Sugar Research Australia

Variety Guide 2017/18

Northern region

How to use this guide

This guide is designed to help growers in the Northern 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:

Managing the varieties on your farm is vital. By making informed choices at planting, you can make a positive difference to your farm productivity and profitability for the whole crop cycle. To help you make decisions about the best-suited varieties for your farm, use QCANESelect® – our online variety decision-support tool. This tool is available on the SRA website www.sugarresearch.com.au

Want to know what is happening in the other regions?

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

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New and recent varieties available in the Northern region

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

Variety: SRA10Ф

Parentage: QN92-157 x QN91-3898 **Summary:** Equal tonnes cane; higher CCS

Trial harvest year	Crop class	Yield (tonnes cane/ha)				CCS				# of trials
		SRA10Ф	Q200Ф	Q208Ф	Q250Ф	SRA10Ф	Q200Ф	Q208Ф	Q250Ф	
(2012 series FATs): 2013	Plant	106	102	94	96	17.6	16.9	17.4	18.2	4
2014	1R	96	91	90	92	16.4	16.1	16.3	16.5	4
2015	2R	94	99	103	90	16.2	15.8	16.2	15.9	4
(2015 series FATs): 2016	Plant	108	117	114	109	15.9	15.2	15.0	15.8	4
Overall performance		**101**	**102**	**100**	**97**	**16.5**	**16.0**	**16.2**	**16.6**	**16**

Available from 2017

Comments: SRA10Ф results are from the 2012 and 2015 FAT series (1R and 2R data from 2015 series still to be collected). Equal cane yields were observed when compared to commercial standards. CCS trial results for SRA10Ф were consistently higher than Q200Ф and Q208Ф and often similar to Q250Ф. May be slightly sensitive to CSLHWT. Resistant to leaf scald; intermediate resistance to smut and Pachymetra root rot.

Variety: SRA7Ф

Parentage: QS87-8032 x QN86-139 **Summary:** Higher tonnes cane, lower CCS

Trial harvest year	Crop class	Yield (tonnes cane/ha)				CCS				# of trials
		SRA7Ф	Q200Ф	Q208Ф	Q250Ф	SRA7Ф	Q200Ф	Q208Ф	Q250Ф	
(2011 series FATs): 2012	Plant	116	98	93	101	15.6	16.5	16.4	17.1	4
2013	1R	121	106	113	101	16.2	17.1	17.4	18.1	4
2014	2R	105	93	98	80	15.3	16.3	16.5	16.7	4
(2014 series FATs): 2015	Plant	110	100	101	101	14.2	15.6	15.6	16.1	4
2016	1R	124	116	126	110	14.4	15.7	15.5	15.7	4
(2015 series FATs): 2016	Plant	122	117	114	109	13.7	15.4	15.2	15.8	4
Overall performance		**116**	**105**	**107**	**100**	**14.9**	**16.1**	**16.1**	**16.6**	**24**

Available from 2016

Comments: SRA7Ф was planted in three FAT series (2011, 2014 and 2015). SRA7Ф's cane yield was higher, and CCS on average -1.0 to -1.5 units, when compared with commercial standards. Cane yields were consistently maintained above the commercial standards across ratoon crops and soil types where tested. Resistant to leaf scald; intermediate resistance to smut and Pachymetra root rot.

New and recent varieties (cont.)

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

Variety: SRA6Φ

Parentage: QN80-3425 x QH93-1197 **Summary:** Higher tonnes cane, lower CCS

Trial harvest year	Crop class	Yield (tonnes cane/ha)				CCS				# of trials
		SRA6Φ	Q200Φ	Q208Φ	Q250Φ	SRA6Φ	Q200Φ	Q208Φ	Q250Φ	
(2011 series FATs): 2012	Plant	102	98	93	101	16.1	16.5	16.4	17.1	4
2013	1R	118	106	113	101	16.9	17.1	17.4	18.1	4
2014	2R	106	93	98	80	15.9	16.3	16.5	16.7	4
(2014 series FATs): 2015	Plant	103	100	101	101	14.7	15.6	15.6	16.1	4
2016	1R	125	116	126	110	14.4	15.7	15.5	15.7	4
(2015 series FATs): 2016	Plant	112	117	114	109	14.5	15.2	15.0	15.8	4
Overall performance		**111**	**105**	**107**	**100**	**15.4**	**16.1**	**16.1**	**16.6**	**24**
Available from 2016										

