

VARIETY GUIDE 2023/2024

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 on the following pages will help you to 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. Visit sugarresearch.com.au or scan the QR code.



(Cover page) Herbert commercial sugarcane area.
(Left) Planting introgression seedlings.

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NEW AND RECENT VARIETIES AVAILABLE IN THE HERBERT REGION

Variety Recommendation and Release Process

Variety release decisions, in each sugarcane region, are the responsibility of Regional Variety Committees (RVC) with membership drawn from growers, millers and productivity service groups specific to the region. SRA supports these groups with secretariat support and the provision of technical information to assist the RVC to make 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 grower’s voting representatives

from CANEGROWERS (2 votes), ACFA, AgForce and HCQR Collectives (1 vote). Three votes for the miller’s representatives from Wilmar (3 votes). The Herbert RVC requires a majority vote for progression of a clone through the SRA breeding program and a unanimous vote for the release of a new variety.

New Variety

SRA40

SRA40 was approved for release at the 2023 Herbert RVC meeting and will be available as seed cane in 2025. Growers who wish to order tissue culture cane for delivery in 2024, please contact Herbert Cane Productivity Services Ltd (HCPSL) on 07 4776 1808 or Rhiannan Harragan (HCPSL Field Officer) on 0400 558 766.

Recently Released Varieties:

SRA36[Ⓢ] and SRA6[Ⓢ]

SRA36[Ⓢ] and SRA6[Ⓢ] were approved for release at the 2022 Herbert RVC meeting and will be available as seed cane in 2023 and 2024.

SRA31[Ⓢ]

SRA31[Ⓢ] was approved for release in 2021 and seed cane will be available to growers through HCPSL in 2023.

SRA26[Ⓢ] and SRA28[Ⓢ]

SRA26[Ⓢ] and SRA28[Ⓢ] were approved for release in 2020 at the Herbert RVC meeting and will be available to growers through HCPSL approved seed cane plots in 2023.

For growers who wish to order any of these varieties as tissue culture please contact HCPSL on 07 4776 1808.

The limited trial results obtained in the Herbert region for SRA40, SRA36[Ⓢ], SRA6[Ⓢ], SRA31[Ⓢ], SRA28[Ⓢ] SRA26[Ⓢ], along with other recent releases WSRA24[Ⓢ] are presented in the tables below and over the following pages.

If you would like more information on new variety releases and regional variety committees, visit the SRA website: sugarresearch.com.au or scan the QR code.



Variety: SRA40			Parentage: CP70-1547 X QA96-1492 / Summary: High TCH; low CCS									
TRIAL HARVEST YEAR	CROP CLASS	YIELD (TCH)					CCS					# OF HARVESTS
		SRA40	Q200	Q208 [Ⓢ]	Q232 [Ⓢ]	Q240 [Ⓢ]	SRA40	Q200	Q208 [Ⓢ]	Q232 [Ⓢ]	Q240 [Ⓢ]	
(2016 series FATs): 2017	Plant	106	88	82	92	88	15.1	16.8	16.3	14.5	16.7	3
2018	1R	94	77	81	83	81	16.2	17.8	18.0	16.4	17.7	3
2019	2R	77	64	68	62	72	16.1	17.0	17.4	15.7	16.9	3
(2018 series FATs): 2019	Plant	97	92	96	91	88	15.1	17.0	17.3	15.8	16.8	3
2020	1R	80	84	85	90	78	15.7	17.1	17.2	16.3	17.0	3
2021	2R	84	85	84	86	83	16.8	17.8	17.8	16.9	17.7	3
Overall performance		90	83	83	85	82	15.8	17.3	17.4	16.0	17	18
Available from 2025 through HCPSL approved seed cane plots												
Comments:	SRA40 has shown a sugar yield advantage over Q232 [Ⓢ] (5%) and similar to Q200 and Q240 [Ⓢ] in SRA field trials. SRA40 has shown a lower CCS than Q200, Q208 [Ⓢ] and Q240 [Ⓢ] , but similar to that of Q232 [Ⓢ] . SRA40 has a cane yield advantage over Q200 (8%), Q208 [Ⓢ] (8%), Q232 [Ⓢ] (6%) and Q240 [Ⓢ] (9%). This advantage was consistent across most crop classes and trial locations representing Herbert's main soils and growing environments. SRA40 has a good disease resistance profile to the Herbert major diseases: smut, Pachymetra and leaf scald, making it a profitable variety of choice for growers. Limited observation in the Herbert trials indicates that SRA40 has low arrowing and suckering. SRA40 is a reliable germinator with a moderate stalk population and medium barrel, presenting a distinctive reddish to light green stalks. SRA40 has medium tight trash and a clean erect canopy. SRA40 has an erect compact stool with an erect growth habit providing good harvesting presentation. Brown rust has been observed in this variety in 2022 (Mackay) with a reaction similar to Q253 [Ⓢ] . The affected plants recovered from it later in the growing season.											

Variety: SRA36 [Ⓢ] QA07-2978			Parentage: QN80-3425 X Q142 / Summary: High TCH; low CCS									
TRIAL HARVEST YEAR	CROP CLASS	YIELD (TCH)					CCS					# OF HARVESTS
		SRA36 [Ⓢ]	Q200	Q208 [Ⓢ]	*Q232 [Ⓢ]	Q240 [Ⓢ]	SRA36 [Ⓢ]	Q200	Q208 [Ⓢ]	*Q232 [Ⓢ]	Q240 [Ⓢ]	
(2014 series FATs): 2015	Plant	79	79	89		76	15.7	16.3	16.2		16.3	4
2016	1R	107	102	101		103	16.4	17.0	16.9		16.7	4
2017	2R	96	92	87		93	15.3	16.1	15.8		15.9	4
(2016 series FATs): 2017	Plant	105	89	82	92	88	15.9	16.7	16.3	14.5	16.7	3
2018	1R	91	79	81	83	81	17.0	17.9	18.0	16.4	17.7	3
2019	2R	78	67	68	62	72	16.6	16.9	17.4	15.7	16.9	3
(2017 series FATs): 2018	Plant	103	98	91	97	89	16.7	17.2	17.7	16.3	17.7	4
2019	1R	95	87	88	88	89	16.2	17.4	17.2	15.6	16.9	4
2020	2R	75	74	74	82	71	16.7	17.3	17.6	16.5	17.4	4
(2018 series FATs): 2019	Plant	103	92	96	91	88	15.9	17.0	17.3	15.8	16.8	4
2020	1R	91	84	85	90	78	15.9	17.1	17.2	16.3	17.0	4
2021	2R	84	85	84	86	83	16.6	17.8	17.8	16.9	17.7	4
Overall performance		92	86	85		84	16.2	17.1	17.1		17	45
Available through HCPSL approved seed cane plots												
Comments:	<p>SRA36[Ⓢ] has shown a sugar yield advantage over Q200 (2%), Q208[Ⓢ] (2%), Q240[Ⓢ] (4%) and *Q232[Ⓢ] (6%) in SRA field trials. SRA36[Ⓢ] has shown a 5% lower CCS than Q200, Q208[Ⓢ] and Q240[Ⓢ], but has a cane yield advantage over Q200 (7%), Q208[Ⓢ] (7%), and Q240[Ⓢ] (8%). This advantage was consistent across most crop classes and trial locations representing Herbert’s main soils and growing environments. SRA36[Ⓢ] has a good disease resistance profile to the Herbert major diseases: smut, Pachymetra and leaf scald, making it a profitable variety of choice for growers. SRA36[Ⓢ] is a reliable germinator with a moderate stalk population and thick barrel, presenting a distinctive reddish to light purple stalk and leaf sheath. SRA36[Ⓢ] has medium tight trash and a clean semi-erect canopy offering good closure for weed control. SRA36[Ⓢ] has a compact stool with an erect growth habit providing a good harvester presentation. Given favourable growing conditions, SRA36[Ⓢ] can develop as an outstanding tall crop but may lodge due to its tall and heavy stalks. Initial maturity sampling data suggests SRA36[Ⓢ] is best harvested mid or late in the season (see CCS profiles). Maturity testing or use of crop ripeners will help maximise its CCS returns as it is a low CCS variety compared to other major commercial varieties. Patches of red stripe top rot were observed in this variety in 2022. This disease is of rare occurrence in the Herbert, only in very hot and wet summers with the affected plant recovering from it later in the growing season.</p> <p>*Q232[Ⓢ] only for comparison to the individual crop classes and sugar yield in the 2016, 2017, and 2018 FAT series.</p>											

