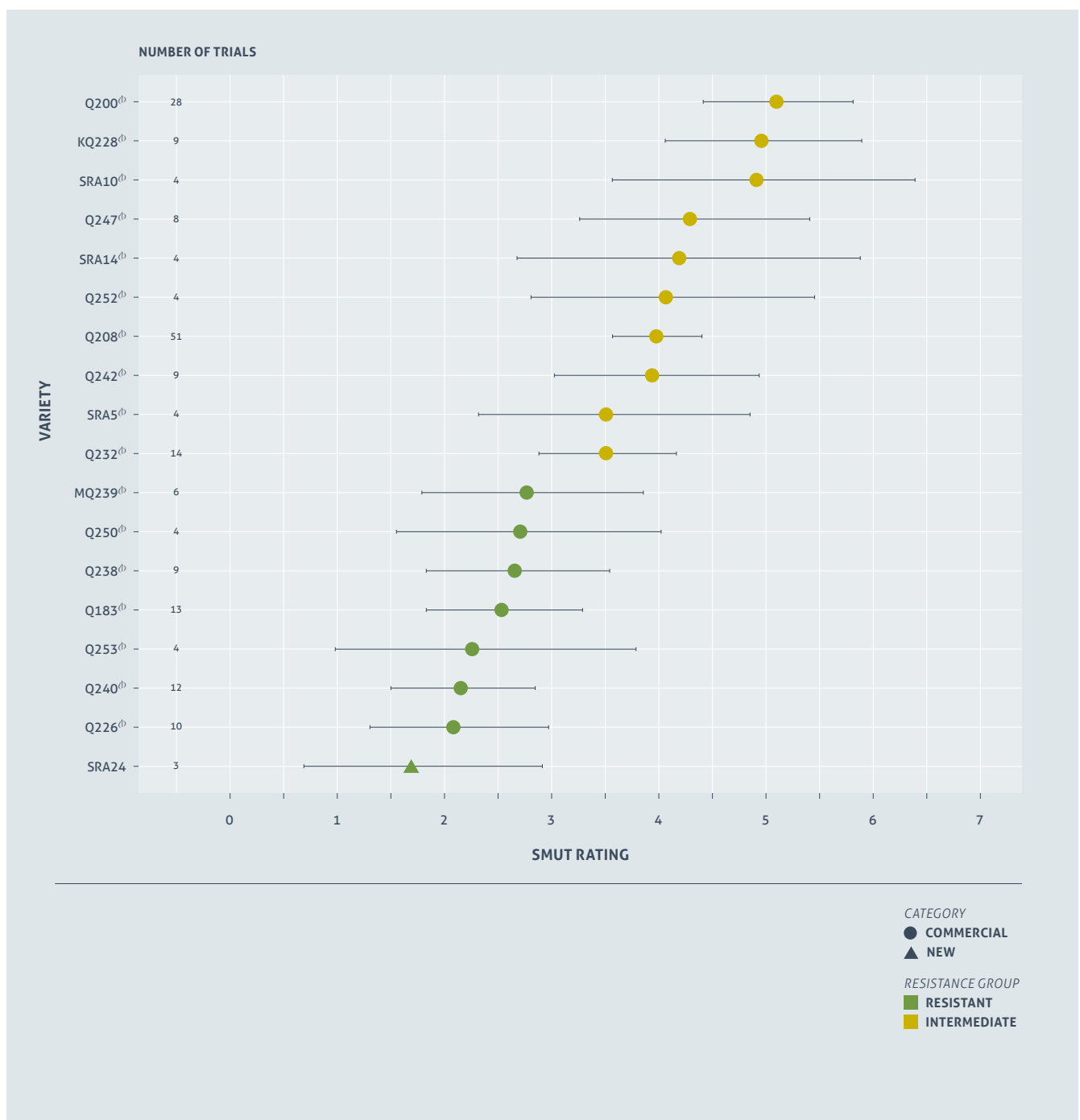
Rotation of varieties is important in the management of diseases. Arrange for your local productivity services officer to inspect your farm for disease. The Diseases of Australian Sugarcane Field Guide provides information on diseases including how to identify and manage them. The guide is available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

- RESISTANT (R)
- RESISTANT -INTERMEDIATE (I-R)
- INTERMEDIATE (I)
- INTERMEDIATE- SUSCEPTIBLE (I-S)
- SUSCEPTIBLE (S)
- NOT TESTED



# 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 Q200<sup>(b)</sup> has been tested in 28 trials and has a narrow confidence interval from 4.5 to 5.75 while the new variety SRA24 has only been tested in 2 trials and ranges from 0.65 to 2.95. Rating confidence will improve as more data is collected.