Comments: SRA6Φ was planted in three FAT series (2011, 2014 and 2015). SRA6Φ's cane yield was equal or higher, and CCS on average -0.5 to -1.0 units, when compared with commercial standards. Equally good performance over different soil types where tested, but early indications are that SRA6Φ may be less suitable to poor/dry conditions. Early crop establishment can be slower, followed by accelerated growth from Autumn. Resistant to smut, Pachymetra root rot and leaf scald.

Variety: SRA3Φ

Parentage: QN86-2214 x Q200Φ **Summary:** Higher tonnes cane, lower CCS

Trial harvest year	Crop class	Yield (tonnes cane/ha)				CCS				# of trials
		SRA3Φ	Q200Φ	Q208Φ	Q250Φ	SRA3Φ	Q200Φ	Q208Φ	Q250Φ	
(2014 series FATs): 2015	Plant	98	100	101	101	15.3	15.6	15.6	16.1	4
2016	1R	120	116	126	110	15.1	15.7	15.5	15.7	4
(2015 series FATs): 2016	Plant	128	117	114	109	14.8	15.2	15.0	15.8	4
Overall performance		**115**	**111**	**113**	**107**	**15.1**	**15.5**	**15.4**	**15.9**	**12**
Available from 2016										

Comments: Limited Northern trial results available for SRA3Φ (4 FATs in 2014 series, 4 FATs in 2015 series; currently no 2R results available). Results from the Herbert FATs where it was first released showed equal cane yield, and CCS similar to Q200Φ (better mid-to-late season). SRA3Φ CCS measured in the Northern FATs was comparably lower than those measured in the Herbert. Has shown some promise in harsh conditions in the Herbert. Intermediate to leaf scald and Intermediate-susceptible to smut, Pachymetra root rot. Smut has been observed in commercial crops of SRA3Φ in the dry areas of the Herbert.

New and recent varieties (cont.)

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

Variety: SRA1Ф

Parentage: QN86-2139 x QC90-289 **Summary:** Lower tonnes cane, equal to higher CCS

Trial harvest year	Crop class	Yield (tonnes cane/ha)				CCS				# of trials
		SRA1Ф	Q200Ф	Q208Ф	Q250Ф	SRA1Ф	Q200Ф	Q208Ф	Q250Ф	
(2014 series FATs): 2015	Plant	90	85	88	91	15.8	15.1	15.2	15.6	2
2016	1R	122	135	138	124	15.3	15.2	15.0	15.1	2
(2015 series FATs): 2016	Plant	96	117	114	109	15.0	15.2	15.0	15.8	4
Overall performance		**101**	**114**	**113**	**108**	**15.3**	**15.2**	**15.1**	**15.6**	**8**

Available from 2016

Comments: Limited Northern trial results available for SRA1Ф (2 FATs in 2014 series, 4 FATs in 2015 series; currently no 2R results available). Cane yield and CCS results for SRA1Ф were not consistant across the two FAT series. Cane yield was equal to lower than standards, and CCS was equal to higher when compared to commercial standards. Heavy lodging and severe rat damage noted in SRA1Ф in most Northern trials. Resistant to smut and leaf scald; intermediate resistance to Pachymetra root rot. Low fibre content; low impact resistance and shear strength.

SRA10Ф

SRA7Ф

SRA6Ф

SRA3Ф

SRA1Ф

Disease resistance

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. White indicates unknown.