Variety: SRA6 [Ⓢ] QN05-507		Parentage: QN80-3425 x QH93-1197 / Summary: Lower CCS; similar TCH										
TRIAL HARVEST YEAR	CROP CLASS	YIELD (TCH)					CCS					# OF HARVESTS
		SRA6 [Ⓢ]	Q200	Q208 [Ⓢ]	*Q232 [Ⓢ]	*Q240 [Ⓢ]	SRA6 [Ⓢ]	Q200	Q208 [Ⓢ]	*Q232 [Ⓢ]	*Q240 [Ⓢ]	
(2011 series FATs): 2012	Plant	121	109	117			15.8	15.9	15.9			1
2013	1R	106	99	103			16.7	16.9	17.4			1
2014	2R	106	98	99			15.2	15.7	15.6			1
(2013 series FATs): 2014	Plant	76	80	79	88	84	14.7	15.8	16.0	14.8	15.4	2
2015	1R	83	84	91	89	82	14.7	15.6	16.2	15.2	16.2	2
2016	2R	71	76	89	84	80	11.8	12.9	13.2	11.8	13.2	1
(2016 series FATs): 2017	Plant	76	89	82	92	88	15.6	16.7	16.3	14.5	16.7	3
2018	1R	80	79	81	83	81	17.4	17.9	18.0	16.4	17.7	3
2019	2R	75	67	68	62	72	16.8	16.9	17.4	15.7	16.9	3
Overall performance		88	87	90			15.4	16.1	16.2			17
Available from 2022 through HCPSL approved seed cane plots												
Comments:	<p>SRA6[Ⓢ] was released in 2022 in the Herbert with strong ratoon performance being a notable feature. SRA6[Ⓢ] has shown slightly lower to similar cane yield to Q208[Ⓢ], Q200 and Q240[Ⓢ]. SRA6[Ⓢ] cane yield has shown to be sustained after plant crop, indicating that SRA6[Ⓢ] may provide growers with sustained ratoonability. Indication are that SRA6[Ⓢ] may be more suitable to grow in the district’s wet zones than those with poor/dry conditions. SRA6[Ⓢ] has lower CCS than that of Q200, Q208[Ⓢ] and Q240[Ⓢ] but similar to Q232[Ⓢ]. SRA6[Ⓢ] has a good disease resistance profile to the Herbert major diseases: smut, Pachymetra, and leaf scald, potentially making it a profitable variety of choice for growers.</p> <p>The germination of SRA6[Ⓢ] is rapid, but initial growth can be slow. Arrowing is sparse. The stalks of SRA6[Ⓢ] are short with high stalk density compared to other varieties. SRA6[Ⓢ] has a clean upright canopy with free-average trash. Because of its slow growth, it is recommended to be harvested mid to late season.</p> <p>*Q232[Ⓢ] and *Q240[Ⓢ] only for comparison to individual crops classes in the 2013 and 2016 FAT series.</p>											



NEW AND RECENT VARIETIES AVAILABLE IN THE HERBERT REGION (CONT)

Variety: SRA31 [Ⓢ] QC05-1281			Parentage: QS87-7427 X QC82-954 / Summary: Similar TCH; Slightly higher CCS									
TRIAL HARVEST YEAR	CROP CLASS	YIELD (TCH)					CCS					# OF HARVESTS
		SRA31 [Ⓢ]	Q200	Q208 [Ⓢ]	*Q232 [Ⓢ]	Q240 [Ⓢ]	SRA31 [Ⓢ]	Q200	Q208 [Ⓢ]	*Q232 [Ⓢ]	Q240 [Ⓢ]	
(2014 series FATs): 2015	Plant	77	70	83		70	16.8	16.1	16.2		16.3	3
2016	1R	99	98	98		105	16.3	16.7	16.7		16.3	3
2017	2R	79	82	78		88	15.3	15.9	15.6		15.8	3
(2016 series FATs): 2017	Plant	93	89	82	92	88	16.9	16.7	16.3	14.5	16.7	3
2018	1R	79	79	81	83	81	18.5	17.9	18.0	16.4	17.7	3
2019	2R	64	67	68	62	72	17.0	16.9	17.4	15.7	16.9	3
Overall performance		82	81	81		84	16.8	16.7	16.7		16.6	18
Available from 2023 through HCPSL approved seed cane plots												
Comments:		<p>SRA31[Ⓢ] was released in the Herbert in 2021. SRA31[Ⓢ] has shown a sugar yield similar to Q200, Q208[Ⓢ] and Q240[Ⓢ] in the Herbert SRA trials. The cane yield of SRA31[Ⓢ] is similar to Q200 and Q208[Ⓢ] and slightly lower than Q240[Ⓢ]. Initial maturity sampling data suggests SRA31[Ⓢ] has shown a CCS advantage over standards varieties in the early to mid-season from plant and ratoon crops (see CCS profiles), which was consistent across the SRA Herbert trial locations. SRA31[Ⓢ] has shown an good disease resistance profile to the Herbert major diseases: smut¹, Pachymetra, and leaf scald.</p> <p>SRA31[Ⓢ] is a reliable germinator and has an erect growth habit and an open stool with fair presentation for harvesting. SRA31[Ⓢ] has a more erect canopy than Q200, which provides better closure for controlling of weeds. Trash is average-tight, protecting the slightly bulged eyes, and making it suitable for billet planting. Field observation indicates that SRA31[Ⓢ] may be less sensitive to waterlogging than other varieties. SRA31[Ⓢ] may be a competitive variety option to replace Q250[Ⓢ] as an early harvest season.</p> <p>*Q232[Ⓢ] is only for comparison to the individual crop classes in the 2016 FAT series and not included in the overall comparison.</p> <p>¹ In 2022, SRA31[Ⓢ] manifested an unusual secondary smut infection at the HCPSL Stone River and Hamley approved seed blocks. Considerations on the seasonal conditions, timing of herbicide application (2,4-D and Starane), high count of airborne smut innoculum spores has ben considered, among other factors, altered the expression of smut resistance of SRA31[Ⓢ]. Specific field evaluation work will be conducted in 2023 to improve the understanding of the difference in smut incidence in a range of varieties in the Herbert district.</p>										