# VARIETY HARVEST MANAGEMENT

The table below indicates the trashing type and lodging tolerance of the recommended varieties. It also indicates the CCS maturity (early, mid or late sugar) of the recommended varieties in the Herbert Wet and Dry Zones. Harvesting varieties according to their sugar maturity profiles, optimising CCS maturity at time of harvest, can make a significant difference to your productivity.

Herbert Harvest Management								
VARIETY	TRASHING	LODGING TOLERANCE	WET ZONE			DRY ZONE		
			EARLY SUGAR	MID SUGAR	LATE SUGAR	EARLY SUGAR	MID SUGAR	LATE SUGAR
KQ228 <sup>Ⓛ</sup>	Free-Average	Average	Good	Good	Poor	Good	Good	Poor
MQ239 <sup>Ⓛ</sup>	Tight	Average	Average	Average	Average	Average	Average	Average
Q138	Tight	Good	Not Assessed	Not Assessed	Not Assessed	Not Assessed	Not Assessed	Not Assessed
Q183 <sup>Ⓛ</sup>	Free-Average	Average	Average	Good	Average	Average	Good	Average
Q190 <sup>Ⓛ</sup>	Free	Good	Average	Average	Poor	Average	Average	Poor
Q200 <sup>Ⓛ</sup>	Free	Average	Good	Good	Good	Good	Good	Good
Q208 <sup>Ⓛ</sup>	Free	Average	Good	Good	Good	Good	Good	Good
Q215 <sup>Ⓛ</sup>	Not Assessed	Average	Not Assessed	Not Assessed	Not Assessed	Poor	Average	Average
Q219 <sup>Ⓛ</sup>	Free	Average	Good	Good	Good	Good	Good	Good
Q226 <sup>Ⓛ</sup>	Average	Average	Average	Average	Poor	Average	Average	Poor
Q231 <sup>Ⓛ</sup>	Tight	Average	Good	Average	Average	Good	Average	Average
Q232 <sup>Ⓛ</sup>	Free-Average	Average	Poor	Average	Average	Poor	Average	Average
Q237 <sup>Ⓛ</sup>	Tight	Good	Good	Average	Average	Good	Good	Poor
Q238 <sup>Ⓛ</sup>	Free-Average	Good	Average	Average	Average	Average	Average	Average
Q240 <sup>Ⓛ</sup>	Free-Average	Average	Average	Good	Good	Average	Good	Good
Q242 <sup>Ⓛ</sup>	Tight	Not Assessed	Average	Average	Poor	Average	Poor	Poor
Q247 <sup>Ⓛ</sup>	Free-Average	Not Assessed	Good	Good	Good	Good	Good	Good
Q250 <sup>Ⓛ</sup>	Free-Average	Average	Good	Good	Good	Good	Good	Good
Q252 <sup>Ⓛ</sup>	Free	Average	Average	Good	Good	Not Assessed	Not Assessed	Not Assessed
Q253 <sup>Ⓛ</sup>	Free-Average	Good	Poor	Average	Average	Poor	Average	Average
SRA5 <sup>Ⓛ</sup>	Not Assessed	Not Assessed	Poor	Poor	Poor	Poor	Poor	Poor
SRA10 <sup>Ⓛ</sup>	Tight	Good	Good	Good	Good	Good	Good	Good
SRA14 <sup>Ⓛ</sup>	Free	Good	Average	Good	Good	Average	Good	Good
SRA24	Free	Good	Good	Good	Good	Good	Good	Good

TRASHING

- FREE
- FREE-AVERAGE
- AVERAGE
- TIGHT

■ GOOD

- AVERAGE
- POOR
- NOT ASSESSED







# HERBICIDES AND PHYTOTOXICITY

## 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:

- **Year 1:** a randomised replicated pot trial to shortlist the most susceptible combinations of varieties and herbicides.
- **Year 2:** a randomised replicated field trial to confirm that the shortlisted combinations have an impact on yield.

In year three, the 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 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<sup>®</sup> 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:**  
**Senior Researcher**  
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**T 07 4056 4510**

**TABLE 1 Summary of phytotoxicity ratings and symptoms obtained on the reference variety KQ228<sup>®</sup>**

	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 <sup>®</sup>	mild	mild	mild	medium	medium to severe	mild	medium	medium	severe	mild
KQ228 <sup>®</sup> 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<sup>Ⓛ</sup> in Table 2. Green cells indicate varieties that display less severe symptoms than KQ228<sup>Ⓛ</sup>. White cells indicate varieties

with similar symptoms to KQ228<sup>Ⓛ</sup> and red cells indicate varieties that display more severe symptoms than KQ228<sup>Ⓛ</sup>.