Resistant · Intermediate/Resistant · Intermediate · Intermediate/Susceptible · Susceptible

N Northern Coastal · T Tableland

Clone	Region recommended	Smut	Pachymetra	Leaf scald	Chlorotic streak	Orange rust	Brown rust	RSD	Red rot	Yellow spot	Fiji Leaf Gall	Mosaic
SRA10Φ	N, T											
SRA7Φ	N, T											
SRA6Φ	N, T											
SRA3Φ	N, T											
SRA1Φ	N, T											
Q256Φ	T											
Q253Φ	N, T											
Q252Φ	N, T											
Q251Φ	N, T											
Q250Φ	N, T											
Q245Φ	N											
Q242Φ	N											
Q241Φ	N, T											
Q240Φ	N, T											
Q238Φ	N, T											
Q237Φ	N, T											
Q232Φ	N, T											
Q231Φ	N, T											
Q230Φ	N, T											
KQ228Φ	N, T											
Q219Φ	N, T											
Q208Φ	N, T											
Q200Φ	N, T											
Q183Φ	N, T											

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 www.sugarresearch.com.au

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.

Northern Coastal

Variety	Early sugar	Mid sugar	Late sugar
SRA10Φ	Good	Good	Good
SRA7Φ	Poor	Average	Poor
SRA6Φ	Average	Average	Average
SRA3Φ	Poor	Average	Good
SRA1Φ	Good	Good	Average
Q253Φ	Poor	Average	Average
Q252Φ	Average	Good	Average
Q251Φ	Average	Good	Average
Q250Φ	Good	Good	Good
Q245Φ	Poor	Average	Average
Q242Φ	Poor	Average	Average
Q241Φ	Poor	Poor	Average
Q240Φ	Average	Good	Good
Q238Φ	Average	Average	Average
Q237Φ	Average	Good	Poor
Q232Φ	Poor	Good	Poor
Q231Φ	Average	Average	Poor
Q230Φ	Good	Good	Average
KQ228Φ	Good	Average	Poor
Q219Φ	Poor	Average	Good
Q208Φ	Average	Good	Good
Q200Φ	Average	Good	Good
Q183Φ	Poor	Poor	Average

Northern Tableland

Variety	Early sugar	Mid sugar	Late sugar
SRA10Φ	Good	Good	Good
SRA7Φ	Poor	Poor	Poor
SRA6Φ	Poor	Poor	Poor
SRA3Φ	Poor	Average	Good
SRA1Φ	Good	Good	Average
Q256Φ	Poor	Poor	Poor
Q253Φ	Poor	Average	Average
Q252Φ	Average	Good	Average
Q251Φ	Poor	Good	Average
Q250Φ	Good	Good	Good
Q241Φ	Poor	Poor	Average
Q240Φ	Poor	Average	Average
Q238Φ	Average	Average	Poor
Q237Φ	Average	Good	Poor
Q232Φ	Poor	Good	Poor
Q231Φ	Average	Poor	Poor
Q230Φ	Good	Good	Average
KQ228Φ	Good	Good	Poor
Q219Φ	Poor	Average	Good
Q208Φ	Average	Average	Average
Q200Φ	Poor	Average	Average
Q183Φ	Poor	Poor	Average

Maximise your profit at harvest: *Selecting varieties for specific sugar maturity profiles, planting and harvesting them for optimal CCS maturity at time of harvest 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.*

Variety management

This chart is useful for matching a variety to a particular field situation. For example, if a field has a drainage problem, then select a variety with some tolerance to waterlogging.