Variety: SRA28 [Ⓢ] Q508-8776		Parentage: Q233 [Ⓢ] X Q135 / Summary: Similar TCH; Slightly higher CCS										
TRIAL HARVEST YEAR	CROP CLASS	YIELD (TCH)					CCS					# OF HARVESTS
		SRA28 [Ⓢ]	Q200	Q208 [Ⓢ]	Q232 [Ⓢ]	Q240 [Ⓢ]	SRA28 [Ⓢ]	Q200	Q208 [Ⓢ]	Q232 [Ⓢ]	Q240 [Ⓢ]	
(2015 series FATs): 2016	Plant	100	96	99	108	94	17.2	16.9	17.2	15.7	16.6	4
2017	1R	97	97	94	99	95	16.5	16.5	16.0	14.4	16.5	4
2018	2R	94	101	100	97	101	18.3	18.2	18.3	16.9	17.9	4
(2017 series FATs): 2018	Plant	88	98	91	97	89	18.2	17.2	17.7	16.3	17.7	4
2019	1R	91	87	88	88	89	17.4	17.4	17.2	15.6	16.9	4
2020	2R	73	74	74	82	71	17.7	17.3	17.6	16.5	17.4	4
Overall performance		90	92	91	95	90	17.6	17.3	17.3	15.9	17.2	24
Available from 2022 through HCP5L approved seed cane plots												
Comments:		<p>SRA28[Ⓢ] has shown a sugar yield advantage over Q232[Ⓢ] (5%) and Q240[Ⓢ] (3%) and is comparable to Q200 and Q208[Ⓢ] in SRA field trials. SRA28[Ⓢ] cane yield is similar to Q200, Q208[Ⓢ], Q240[Ⓢ] and slightly lower than Q232[Ⓢ], but has a CCS advantage of 10% over Q232[Ⓢ] and similar to that of Q200, Q208[Ⓢ] and Q240[Ⓢ]. The CCS advantage was consistent across crop classes and trial locations which represent the main soils and growing environments of the Herbert. Initial maturity sampling data suggests SRA28[Ⓢ] is best harvested early or mid season (see CCS profiles). SRA28[Ⓢ] has also shown broad adaptability across the Northern coastal and Tableland regions. Field observations suggest that SRA28[Ⓢ] may be less sensitive to waterlogging than other varieties. SRA28[Ⓢ] has a good disease resistance profile and is a profitable variety of choice especially for growers with higher Pachymetra spore counts. SRA28[Ⓢ] initial growth and tillering can be slow, but is a reliable germinator. Observations in the Far North and the Herbert indicate that germination problems may occur with the use of mature planting material, thus the use of young seed cane is advised. It can be sensitive to hot water treatment; and the purchase of approved seed or tissue culture is advised.</p> <p>SRA28[Ⓢ] has a moderate stalk population with good diameter, a distinctive purple leaf sheath, and is moderate trashing. It has a clean green canopy with good closure for weed competition. SRA28[Ⓢ] has a compact stool with an erect habit providing good presentation for harvesting. Suckers in SRA28[Ⓢ] are visibly obvious due to their purple colour; evaluation in the Far North and the Herbert indicates suckering levels are similar to Q240[Ⓢ]. Arrowing in the Far North has been reported as similar to Q200 in an average year, but profuse in favourable conditions.</p>										

Variety: SRA26 [Ⓢ]		QN08-2282	Parentage: QN97-2122 x Q146 / Summary: Similar TCH; slightly higher CCS									
TRIAL HARVEST YEAR	CROP CLASS	YIELD (TCH)					CCS					# OF HARVESTS
		SRA26 [Ⓢ]	Q200	Q208 [Ⓢ]	*Q232 [Ⓢ]	Q240 [Ⓢ]	SRA26 [Ⓢ]	Q200	Q208 [Ⓢ]	*Q232 [Ⓢ]	Q240 [Ⓢ]	
(2014 series FATs): 2015	Plant	77	79	89		76	16.7	16.3	16.2		16.3	4
2016	1R	101	102	101		103	17.4	17.0	16.9		16.7	4
2017	2R	90	92	87		93	15.6	16.1	15.8		15.9	4
(2016 series FATs): 2017	Plant	87	89	82	92	88	16.7	16.7	16.3	14.5	16.7	3
2018	1R	81	79	81	83	81	18.1	17.9	18.0	16.4	17.7	3
2019	2R	71	67	68	62	72	17.3	16.9	17.4	15.7	16.9	3
Overall performance		85	85	85		86	17	16.8	16.8		16.7	21
Available from 2022 through HCPSL approved seed cane plots												
Comments:	<p>SRA26[Ⓢ] has shown similar sugar yield to Q200, Q208[Ⓢ], and Q240[Ⓢ] in SRA field trials. SRA26[Ⓢ] has a higher CCS and equivalent cane yield than Q240[Ⓢ], Q208[Ⓢ] and Q200 across most crop classes and trial locations representing Herbert's main soils and growing environments. Limited field observations suggest that well-drained soils favour its development. SRA26[Ⓢ] has a good resistance profile to the major diseases in the Herbert: smut, Pachymetra and leaf scald, making it a profitable variety of choice for growers with a high Pachymetra spore count. SRA26[Ⓢ] is a reliable germinator. However, slow growth has been observed in the wetter pockets of the paddock. Be aware of its profuse hairs when manual handling. SRA26[Ⓢ] has a semi-prostrate early growth habit, often up to and including at fill-in stage. The yield potential of SRA26[Ⓢ] is not typically affected if tiller damage occurs when filling-in as it is a moderate to high tillering variety. SRA26[Ⓢ] will straighten up to stand erect, providing good presentation for harvesting. SRA26[Ⓢ] has internodes of even length and protected eyes, making it an ideal variety for billet planting. Preliminary experimental results and initial commercial experience suggest SRA26[Ⓢ] has RSD sensitivity similar to Q253[Ⓢ]. Chlorotic streak disease have been observed by HCPSL in clay waterlogged soils. SRA26[Ⓢ] is a very sparse or non-arrowing variety with moderate trashing and does not sucker readily. It will continue to grow steadily throughout the autumn and winter months. Initial maturity sampling data of SRA26[Ⓢ] suggests best harvested mid-to-late season to maximise CCS, similar to Q200. However, if SRA26[Ⓢ] is targeted for harvest early in the season*, then maturity testing or the use of crop ripeners are advised. SRA26[Ⓢ] exhibits similar ratooning ability to Q200 and Q208[Ⓢ].</p> <p>*Q232[Ⓢ] is only for comparison to the individual crop classes in the 2016 FAT series and is not included in the overall comparison.</p> <p>**2022 season Northern commercial mill data suggests SRA26[Ⓢ] has higher sugar yield and cane yield compared to other commercial varieties, with a high CCS early, mid and late season.</p>											

