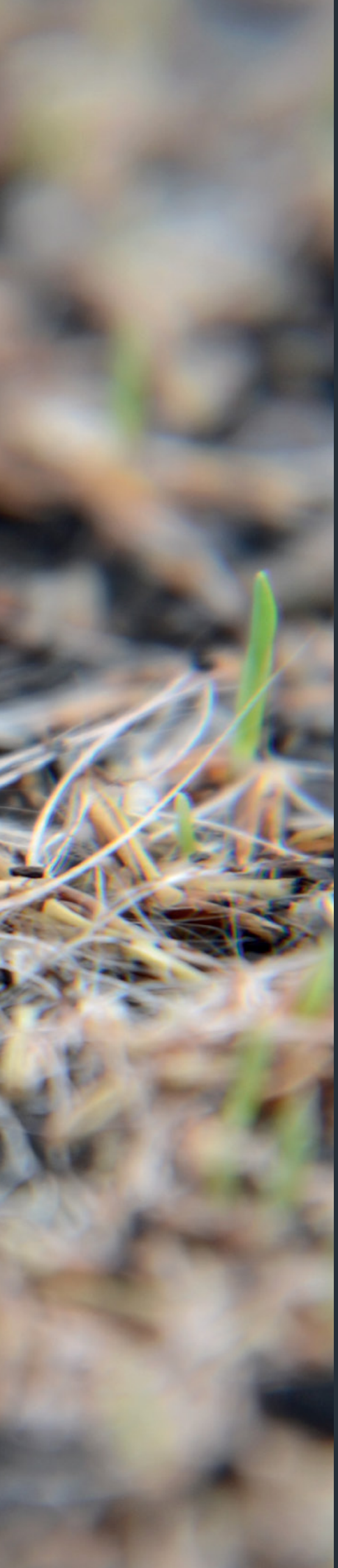
Sugar Research Australia

VARIETY GUIDE 2018/2019

Herbert Region



HOW TO USE THIS GUIDE

This guide is designed to help growers in the Herbert 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

www.sugarresearch.com.au

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NEW & RECENT VARIETIES AVAILABLE IN THE HERBERT 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 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 ***new variety release and regional variety committees***, please visit the SRA website: ***www.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 various standard varieties.

Variety: SRA14Φ QC02-402		***Parentage:*** *QN91-295 X Q200Φ* **/** ***Summary:*** *Lower tonnes cane; equal CCS*								
TRIAL HARVEST YEAR	**CROP CLASS**	**YIELD (TCH)**				**CCS**				**# OF HARVESTS**
		SRA14Φ	**Q208Φ**	**Q200Φ**	**Q240Φ**	**SRA14Φ**	**Q208Φ**	**Q200Φ**	**Q240Φ**	
(2011 series FATs): 2012	Plant	74	70	67		16.2	16.3	16.2		3
2013	1R	65	66	64		16.8	16.8	16.7		3
2014	2R	62	65	64		15.8	16.6	16.2		3
(2013 series FATs): 2014	Plant	78	88	85	80	14.9	15.1	15.4	15.1	2
2015	1R	72	83	74	71	16.1	16.2	15.5	16.7	2
2016	2R	78	91	82	83	13.5	14.1	13.9	14.1	2
(2014 series FATs): 2015	Plant	75	89	79	76	16.3	16.2	16.3	16.3	4
2016	1R	101	101	102	103	16.9	16.9	17	16.7	4
2017	2R	90	87	92	93	15.9	15.8	16.1	15.9	4
(2015 series FATs): 2016	Plant	91	99	96	93	17.0	17.2	16.9	16.7	4
2017	1R	88	94	98	92	16.3	15.9	16.5	16.5	4
Overall performance		**81**	**86**	**84**	*	**16.1**	**16.2**	**16.2**	*	**35**
Available 2019										
Comments:		SRA14Φ has intermediate resistance to smut and is resistant to leaf scald and pachymetra. This variety has lower TCH when compared with the trial standards and similar CCS to trial standards. *Q240Φ was only evaluated in the 2013, 2014 and 2015 series FAT and can only be compared against those particular plant and ratoon crops. Percent fibre across all trials and crop classes 12.3%.								