Northern Coastal

Variety	Tolerance to waterlogging	Flowering	Ratooning under wet conditions	Speed of germination	Reliability of germination
SRA10Φ	Unknown	Sparse	Unknown	Average	Good
SRA7Φ	Unknown	Sparse	Average	Average	Good
SRA6Φ	Unknown	Sparse	Average	Average	Good
SRA3Φ	Average	Moderate	Average	Average	Average
SRA1Φ	Unknown	Moderate	Unknown	Rapid	Good
Q253Φ	Good	Moderate	Good	Average	Average
Q252Φ	Average	Moderate	Average	Average	Average
Q251Φ	Poor	Sparse	Poor	Average	Average
Q250Φ	Average	Moderate	Average	Average	Average
Q245Φ	Average	Moderate	Unknown	Average	Average
Q242Φ	Good	Heavy	Good	Rapid	Good
Q241Φ	Poor	Sparse	Poor	Average	Good
Q240Φ	Average	Moderate	Average	Rapid	Good
Q238Φ	Poor	Heavy	Poor	Rapid	Average
Q237Φ	Average	Moderate	Average	Average	Good
Q232Φ	Average	Heavy	Average	Slow	Good
Q231Φ	Good	Moderate	Average	Average	Average
Q230Φ	Poor	Heavy	Average	Average	Average
KQ228Φ	Average	Heavy	Average	Rapid	Good
Q219Φ	Good	Sparse	Average	Average	Average
Q208Φ	Good	Heavy	Average	Slow	Average
Q200Φ	Average	Moderate	Average	Rapid	Good
Q183Φ	Poor	Sparse	Average	Rapid	Good

Variety management (cont.)

This chart is useful for matching a variety to a particular field situation. For example, if a field has a drainage problem, then select a variety with some tolerance to waterlogging.

Northern Tableland

Variety	Tolerance to waterlogging	Speed of germination	Reliability of germination
SRA10Φ	Unknown	Average	Good
SRA7Φ	Unknown	Average	Good
SRA6Φ	Unknown	Average	Good
SRA3Φ	Average	Average	Average
SRA1Φ	Unknown	Rapid	Good
Q256Φ	Good	Slow	Average
Q253Φ	Good	Average	Average
Q252Φ	Average	Average	Average
Q251Φ	Poor	Average	Average
Q250Φ	Average	Average	Average
Q241Φ	Poor	Average	Good
Q240Φ	Average	Rapid	Good
Q238Φ	Poor	Average	Average
Q237Φ	Average	Average	Good
Q232Φ	Average	Slow	Good
Q231Φ	Good	Average	Average
Q230Φ	Poor	Average	Average
KQ228Φ	Average	Rapid	Good
Q219Φ	Good	Average	Average
Q208Φ	Good	Slow	Average
Q200Φ	Poor	Average	Good
Q183Φ	Good	Average	Good

Variety performance 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).

Mossman

Mossman % tonnes 2016

The Mossman region harvested 12,939 hectares to produce 1.3 million tonnes of cane in 2016. The mill average tonnes of cane per hectare (TCH) was 101.4 and average CCS was 11.6.

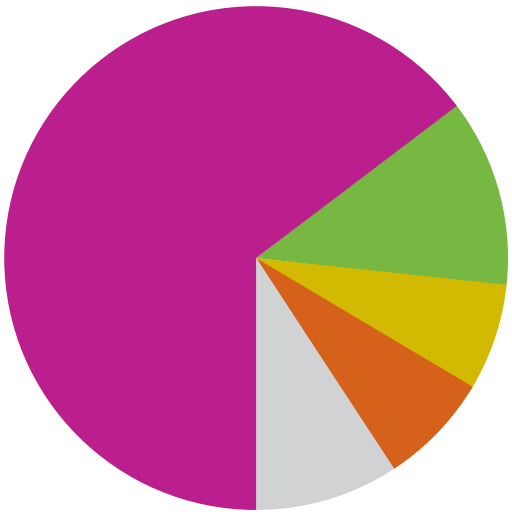
Q208Φ has increased from 36.3% in 2013 to 49.8% of the total harvest tonnage in 2016. Whilst Q200Φ declined from 21.1% to 6.2% over the same period.

Q231Φ remained steady at 8.2% of the harvest. KQ228Φ, Q250Φ, Q208Φ, Q183Φ, Q251Φ and Q240Φ all achieved above mill average TCH and TSH.