Variety: WSRA24 [Ⓢ] QA05-2486		Parentage: QN80-3425 X BN61-1123 / Summary: Higher TCH; lower CCS										
TRIAL HARVEST YEAR	CROP CLASS	YIELD (TCH)					CCS					# OF HARVESTS
		WSRA24 [Ⓢ]	Q200	Q208 [Ⓢ]	*Q232 [Ⓢ]	Q240 [Ⓢ]	WSRA24 [Ⓢ]	Q200	Q208 [Ⓢ]	*Q232 [Ⓢ]	Q240 [Ⓢ]	
(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	89	82	92	88	15.2	16.7	16.3	14.5	16.7	3
2018	1R	79	79	81	83	81	16.0	17.9	18.0	16.4	17.7	3
2019	2R	60	67	68	62	72	15.8	16.9	17.4	15.7	16.9	3
Overall performance		90	85	85		86	15.4	16.8	16.8		16.7	21
Available from 2020												
Comments:		<p>Released in the Herbert in 2019, WSRA24[Ⓢ] has shown a 6% cane yield advantage over Q200 and Q208[Ⓢ], and 5% over Q240[Ⓢ]. The cane yield advantage is more noticeable in plant crop and first ratoon. WSRA24[Ⓢ] has lower CCS than Q200, Q208[Ⓢ] and Q240[Ⓢ]. WSRA24[Ⓢ] is resistant to smut, Pachymetra, and leaf scald, making it a profitable variety of choice for growers with high Pachymetra spore count and high smut pressure.</p> <p>WSRA24[Ⓢ] is a vigorous and fast germinator compared to current commercial varieties. WSRA24[Ⓢ] has less tendency to arrow and is moderate in suckering. WSRA24[Ⓢ] has a average stalk population at maturity and an erect growth habit. The stalks of WSRA24[Ⓢ] are pale green, tall, and heavy, with an exceptional thick barrel diameter. WSRA24[Ⓢ] has a clean canopy with good closure for weed competition and free-average trash. Its prominent eyes can cause poor germination due to the eyes damaged by planting. It is recommended to use young planting material for even germination. Field observations suggest that WSRA24[Ⓢ] has flood tolerance. WSRA24[Ⓢ] is best harvested mid to late in the season, with better CCS values obtained in the wet zone trials than in the dry zone of the district.</p> <p><i>*Q232[Ⓢ] only for comparison to the individual crop classes in the 2016 FAT series and not included in the overall comparison.</i></p>										

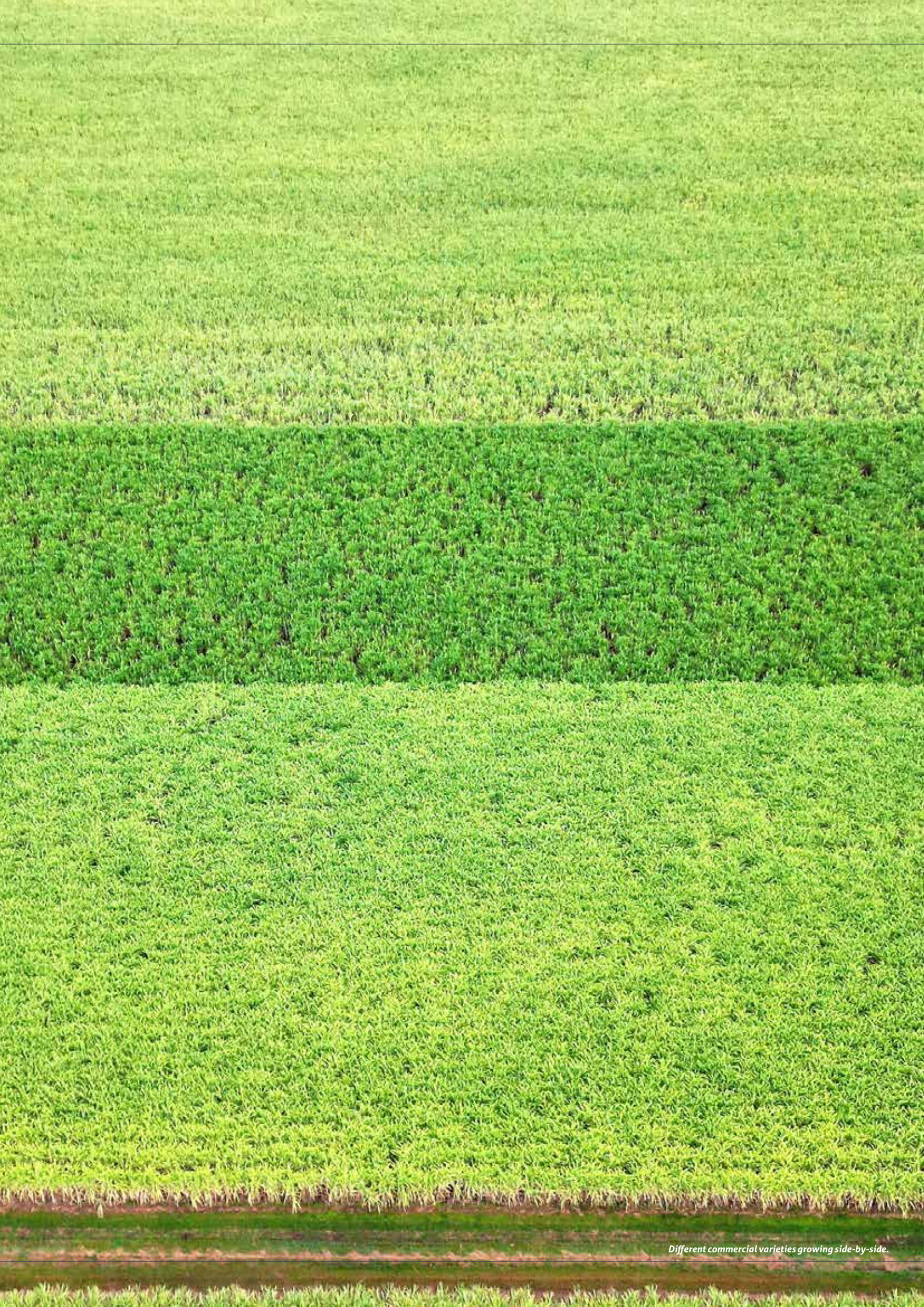


**Other regions released SRA's varieties discarded/
not recommended to be planted in the Herbert**

- SRA7[Ⓛ]: Discarded due to poor performance.
- SRA11[Ⓛ]: Discarded due to milling data issues and poor ratoon ability.
- SRA12[Ⓛ]: Discarded due to fibre quality.
- SRA15[Ⓛ]: Discarded due to smut concerns (severe in ratoons).
- SRA22[Ⓛ]: Discarded due to milling data issues and poor performance.
- SRA37[Ⓛ]: Not recommended for the Herbert due to sugar quality.

For more information on *variety field trials* contact:

SRA Herbert Variety Officer Juan Briceno E jbriceno@sugarresearch.com.au T 07 4776 8205 M 0436 805 142



Different commercial varieties growing side-by-side.



SMUT RATINGS

These 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. Rating confidence will improve as more data is collected. For example, variety Q200[Ⓢ] has been tested in 28 trials for smut resistance and has an 'Intermediate' rating ranging from 4.4 to 5.8, indicated by the narrow confidence interval. The variety WSRA24[Ⓢ] has only been tested in 4 trials and has a 'Resistant' rating ranging from 1.2 to 3.3.



PACHYMETRA RATINGS

The Pachymetra ratings are calculated in the same way as for smut ratings. For example, variety Q200[Ⓢ] has been tested in 38 trials for Pachymetra resistance and has an 'Intermediate' rating with a 95% confidence interval ranging from 4.4 to 5.4. The variety WSRA24[Ⓢ] has only been tested in 4 trials and has a 'Resistant' rating with a 95% confidence interval ranging from 1.4 to 3.9.





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.