Variety: SRA10Φ	QN06-807	*Parentage:* QN92-157 X QN91-3898 / *Summary:* Lower tonnes cane; higher CCS.								
TRIAL HARVEST YEAR	CROP CLASS	YIELD (TCH)				CCS				# OF HARVESTS
		SRA10Φ	Q208Φ	Q200Φ	Q240Φ	SRA10Φ	Q208Φ	Q200Φ	Q240Φ	
(2012 series FATs): 2013	Plant	88	97	90	84	16.4	15.7	15.4	16.0	4
2014	1R	73	83	72	71	16.2	16.1	15.6	15.8	4
2015	2R	83	97	88	85	16.4	16.4	16.0	16.3	4
(2014 series FATs): 2015	Plant	73	89	79	76	16.3	16.2	16.3	16.3	4
2016	1R	89	101	102	103	17.3	16.9	17.0	16.7	4
2017	2R	74	87	92	93	16.4	15.8	16.1	15.9	4
(2016 series FATs): 2017	Plant	83	79	90	88	17.3	16.2	16.7	16.7	3
Overall performance		**80**	**91**	**87**	**86**	**16.6**	**16.2**	**16.1**	**16.2**	**27**
Available 2019										
Comments:		SRA10Φ results are from the 2012, 2014 and 2016 FAT series (1R & 2R data from 2016 series still being collected). Lower cane yields were observed when compared to commercial standards. CCS trial results for SRA10Φ were consistenly higher than current trial standards. Resistant to leaf scald; intermediate resistance to smut and Pachymetra root rot. Percent fibre across all trials and crop classes 13.1%.								

Variety: SRA5Φ	QN06-807	*Parentage:* H72-8597 X QN89-109 / *Summary:* Higher tonnes cane; lower CCS								
TRIAL HARVEST YEAR	CROP CLASS	YIELD (TCH)				CCS				# OF HARVESTS
		SRA5Φ	Q208Φ	Q200Φ	Q240Φ	SRA5Φ	Q208Φ	Q200Φ	Q240Φ	
(2009 series FATs): 2010	Plant	94	95	86	87	12.8	14.4	14.5	14.9	3
2011	1R	79	66	62	66	14.5	16.2	16.7	16.4	4
2012	2R	79	87	87	85	14.0	16.1	16.5	16.0	3
(2013 series FATs): 2014	Plant	89	81	79	79	14.1	16.5	16.4	16.1	4
2015	1R	91	93	84	83	14.3	16.4	16.1	16.5	4
2016	2R	78	80	73	73	12.6	15.1	14.9	15.0	4
(2014 series FATs): 2015	Plant	83	89	79	76	13.7	16.2	16.3	16.3	4
2016	1R	109	101	102	103	14.7	16.9	17.0	16.7	4
2017	2R	95	87	92	93	13.6	15.8	16.1	15.9	4
(2015 series FATs): 2016	Plant	99	99	96	93	14.9	17.2	16.9	16.7	4
2017	1R	98	94	98	92	14.0	15.9	16.5	16.5	4
(2016 series FATs): 2017	Plant	88	92	100	91	13.7	16.2	16.0	16.3	2
Overall performance		**91**	**89**	**86**	**87**	**13.9**	**16.1**	**16.2**	**16.2**	**44**
Available 2016										
Comments:		SRA5Φ has intermediate resistance to smut, is intermediate-resistant to leaf scald and has an intermediate-susceptible rating for pachymetra. This variety compares well with the trial standards returning above average TCH. Below average CCS, -2.0 units less than the current standards and percent fibre 3.2 units greater than the current standards at 16.6%, equivalent to MQ239.								

SRA14[Φ]

SRA10[Φ]

SRA5[Φ]

Varieties form the foundation of SRA's work to improve the profitability, productivity, sustainability of Australia's sugarcane industry. Every year SRA plants around 100,000 new seedlings as potential varieties for the future.

For more information on *variety field trials* contact:

Herbert Plant Breeder
Dr Fengduo Hu
P 07 4783 8624

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.