- SYMPTOMS LESS SEVERE THAN KQ228<sup>Ⓛ</sup>
- SYMPTOMS SLIGHTLY LESS SEVERE THAN KQ228<sup>Ⓛ</sup>
- SYMPTOMS SLIGHTLY MORE SEVERE THAN KQ228<sup>Ⓛ</sup>
- SYMPTOMS MORE SEVERE THAN KQ228<sup>Ⓛ</sup>
- COMBINATION OF HERBICIDE BY VARIETY NOT TESTED

**TABLE 2 Visual symptoms of herbicide toxicity compared to KQ228<sup>Ⓛ</sup>.**

*This table indicates if varieties display more or less phytotoxicity symptoms than KQ228<sup>Ⓛ</sup>*

KQ228 <sup>Ⓛ</sup> COMPARED TO:	2,4-D	METRIBUZIN	AMETRYN+ TRIFLOXY SULFURON	ASULAM	MSMA	2,4-D + IOXYNIL	METOLACHLOR	AMETRYN	FLUMIOXAZIN	AMICARBAZONE
SRA5 <sup>Ⓛ</sup>	■	■	--	■	■	--	■	■	--	--
SRA10 <sup>Ⓛ</sup>	■	■	--	■	■	--	■	■	■	■
SRA14 <sup>Ⓛ</sup>	■	■	--	■	■	--	■	■	■	■
Q208 <sup>Ⓛ</sup>	■	■	■	■	■	■	■	--	--	--
Q232 <sup>Ⓛ</sup>	■	■	■	■	■	■	■	--	--	--
Q238 <sup>Ⓛ</sup>	■	■	■	■	■	■	■	--	--	--
Q240 <sup>Ⓛ</sup>	■	■	■	■	■	■	■	--	--	--
Q242 <sup>Ⓛ</sup>	■	■	■	■	■	■	■	--	--	--
Q250 <sup>Ⓛ</sup>	■	■	■	■	■	■	■	--	--	--
Q252 <sup>Ⓛ</sup>	■	■	■	■	■	■	■	--	--	--
Q253 <sup>Ⓛ</sup>	■	■	■	■	■	■	■	--	--	--

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
- 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
SRA5 <sup>Ⓛ</sup>	■	■	--	■	■	--	■	■	--	--
SRA10 <sup>Ⓛ</sup>	■	■	--	■	■	--	■	■	■	■
SRA14 <sup>Ⓛ</sup>	■	■	--	■	■	--	■	■	■	■
Q208 <sup>Ⓛ</sup>	■	■	■	■	■	■	■	--	--	--
Q232 <sup>Ⓛ</sup>	■	★	■	★	★	■	■	--	--	--
Q238 <sup>Ⓛ</sup>	■	★	■	★	★	■	■	--	--	--
Q240 <sup>Ⓛ</sup>	■	■	■	■	■	■	■	--	--	--
Q242 <sup>Ⓛ</sup>	■	★	■	★	★	■	■	--	--	--
Q250 <sup>Ⓛ</sup>	■	★	■	★	★	■	■	--	--	--
Q252 <sup>Ⓛ</sup>	■	■	■	■	■	■	■	--	--	--
Q253 <sup>Ⓛ</sup>	■	■	■	■	■	■	■	--	--	--
KQ228 <sup>Ⓛ</sup> 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 <sup>Ⓛ</sup> 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 PROFILE FOR THE HERBERT REGION 2018

The diagram below indicates the main sugarcane varieties harvested in the Herbert Region in the 2018 season. The commercial performance; tonnes of cane per hectare (TCH) and tonnes of sugar per hectare (TSH), for these varieties are indicated in the table below. This information is also available in QCANESelect® under the regional reporting tab.