Herbert disease ratings											
VARIETY	ZONE	SMUT	PACHYMETRA	LEAF SCALD	CHLOROTIC STREAK	ORANGE RUST	BROWN RUST	RED ROT	YELLOW SPOT	FIJI LEAF GALL	MOSAIC
KQ228 [®]	Wet, Dry	I	I	R	S	R	R	R	I	I	R
MQ239 [®]	Wet, Dry	R	I-R	R		R		I-R	I	S	
Q138 [®]	Wet, Dry	S	R	R	I-R	R	R	I-S	I	R	I-S
Q183 [®]	Wet, Dry	R	R	I	S	R	R	I	I-S	R	R
Q200	Wet, Dry	I	I	R	I	R	R	R	I-R	R	R
Q208 [®]	Wet, Dry	I-R	I	R	R	R	R	R	R	I-S	R
Q215 [®]	Dry	I-S	R	R		R	R	R	R	R	R
Q219 [®]	Wet, Dry	R	R	R		R		R		S	S
Q226 [®]	Wet, Dry	R	I-S	R		R	I-S	R	R	R	R
Q231 [®]	Wet, Dry	R	R	I-R		R		R	I	S	I-R
Q232 [®]	Wet, Dry	I-R	I	R	R	R		I-R	R	I	R
Q240 [®]	Wet, Dry	R	I	R	I-R	R		R	I-S	I-S	R
Q242 [®]	Wet, Dry	I-R	R	R	I	R		I-R	R	R	R
Q247 [®]	Wet, Dry	I-R	R	R		R		R	S	R	R
Q250 [®]	Wet, Dry	R	I	R		I		I	I-R	I-S	I-R
Q252 [®]	Wet, Dry	I-R	I	R		R		R	I	I	R
Q253 [®]	Wet, Dry	R	R	R		R	I-S	I	S	S	R
SRA5 [®]	Wet, Dry	I-R	I	I-R		R	R	R		I	R
SRA6 [®]	Wet, Dry	R	R	R		R		I	I-R	I	R
SRA10 [®]	Wet, Dry	I	I-R	R		R		I	R	S	S
SRA14 [®]	Wet, Dry	I-R	R	R		R		R	I	S	R
WSRA24 [®]	Wet, Dry	R	R	R						I	R
SRA26 [®]	Wet, Dry	R	R	R		R		R	R	I-R	S
SRA28 [®]	Wet, Dry	I-R	R	R		R		R	R	I	R
SRA31 [®]	Wet, Dry	R	R	R		R		R		R	R
SRA36 [®]	Wet, Dry	R	R	R		R		R			R
SRA40	Wet, Dry	R	R	R		R	I-S	R		I	R

* Region recommended

Rotation of Varieties

Rotation of varieties for each crop cycle 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. Visit sugarresearch.com.au or scan the QR code.



NOTE: You will note that Ratoon Stunting Disease (RSD) resistance ratings are not included in this variety guide. Varietal resistance is not one of the three pillars of RSD disease management; growers should continue to ensure that approved seed cane is used to establish crops, that crops are planted into volunteer-free land and the equipment is decontaminated regularly.

No sugarcane varieties are resistant to RSD: they can all become infected, suffer yield losses, and further spread the disease.

Some varieties are more sensitive to RSD and carry significantly higher levels of the bacteria. In situations where RSD is a high risk and hygiene measures are not guaranteed, it may be appropriate to avoid varieties such as KQ228[®] and Q253[®].

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



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 [®]	F-Av	A	G	G	P	G	G	P
MQ239 [®]		A	A	A	A	A	A	A
Q183 [®]	F-Av	A	A	G	A	A	G	A
Q200	F	A	G	G	G	G	G	G
Q208 [®]	F	A	G	G	G	G	G	G
Q215 [®]		A				P	A	A
Q226 [®]	A	A	A	A	P	A	A	P
Q231 [®]		A	G	A	A	G	A	A
Q232 [®]	F-Av	A	P	A	A	P	A	A
Q240 [®]	F-Av	A	A	G	G	A	G	G
Q242 [®]	T		A	A	P	A	P	P
Q247 [®]	F-Av		G	G	G	G	G	G
Q250 [®]	F-Av		G	G	G	G	G	G
Q252 [®]		A	A	G	G			
Q253 [®]		G	P	A	A	P	A	A
SRA5 [®]			P	P	P	P	P	P
SRA6 [®]	T	G	A	A	A	A	A	A
SRA10 [®]	F-Av		G	G	A	G	G	A
SRA14 [®]	F-Av	G	G	A	A	G	A	A
WSRA24 [®]	F-Av	G	A	A	A	P	P	A
SRA26 [®]	F-Av	G	G	G	G	G	G	G
SRA28 [®]	F-Av	A	A	G	G	G	G	G
SRA31 [®]	A	A	G	G	A	G	G	A
SRA36 [®]	F-Av	A	A	A	A	A	A	A
SRA40	A	A	A	A	A	A	A	A

- TRASHING

 - FREE (F)
 - FREE-AVERAGE (F-AV)
 - AVERAGE (A)
 - TIGHT (T)
- OTHER FEATURES

 - GOOD (G)
 - AVERAGE (A)
 - POOR (P)
 - NOT ASSESSED (NA)



VARIETY BY HERBICIDE SCREENING TRIALS

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

Since 2014, SRA has conducted trials following a two-step process to obtain reliable data for the susceptibility of varieties to herbicide. This process is:

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

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

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

In the field trials, plant cane yield is

measured at harvest using a weigh truck.

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

Table 2 describes the phytotoxicity symptoms obtained on KQ228[®] and their expected severity. All varieties present identical symptoms but their severity may vary between varieties.

Tables 3, 4 and 5 summarise all phytotoxicity, biomass and yield results obtained in the pot and field trials from 2014 to 2022.

These tables are updated yearly to include newly tested combinations of varieties by herbicides.

For more information contact:
Emilie Fillols, Weed Scientist
T 07 4056 4510

TABLE 1 EWRC selectivity rating scale

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

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

	2,4-D	AMETRYN	AMETRYN+ TRIFLOXY SULFURON	AMICARBAZONE	ASULAM	DIURON	FLUMIOXAZIN	METOLACHLOR	METRIBUZIN	MSMA
DESCRIPTION OF SYMPTOMS	Small white spotty discolorations	Yellowing of the whole plant	Slight yellow blotching	Small white spotty discolorations	Bright yellow blotching	Slight yellowing of the whole plant	Large necrotic lesions	Small necrotic lesions	Slight yellowing of the whole plant	Large necrotic lesions
PHOTOGRAPH OF SYMPTOMS										
SYMPTOM SEVERITY ON KQ228 [®]	Mild	Medium to severe	Mild	Mild	Medium	Mild	Severe	Medium	Mild	Medium to severe
KQ228 [®] PHYTO RATING RANGE										
	1.2 to 2.3	1.8 to 3.2	1.3	1.3 to 1.8	1.1 to 2.6	1.8 to 2.0	3.9 to 4.1	1.1 to 2.8	1.2 to 2.0	1.7 to 3.8

TABLE 3 Herbicide symptoms severity on the cane foliage for all testing varieties. (Legend: refer to table 1 on the left)

VARIETY	2,4-D	AMETRYN	AMETRYN+ TRIFLOXY-SULFURON	AMICARBA-ZONE	ASULAM	DIURON	FLUMIOXAZIN	METOLACHLOR	METRIBUZIN	MSMA
KQ228 [®]	1.6	1.9	1.7	1.3	1.9	1.3	3.6	2.1	1.5	3.0
Q208 [®]	1.5		1.6		1.8			2.0	1.4	2.9
Q232 [®]	1.6		1.8		1.9			2.2	1.6	3.0
Q240 [®]	1.6		1.7		1.8			2.1	1.5	2.9
Q242 [®]	1.6		1.8		1.9			2.2	1.6	3.0
Q250 [®]	1.6		1.8		1.9			2.2	1.6	3.0
Q252 [®]	1.6		1.7		1.8			2.1	1.5	3.0
Q253 [®]	1.7		1.8		1.9			2.2	1.6	3.0
SRA5 [®]	1.7	2.0			1.9			2.2	1.6	3.0
SRA6 [®]	1.8	2.1		1.5	2.1	1.5		2.3	1.7	3.2
SRA10 [®]	1.5	1.8		1.2	1.7		3.5	2.0	1.4	2.8
SRA14 [®]	1.4	1.8		1.2	1.7		3.5	2.0	1.4	2.8
SRA26 [®]	1.6	2.0		1.4	1.9	1.4		2.2	1.6	3.0
SRA28 [®]	1.7	2.0		1.4	1.9	1.4		2.2	1.6	3.0
SRA31 [®]	1.6	1.9		1.3	1.8	1.3		2.1	1.5	3.0
SRA36 [®]	1.7	2.0		1.4	2.0	1.4		2.2	1.6	3.1