	Q208Φ – 49.8%		**Q237**Φ – 1.8%
	KQ228Φ – 13.3%		**Q219**Φ – 1.2%
	Q183Φ – 8.3%		**Q238**Φ – 1.0%
	Q231Φ – 8.2%		**Q138** – 0.6%
	Q200Φ – 6.2%		**Q256**Φ – 0.6%
	Q250Φ – 4.2%		**Q220**Φ – 0.5%
	Q241Φ – 2.0%		

Mulgrave

Mulgrave % tonnes 2016



In 2016 Mulgrave produced 1.3 million tonnes of cane harvested from 12,174 hectares. The average tonnes of cane per hectare was 103.5 and average CCS was 11.2.

Q208Φ has remained above 50% of total Mulgrave harvest since 2013 and in 2016 increased to 62.9%. Over the same period Q200Φ declined from 28.4% to 11.9% in 2016.

Q240Φ, Q250Φ, Q238Φ performed above mill average for TCH and TSH. Q208Φ and KQ228Φ maintained mill average and Q183Φ performed just under mill average. Q245Φ, Q242Φ and Q247Φ also performed above mill average for TCH and TSH remembering this is young cane and small sample size.

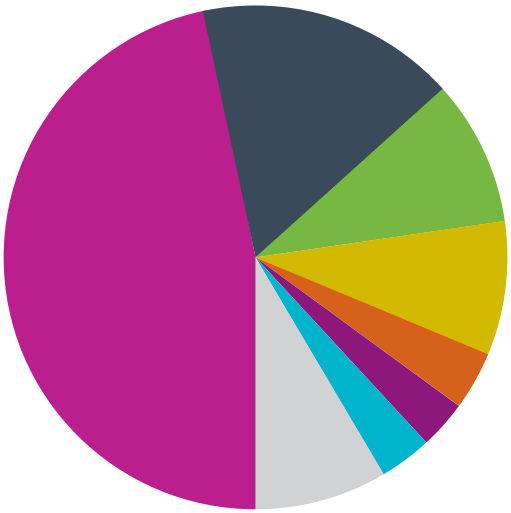
	Q208Φ – 62.9%		**Q231**Φ – 1.5%
	Q200Φ – 11.9%		**Q251**Φ – 1.3%
	Q250Φ – 7.2%		**Q186**Φ – 0.7%
	KQ228Φ – 6.2%		**Q240**Φ – 0.6%
	Q183Φ – 3.0%		**Q238**Φ – 0.4%
	Q237Φ – 1.6%		

Variety performance (cont.)

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).

Tully

Tully % tonnes 2016



Tully performed similarly to the 2015 season harvesting 29,168 hectares to produce 2.9 million tonnes in 2016. Average TCH was 100.7 and average CCS was 12.0.

Q208Φ remained the dominant variety recording 47.1% of total tonnes and returned close to mill average TCH and TSH. Q200Φ reduced from 29.2% in 2013 to 16.8% in 2016. KQ228Φ remained steady at 8.5%, Q231Φ increased to 7.5% and Q250Φ increased to 4.1% in 2016.

Q247Φ, Q251Φ, Q250Φ, Q240Φ and KQ228Φ performed above mill average for TCH and TSH. New varieties Q242Φ and Q252Φ were above mill average for both TCH and TSH (however this is young cane and a small sample size).

	Q208Φ – 47.1%		**Q183**Φ – 1.7%
	Q200Φ – 16.8%		**Q232**Φ – 1.5%
	KQ228Φ – 8.5%		**Q219**Φ – 1.0%
	Q231Φ – 7.5%		**Q251**Φ – 1.0%
	Q250Φ – 4.1%		**Q247**Φ – 0.4%
	Q237Φ – 3.6%		**Q229**Φ – 0.3%
	Q241Φ – 3.4%		**Q240**Φ – 0.2%
	Q186Φ – 1.9%		**Q238**Φ – 0.2%

Tableland

Tableland % tonnes 2016

In 2016 Tablelands harvested 4,371 hectares resulting in 405,314 tonnes of cane. The average TCH was 92.7 and average CCS was 13.5.