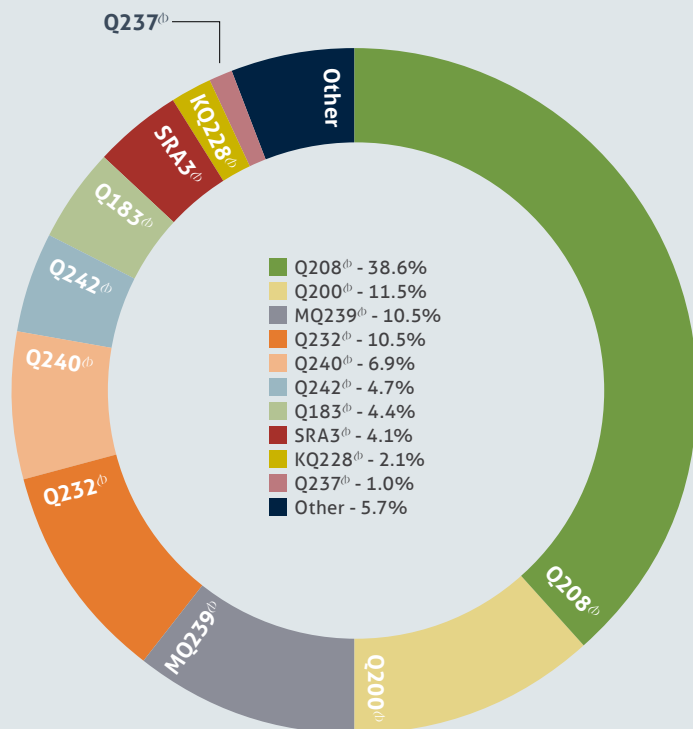
## Varieties harvested

In the 2018 season the Herbert region harvested 4,718,178 tonnes of cane during a harvesting season that lasted 24.4 weeks. There were 57,043 hectares harvested in 2018 and 14% of this was plant cane. 99.9% of the crop was harvested green. The average mill area CCS was 14.24 and the average TCH and TSH were 82.7 and 11.8 respectively.

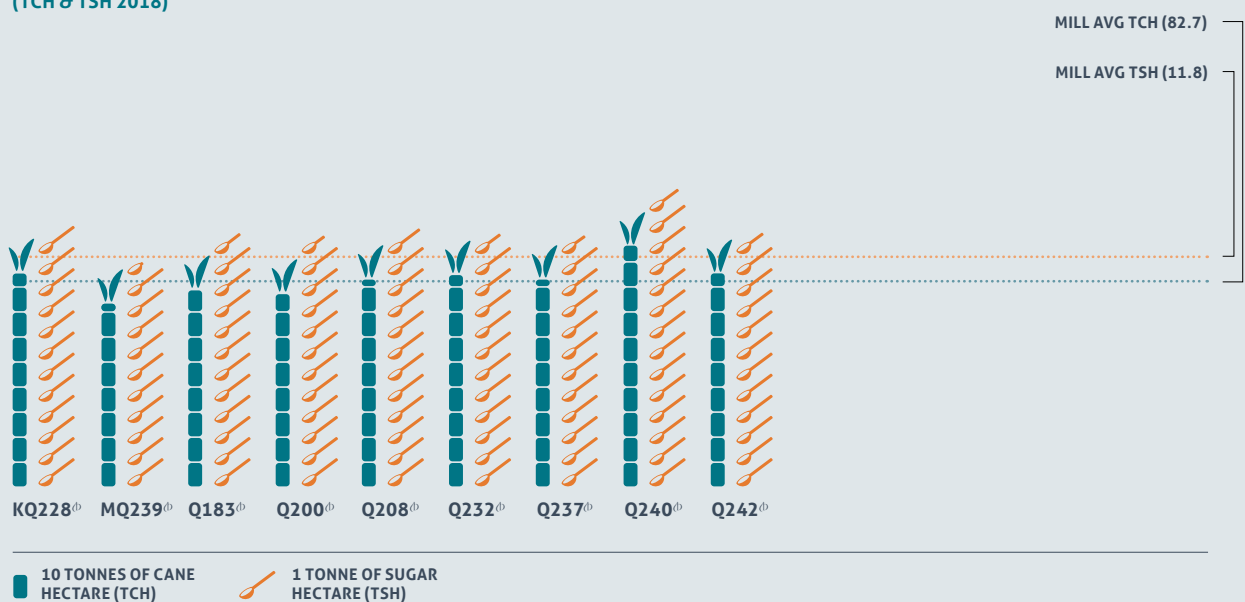
Q208<sup>®</sup> remains the most popular variety in the Herbert accounting for 38.6% of the total tonnes harvested. Q200<sup>®</sup>, MQ239<sup>®</sup> and Q232<sup>®</sup> each accounted for approximately 10% of the total tonnes harvested.

## TCH and TSH of the varieties harvested

The TCH and TSH, of the main varieties harvested in the Herbert 2018 season, are compared to the Herbert mill averages in the diagram below. At this scale the commercial performance of recently released varieties is difficult to compare with that of established varieties.