The predicted EWRC scores and associated colour code are presented for each tested combination of herbicides by variety. The predicted EWRC scores derive from the average EWRC scores for each trial series, using KQ228[®] as reference variety, in an attempt to harmonise trial variations as symptom severity can vary between trials: weather conditions at application, and/or during the trial can alter cane growth and herbicide response. Predicted EWRC scores derive from average EWRC scores across the 10-week assessment period, which means higher symptoms intensity and scores could have been observed during the assessment period.

TABLE 4 Percentage sugarcane dry biomass reduction in the pot trial (10 weeks after spraying) compared to the untreated control. (Legend: bottom of page)

VARIETY	2,4-D	AMETRYN	AMETRYN+ TRIFLOXY-SULFURON	AMICARBA-ZONE	ASULAM	DIURON	FLUMIOXAZIN	METOLACHLOR	METRIBUZIN	MSMA
KQ228 [®]	-13%	-46%	-55%	-15%	-16%	-14%	-36%	no reduction	-25%	-21%
Q208 [®]	-29%		-33%		-12%			-51%	-21%	-50%
Q232 [®]	-13%		-42%		-26%			-33%	-13%	-33%
Q240 [®]	-36%		-28%		-41%			-7%	-21%	-37%
Q242 [®]	-14%		-12%		no reduction			no reduction	-7%	-12%
Q250 [®]	-49%		-53%		-66%			-56%	-20%	-63%
Q252 [®]	-38%		-11%		no reduction			-6%	-20%	-26%
Q253 [®]	-29%		-49%		-52%			-18%	-51%	-54%
SRA5 [®]	no reduction	no reduction			no reduction			no reduction	no reduction	no reduction
SRA6 [®]	-22%	-46%		-58%	-5%	-66%		no reduction	-30%	-42%
SRA10 [®]	no reduction	-3%		-6%	no reduction		-29%	-4%	no reduction	-3%
SRA14 [®]	no reduction	-67%		-47%	-4%		-64%	-21%	no reduction	-69%
WSRA24 [®]	-77%	-93%		-29%	-105%	-7%		-14%	-19%	-62%
SRA26 [®]	-35%	-44%		-26%	-27%	-21%		-12%	-34%	-47%
SRA28 [®]	-69%	-90%		-66%	-71%	-29%		-104%	-75%	-103%
SRA31 [®]	-46%	-14%		no reduction	-51%	-29%		-6%	-6%	-25%
SRA36 [®]	-26%	-37%		-2%	-52%	-22%		-17%	-14%	-7%

The predicted biomass reduction in the pot trials is represented in a green-to-red scale. The predicted biomass reduction is derived from the biomass reduction for each trial series, using KQ228[®] as reference variety, in an attempt to harmonise trial variations: weather conditions at application, and/or during the trial can alter cane growth and herbicide response. Predicted biomass reduction compared to the untreated is indicated in the table. The derived predicted biomass reduction values differ from the observed biomass reduction values in each trial series and should only be used as indicators to compare the severity of the treatments on cane growth across all varieties (in some cases the predicted values exceed 100% biomass reduction. It does not mean the death of the treated plant). Severe biomass reductions recorded 10 weeks after spraying are typical, as the plant metabolism has just been diverted into detoxifying the applied herbicide to the detriment of its growth. Usually yield loss by harvest time is less severe as the plant has had more time to recover from its growth delay.

TABLE 5 Percentage yield reduction in the field trial (at harvest) compared to the untreated control. (Legend: bottom of page)

VARIETY	2,4-D	AMETRYN	AMETRYN+ TRIFLOXY-SULFURON	AMI-CARBAZONE	ASULAM	METO-LACHLOR	METRI-BUZIN	MSMA
KQ228	no reduction	-11%		-7%	-1%		no reduction	-1%
Q232 [®]			-6%			no reduction	-4%	-1%
Q242 [®]			no reduction			-3%	-2%	-11%
Q250 [®]			-1%			no reduction	-1%	-5%
SRA6 [®]					-6%		-1%	-6%
SRA14 [®]		-1%						

Legend

% VALUE = BIOMASS/YIELD REDUCTION (-%) OR GAIN (+%) IN THE POT/FIELD TRIAL COMPARED TO THE UNTREATED

COMBINATION OF HERBICIDE BY VARIETY NOT TESTED

SLIGHT BIOMASS/YIELD REDUCTION IN POT/ FIELD TRIAL COMPARED TO UNTREATED

NO BIOMASS/YIELD REDUCTION IN POT/ FIELD TRIAL COMPARED TO UNTREATED

SEVERE BIOMASS/YIELD REDUCTION IN POT/ FIELD TRIAL COMPARED TO UNTREATED

MODERATE BIOMASS/YIELD REDUCTION IN POT/FIELD TRIAL COMPARED TO UNTREATED

CCS PROFILES

SRA started commercial cane sugar (CCS) maturity data collection in 2022. Samples were taken at the SRA Ingham station once a month starting in May until October 2022 and analysed in the Juice Lab.

This information will help growers by optimizing their planting and harvesting decision-making, facilitating the adoption of new varieties by monitoring the CCS curves across productivity zones.

The CCS performance of a variety is, however, influenced by many factors such as crop age, crop class, environment (rainfall, temperature and soil) and management practices. The following data represents a “snapshot” of the past season; further work will be carried out to better understanding the maturity profile of a given variety.