Herbert Disease Ratings

VARIETY	REGION	SMUT	PACHYMETRA	LEAF SCALD	CHLOROTIC STREAK	ORANGE RUST	BROWN RUST	RSD	RED ROT	YELLOW SPOT	FIJI LEAF GALL	MOSAIC
SRA14Φ	HW, HD	I	R	R		R			R		S	R
SRA10Φ	HW, HD	I	I	R		R			I		S	S
SRA5Φ	HW, HD	I	I-S	I-R		R	R	I	R		I	R
SRA3Φ	HW, HD	I-S	I-S	I		R	R	S	I-R		S	R
Q253Φ	HW, HD	R	I	R		R	I-S	S	I	S	S	R
Q252Φ	HW	I	I	R		R		I-R	R	I	I	R
Q250Φ	HW, HD	R	I-S	R		I		I-R	I	I-R	S	I-R
Q247Φ	HW, HD	I	R	R		R		S	R	S	R	R
Q242Φ	HW, HD	I	R	R	I	R		S	I-R	R	R	R
Q240Φ	HW, HD	R	I	R	I-R	R		I-R	R	I	I-S	R
Q238Φ	HW, HD	R	R	R	S	R	R	I	I-R	S	I-R	R
Q237Φ	HW, HD	I	I-S	I			R	I	I		I	R
Q232Φ	HW, HD	R	I	R	R	R		I	I-R	R	I	R
Q231Φ	HW, HD	I-R	R	I-R		R		I-R	R	I	S	I-R
Q226Φ	HW, HD	R	I-R	R		R	I-S	I	R	R	R	R
Q215Φ	HD	I-S	R	R		R	R	I-S	R	R	R	R
Q208Φ	HW, HD	I-R	I	R	R	R	R	I-R	R	R	I-S	R
Q200Φ	HW, HD	R	I	R	I	R	R	I-R	R	I-R	I	R
Q190Φ	HW, HD	I	R	R		R	I-R	I-R	R	I-S	R	R
Q183Φ	HW, HD	I-R	R	I	S	R	R	I	I	I-S	R	R
MQ239Φ	HW, HD	R	I	R		R		I-R	I-R	I	S	
KQ228Φ	HW, HD	R	I	R	S	R	R	S	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 **www.sugarresearch.com.au**

- Resistant **(R)**
- Resistant -Intermediate **(I-R)**
- Intermediate **(I)**
- Intermediate- Susceptible **(I-S)**
- Susceptible **(S)**

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.

Herbert Harvest Management

VARIETY	TRASHING	LODGING TOLERANCE	HERBERT WET ZONE			HERBERT DRY ZONE		
			EARLY SUGAR	MID SUGAR	LATE SUGAR	EARLY SUGAR	MID SUGAR	LATE SUGAR
SRA14Φ	Free-Average	Unknown	Average	Good	Average	Average	Good	Average
SRA10Φ	Average	Good	Good	Good	Good	Good	Good	Good
SRA5Φ	Free-Average	Unknown	Poor	Poor	Poor	Poor	Poor	Poor
SRA3Φ	Free-Average	Average	Poor	Average	Good	Poor	Average	Good
Q253Φ	Free-Average	Good	Poor	Average	Average	Poor	Average	Average
Q252Φ	Free	Average	Average	Good	Good	NA	NA	NA
Q250Φ	Free-Average	Average	Good	Good	Good	Good	Good	Good
Q247Φ	Free-Average	Unknown	Good	Good	Good	Good	Good	Good
Q242Φ	Tight	Unknown	Average	Average	Poor	Average	Poor	Poor
Q240Φ	Free-Average	Average	Average	Good	Good	Average	Good	Good
Q238Φ	Free-Average	Good	Average	Average	Average	Average	Average	Average
Q237Φ	Tight	Good	Good	Average	Average	Good	Good	Poor
Q232Φ	Free-Average	Average	Poor	Average	Average	Poor	Average	Average
Q231Φ	Tight	Average	Good	Average	Average	Good	Average	Average
Q226Φ	Average	Average	Average	Average	Poor	Average	Average	Poor
Q215Φ	Unknown	Average	NA	NA	NA	Poor	Average	Average
Q208Φ	Free	Average	Good	Good	Good	Good	Good	Good
Q200Φ	Free	Average	Good	Good	Good	Good	Good	Good
Q190Φ	Free	Good	Average	Average	Poor	Average	Average	Poor
Q183Φ	Free-Average	Average	Average	Good	Average	Average	Good	Average
MQ239Φ	Unknown	Average	Average	Average	Average	Average	Average	Average
KQ228Φ	Free-Average	Average	Good	Good	Poor	Good	Good	Poor

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.

- Good
- Average
- Low
- Poor
- Unknown

Trashing

- Free
- Free-Average
- Average
- Average-Tight
- Tight

VARIETY ADOPTION IN THE HERBERT REGION

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).