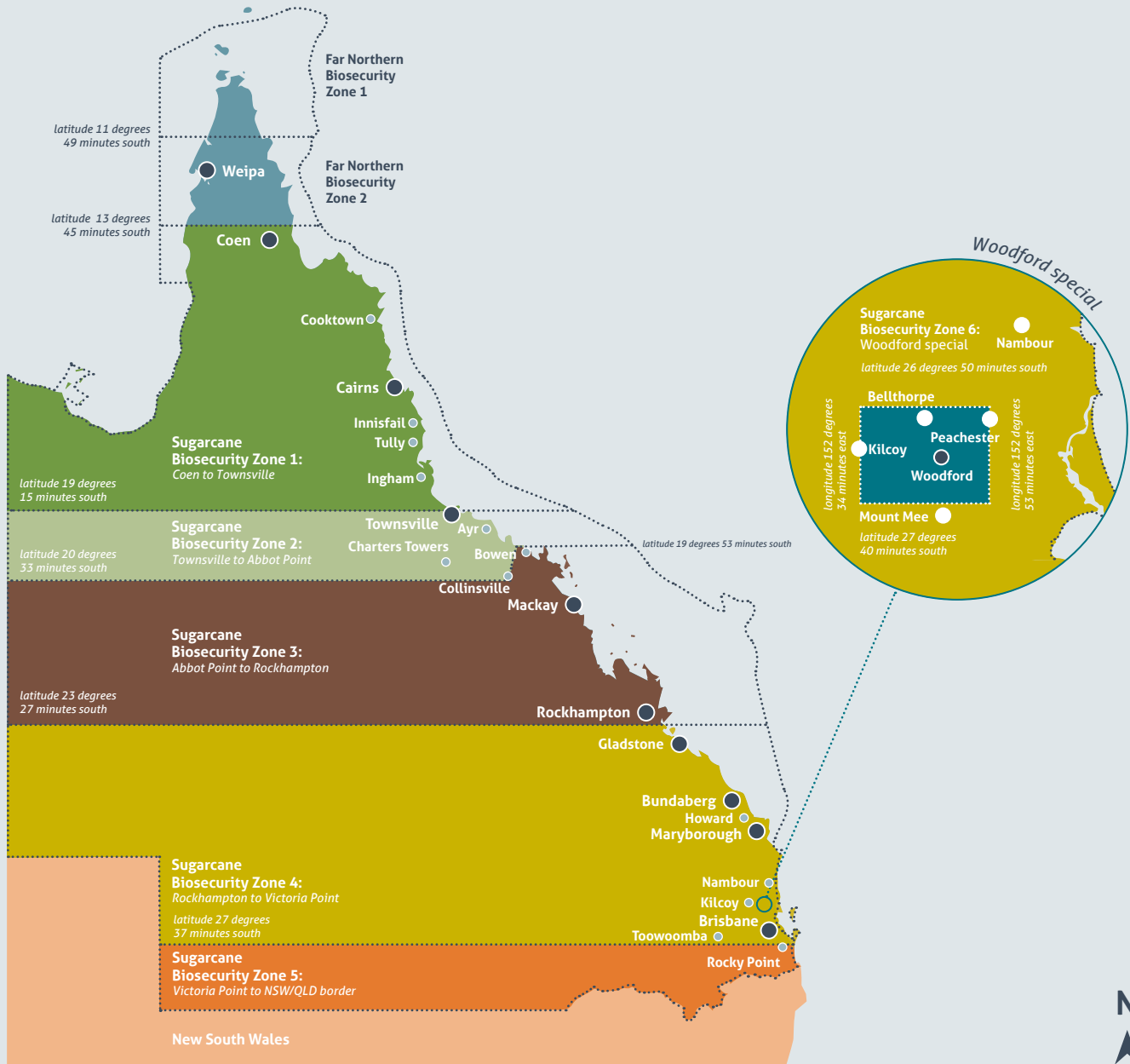
## (TCH & TSH 2018)



Note: Despite SRA3<sup>®</sup> having high yields in some areas it is no longer recommended for planting in the Herbert region, due to its susceptibility to Smut, so is not included in this table.



# 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 Herbert Cane Productivity Services Limited (HCPSL) for regional advice on varieties. HCPSL can supply clean planting material of recommended varieties and place orders for tissue culture plantlets.



Herbert Cane Productivity Services Ltd (HCPSL):  
T 07 4776 5660

HCPSL Variety Development Officer, Sam Sellick  
E [ssellick@hcpsl.com.au](mailto:ssellick@hcpsl.com.au)  
T 0417 622 129

## 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 advance 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](http://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
	Row Length, planted @ 0.8m (m)	80	200	400	800
Yr 2	Row available for planting (m)	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](mailto:cbolton@sugarresearch.com.au) T 07 3331 3374

# PLANTING AND MANAGING TISSUE-CULTURED PLANTLETS IN THE FIELD

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## 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 its 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](http://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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