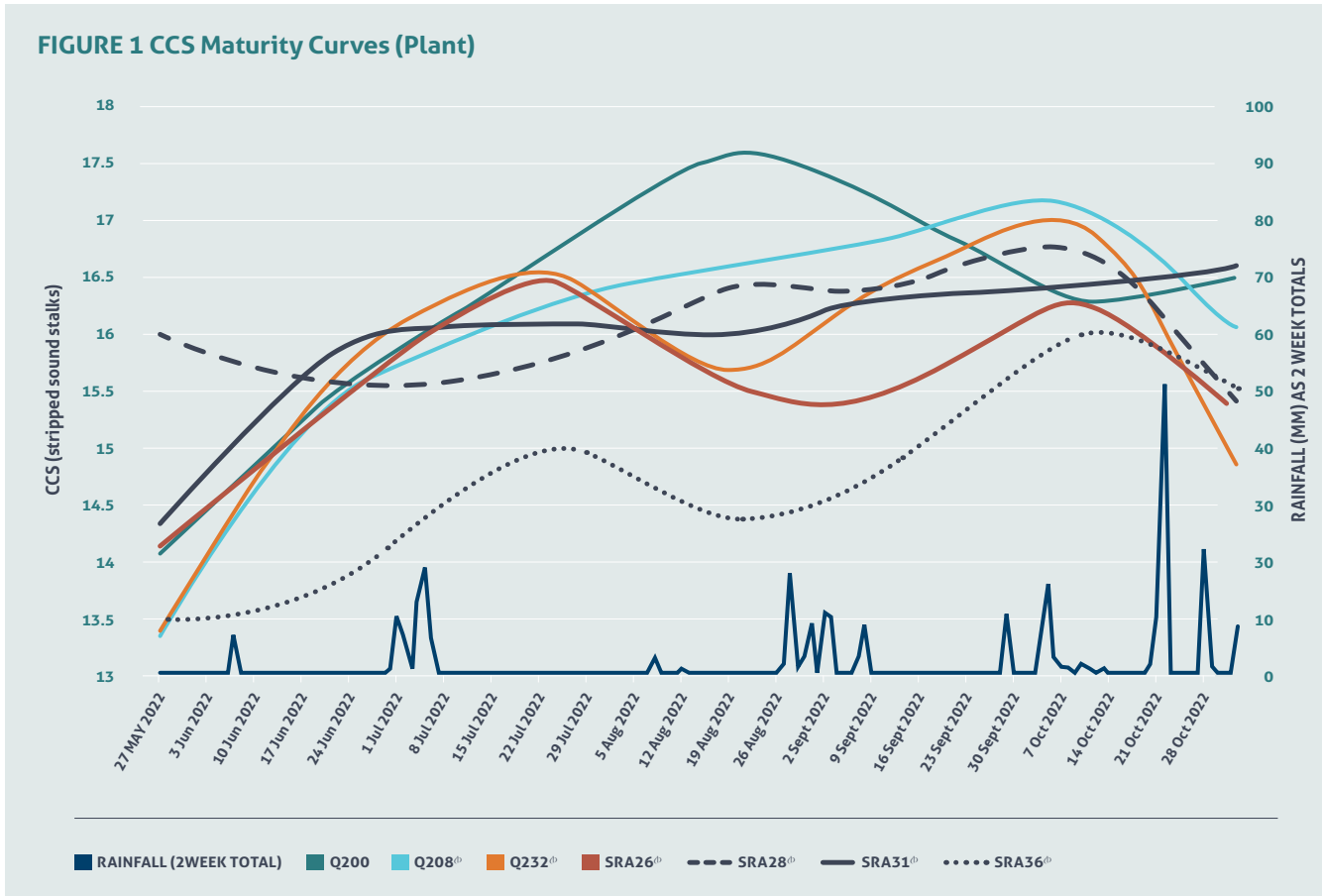


Figure 1 presents the curves for CCS on Plant Crop for the 2022 season.

Q200 presented the highest CCS from mid-July to early September, then declining towards the end of the season.

Q208 presented a sustained CCS increase arriving at its peak in late September, but declining from October.

Q232 presented a slightly high CCS in early-mid July, but drops in August and peaks in late September similar to Q208.

SRA26 CCS peaked in early July and peaked again in October similar to Q232.

SRA28 recorded the highest CCS in May compared to other varieties, and then sustaining a slight CCS growth from August to early October, but declining in mid of October similar to Q232 and Q208.

SRA31 had the highest CCS in mid June, sustaining its CCS to further October without declining after a major rainfall event as occurred with other varieties.

SRA36 recorded the lowest CCS with a sustained CCS increasing towards mid-October similar to Q232. Due to SRA36 badly lodged nature with tall cane, its CCS might be negatively impacted late in harvesting season.

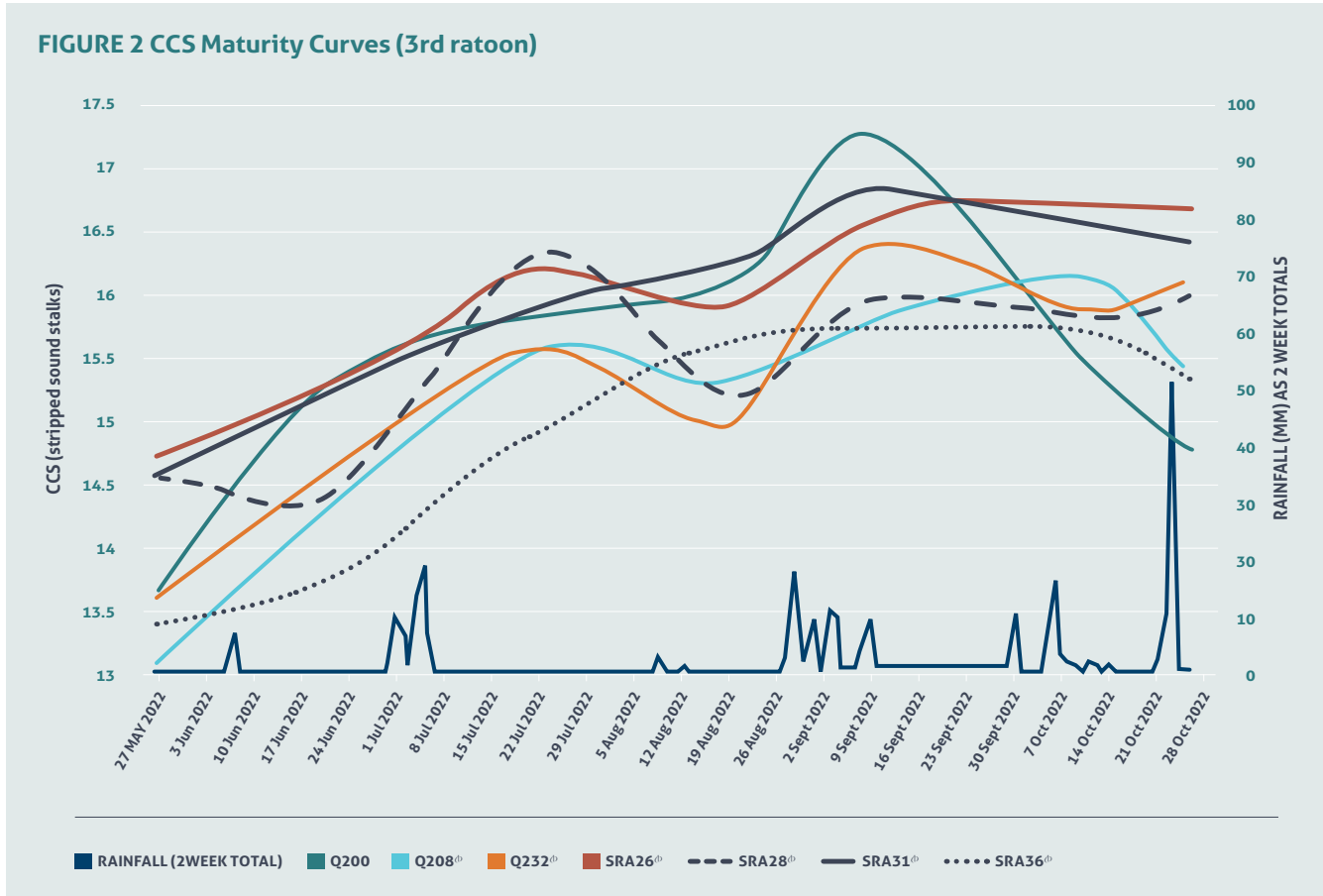


Figure 2 presents curves for CCS on third ratoon during the 2022 season. Q200 presented the highest CCS in September, then declining sharply towards the end of the season. Q208 presented a CCS curve similar to Q232, arriving at its peak in early October, but Q232 CCS peaked in early September.