Q208Φ remained the most utilised variety up to 43.3% of the total crop with Q200Φ showing marked decline from 18.4% in 2013 to 5.1% in 2016. Q231Φ lost some traction on the Tableland falling to 7.5% whilst KQ228Φ increased from 8.7% in 2013 to 27.3% in 2016. Q183Φ reduced from 16.2% in 2015 to 12.9% in 2016 and returned below mill average TCH and TSH.

Q250Φ and KQ228Φ both achieve greater than mill average in TCH and TSH and Q208Φ performed just above mill average. Both Q231Φ and Q200Φ performed below mill average for TCH and TSH in 2016.

	Q208Φ – 43.3%		**Q231**Φ – 7.5%
	KQ228Φ – 27.3%		**Q200**Φ – 5.1%
	Q183Φ – 12.9%		

Variety performance (cont.)

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).

South Johnstone

South Johnstone % tonnes 2016

In 2016 South Johnstone region harvested 22,309 hectares resulting in just under 2 million tonnes of cane, a similar result to 2015. Mill average TCH was 88.9 and average CCS was 11.1. Q208Φ peaked in 2014 at 29.3% of total harvest and has since declined to 23.8% in 2016. Q200Φ has similarly declined from 27% in 2013 to 23% in 2016. Q183Φ remained steady at 10.4% in 2016.

KQ228Φ, Q240Φ, Q251Φ, Q250Φ, Q238Φ and Q232Φ all out performed mill average for TCH and TSH. Q200Φ returned mill average values. New varieties Q253Φ, Q249Φ, Q247Φ and Q242Φ all achieved above mill average for TCH and TSH. Q208Φ sat just under mill average for both TCH and TSH. Q183Φ was disappointingly below mill average for TCH and TSH.

	Q208Φ – 23.8%		**KQ228**Φ – 2.8%
	Q200Φ – 23.0%		**Q229**Φ – 1.4%
	Q183Φ – 10.4%		**Q219**Φ – 1.2%
	Q231Φ – 8.3%		**Q232**Φ – 1.0%
	Q241Φ – 6.3%		**Q237**Φ – 0.6%
	Q250Φ – 5.6%		**Q217**Φ – 0.6%
	Q186Φ – 5.3%		**Q230**Φ – 0.5%
	Q238Φ – 3.5%		**Q187**Φ – 0.5%
	Q251Φ – 3.3%		**Q240**Φ – 0.3%