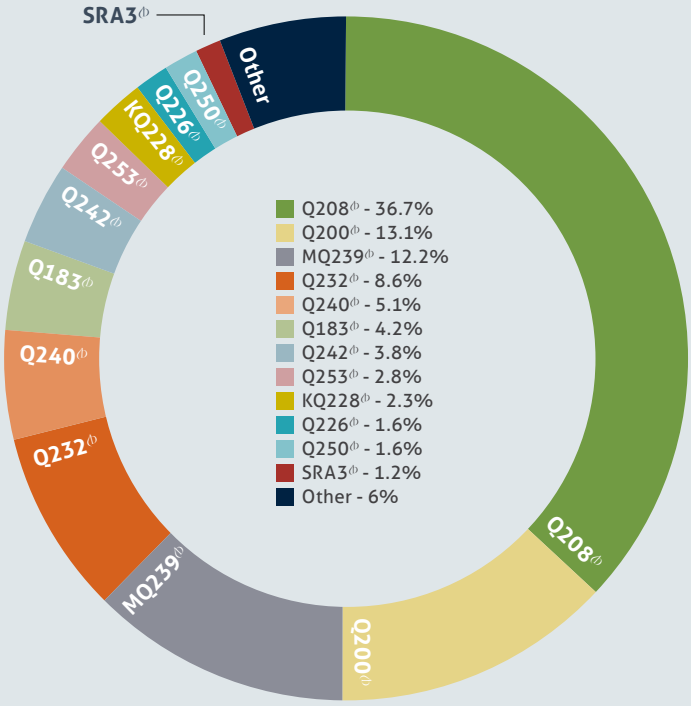
Herbert (% TONNES 2017)

The Herbert region harvested 5,033,396 tonnes of cane from 57,120 hectares in 2017. Mill average CCS was 12.95 and TCH was 88.

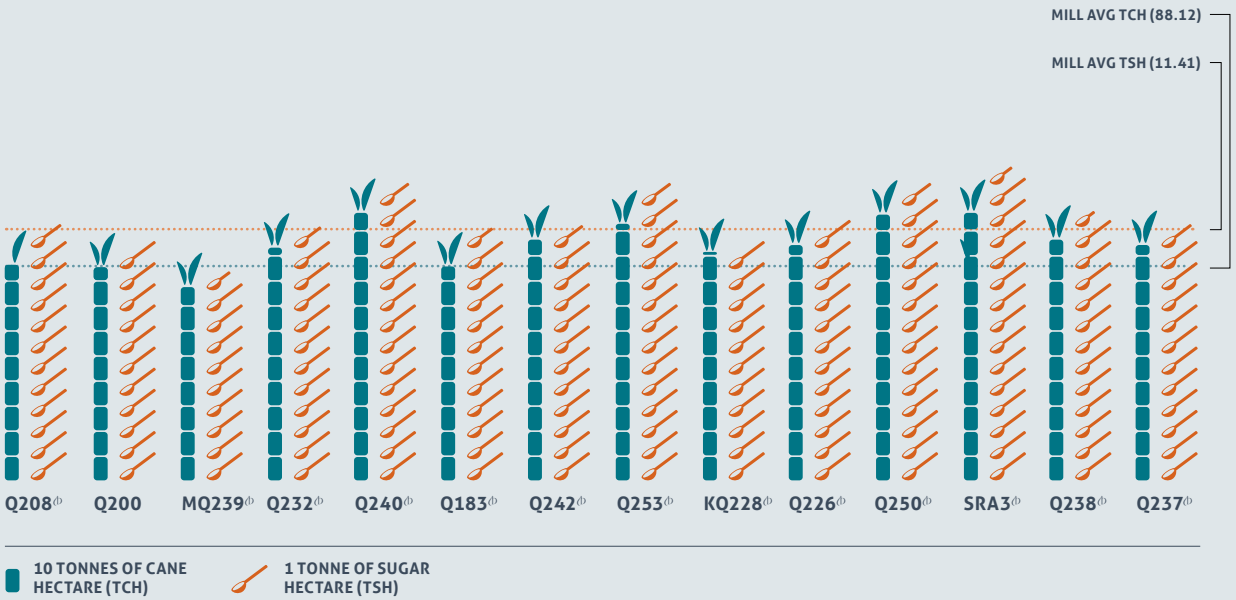
Q208Ф remains the most favoured variety in the Herbert accounting for 36.7% of the total tonnes harvest. Q200Ф declined to 13.1% of the total 2017 harvest. Q232Ф and Q183Ф remained stable at 8.6% & 4.2% respectively. Q240Ф increased from 3% to 5.1%. Q253Ф increased to 2.8%.

SRA3Ф, Q253Ф, Q250Ф, Q240Ф all performed well above mill average for TCH and CCS. SRA5Ф also performed well above average but this is a young cane with a limited sample size.

KQ228Ф, Q183Ф and Q208Ф all performed around mill average TCH.