New Variety Recommendation and Release Process

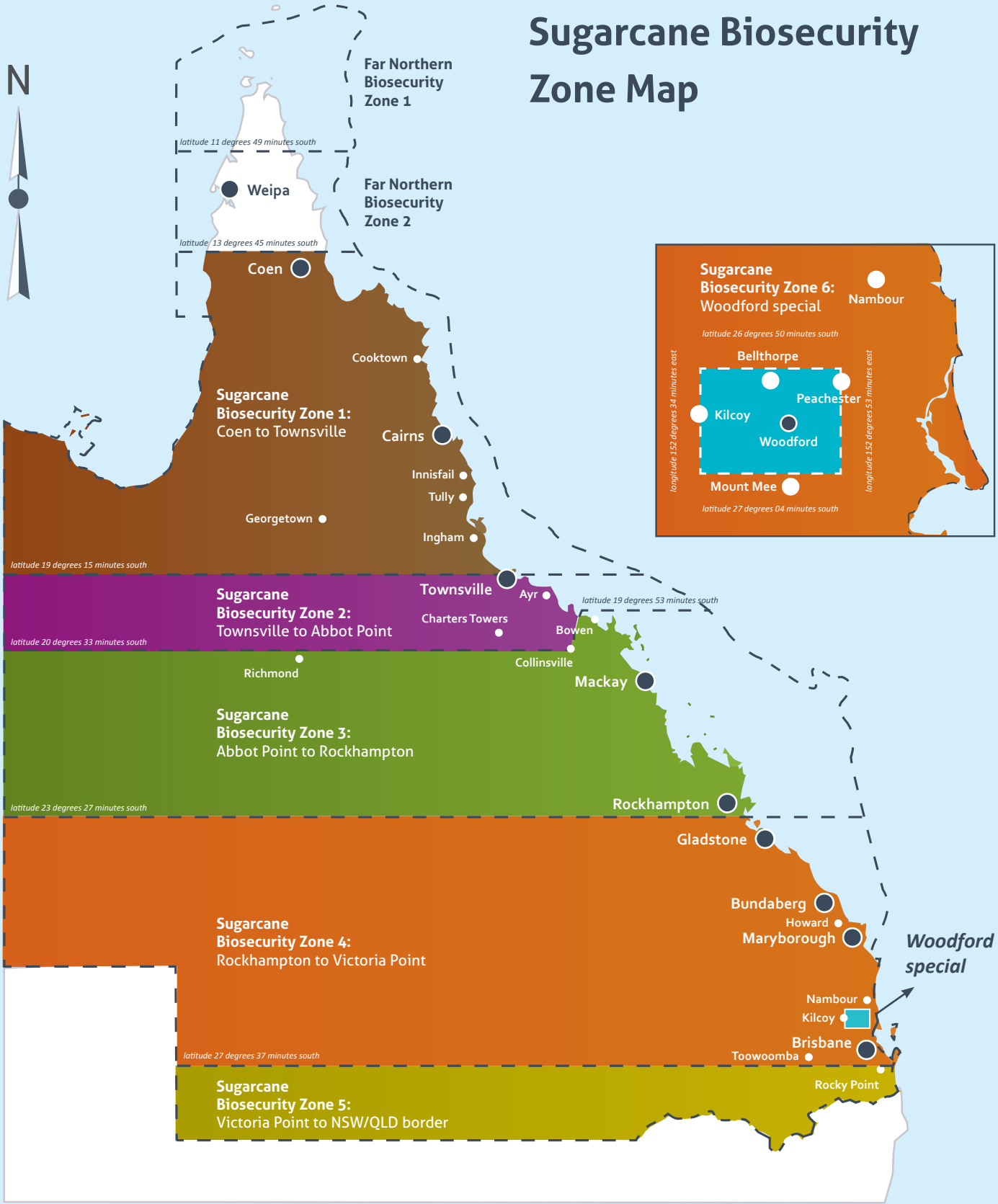
Regional Variety Committees (RVC) have replaced Variety Approval Committees (VAC) in line with changes to Queensland biosecurity legislation. With membership drawn from growers, millers and productivity service groups specific to the region, the RVCs will continue to be responsible for variety release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

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

The Northern RVC (Sugarcane Biosecurity Zone 1) voting membership consists of one grower, miller and productivity services representative from each of the following areas Mossman, Mulgrave, Innisfail/Babinda, Tully and the Tablelands. The Northern RVC requires a majority vote for progression of a variety through the SRA program and a majority vote for the release of a variety.

Contact SRA Northern Variety Officer Rhylee Pendrigh at rpendrigh@sugarresearch.com.au or 0428 876 606 for more information.

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 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).
- Need more information? Check the Biosecurity manual for Sugarcane Producers at: https://sugarresearch.com.au/wp-content/uploads/2017/02/Biosecurity-Manual-for-Sugarcane-Producers_WEB.pdf

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.

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. The cane should be erect with short internodes, so it will have at least two buds per sett when harvested for billets. This can be achieved through reduced fertiliser rates, withholding irrigation or planting late in the season. The cane should be less than one year old when harvesting for good quality billets and also be no more than three years away from long hot water treatment.

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.

Need more information on varieties?

Contact SRA Adoption Officer Tracy Hay

thay@sugarresearch.com.au or 07 4056 4527

Need more information on tissue culture?

Contact SRA Tissue Culture Manager Clair Bolton

cbolton@sugarresearch.com.au or 07 4783 8619

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 ratoon stunting disease, 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 2017**	**1 July 2018**
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 2018.**	Delivery on agreed date between grower, productivity services group and nursery. **Available in March 2019.**

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 @ 1.8 m	0.4	1.1	2.2	4.3

Planting & 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 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 www.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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