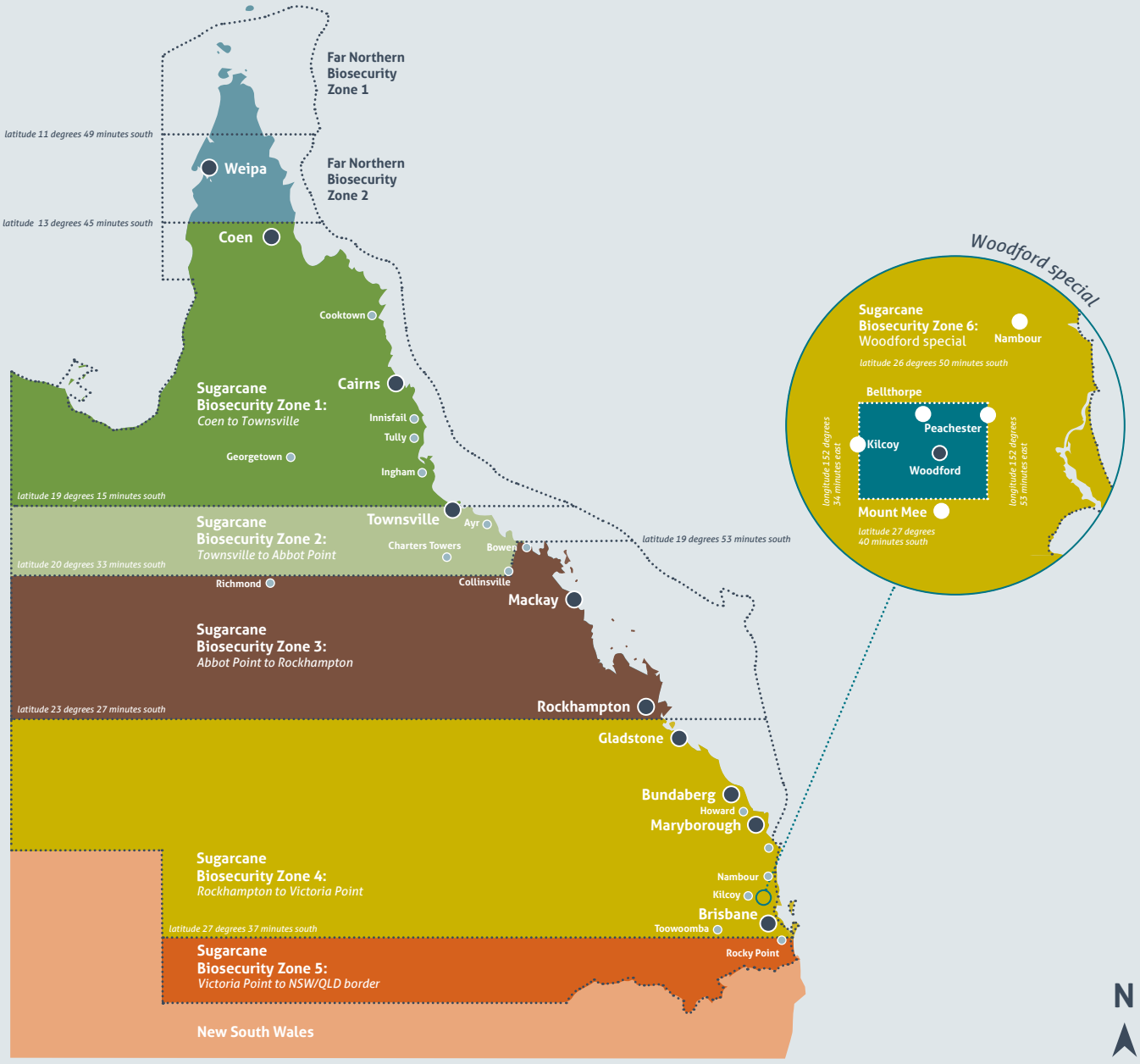
(TCH & TSH 2017)



The top five Australian varieties in 2017 were Q208Ф, Q183Ф, Q240Ф, KQ228Ф, and Q232Ф, representing a combined 73 percent of the entire crop.

For more information please visit:
www.sugarresearch.com.au

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.

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

HCPSL Variety Development Officer, Sam Sellick
E 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 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 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 2018	1 July 2019
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 2019.	Delivery on agreed date between grower, productivity services group and nursery. Available in March 2020.

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 *varieties*, contact:
SRA Adoption Officer **Tracy Hay**
E thay@sugarresearch.com.au **T** 07 4056 4527

For more information on *tissue culture*, contact:
SRA Tissue Culture Manager **Clair Bolton**
E cbolton@sugarresearch.com.au **T** 07 4783 8619

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 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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