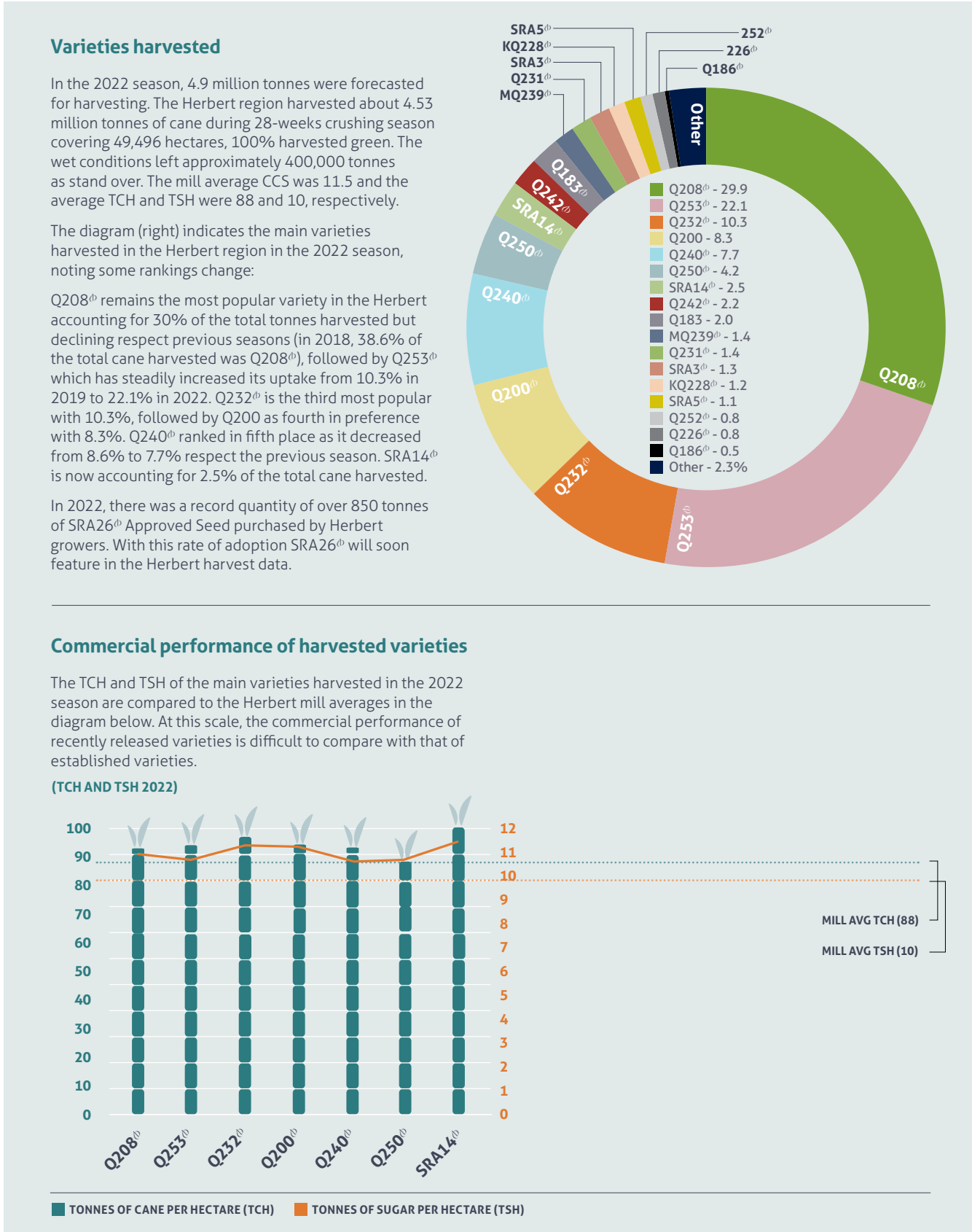
SRA26 and SRA31 shared a similar CCS upward trend and recorded higher CCS in late May to mid-June and keep increasing towards October which gave better CCS than other varieties.

SRA28 CCS peaked in mid-July with higher CCS than other varieties, but dropped towards October.

SRA36 CCS peaked in late August, holding its CCS till mid-October. Overall it gave low CCS compared with other varieties.

VARIETIES HARVESTED IN 2022 IN THE HERBERT REGION AND THEIR PERFORMANCE

The predominant varieties harvested in the 2022 season, and their commercial performance in terms of tonnes of cane per hectare (TCH) and tonnes of sugar per hectare (TSH) are shown below.



RECOMMENDED PLANTING AND HARVESTING

Each year the Herbert Regional Variety Committee (RVC) reviews the Herbert variety list for planting and harvesting. The aim is to assist Herbert growers meeting its General Biosecurity Obligation, in addition to regional disease management of major diseases for Sugarcane Biosecurity Zone 1 (SBZ1).

One new variety SRA40 was approved by the Herbert RVC in 2023 and added to the list of planting and harvesting. This year we are publishing the complete list of recommended planting and harvesting varieties.

Herbert recommended varieties for planting and harvesting		
VARIETY	PLANTING	HARVESTING
SRA40	Yes	Yes
SRA36 ^h	Yes	Yes
SRA31 ^h	Yes	Yes
SRA28 ^h	Yes	Yes
SRA26 ^h	Yes	Yes
WSRA24 ^h	Yes	Yes
SRA14 ^h	Yes	Yes
SRA10 ^h	Yes	Yes
SRA6 ^h	Yes	Yes
SRA5 ^h	Yes	Yes
SRA3	No	Yes
Q253 ^h	Yes	Yes
Q252 ^h	Yes	Yes
Q251	No	Yes
Q250 ^h	Yes	Yes
Q247 ^h	Yes	Yes
Q242 ^h	Yes	Yes
Q241	No	Yes
Q240 ^h	Yes	Yes
MQ239 ^h	Yes	Yes
Q238	No	Yes
Q237	No	Yes
KQ236	No	Yes
Q232 ^h	Yes	Yes

VARIETY	PLANTING	HARVESTING
Q231 ^h	Yes	Yes
KQ228 ^h	Yes	Yes
Q226 ^h	Yes	Yes
Q219 ^h	Yes	Yes
Q216	No	Yes
Q215 ^h	Yes	Yes
Q208 ^h	Yes	Yes
Q204	No	Yes
Q200	Yes	Yes
Q190	No	Yes
Q186	No	Yes
Q183 ^h	Yes	Yes
Q177	No	Yes
Q172	No	Yes
Q158	No	Yes
Q138 ^h	Yes	Yes
Q135	No	Yes
Q133	No	Yes
Q124	No	Yes
Q120	No	Yes
Q119	No	Yes
Q96	No	Yes
CASSIUS	No	Yes
ARGOS	No	Yes

PROPAGATING NEW VARIETIES

Contact your local productivity services group for regional advice on varieties. They can supply approved 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 the highest quality planting materials in terms of disease status and being 'true-to-type'. Approved 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 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 DNA fingerprinted new varieties which the local productivity services group then maintains and distributes the approved seed to growers.



GROW SUGARCANE SPECIFICALLY FOR PLANTING MATERIAL

The block selected for growing plant material should be 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 approved 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. The calculator is available on the SRA website. [Visit **sugarresearch.com.au/calculator**](https://www.sugarresearch.com.au/calculator) or scan the QR code.



TRY TISSUE CULTURE AS AN APPROVED SEED SOURCE

Tissue culture is an excellent source of approved 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
	Metre row planted @ 0.8m	80	200	400	800
Yr 2	Metre 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 50cm to 1m apart. A good distance is 80cm, 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.

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:
 - > Atradox® at 2.5kg/ha plus Dual Gold® at 1.5L/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 100g/ha plus Activator at 200mL/100L 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.

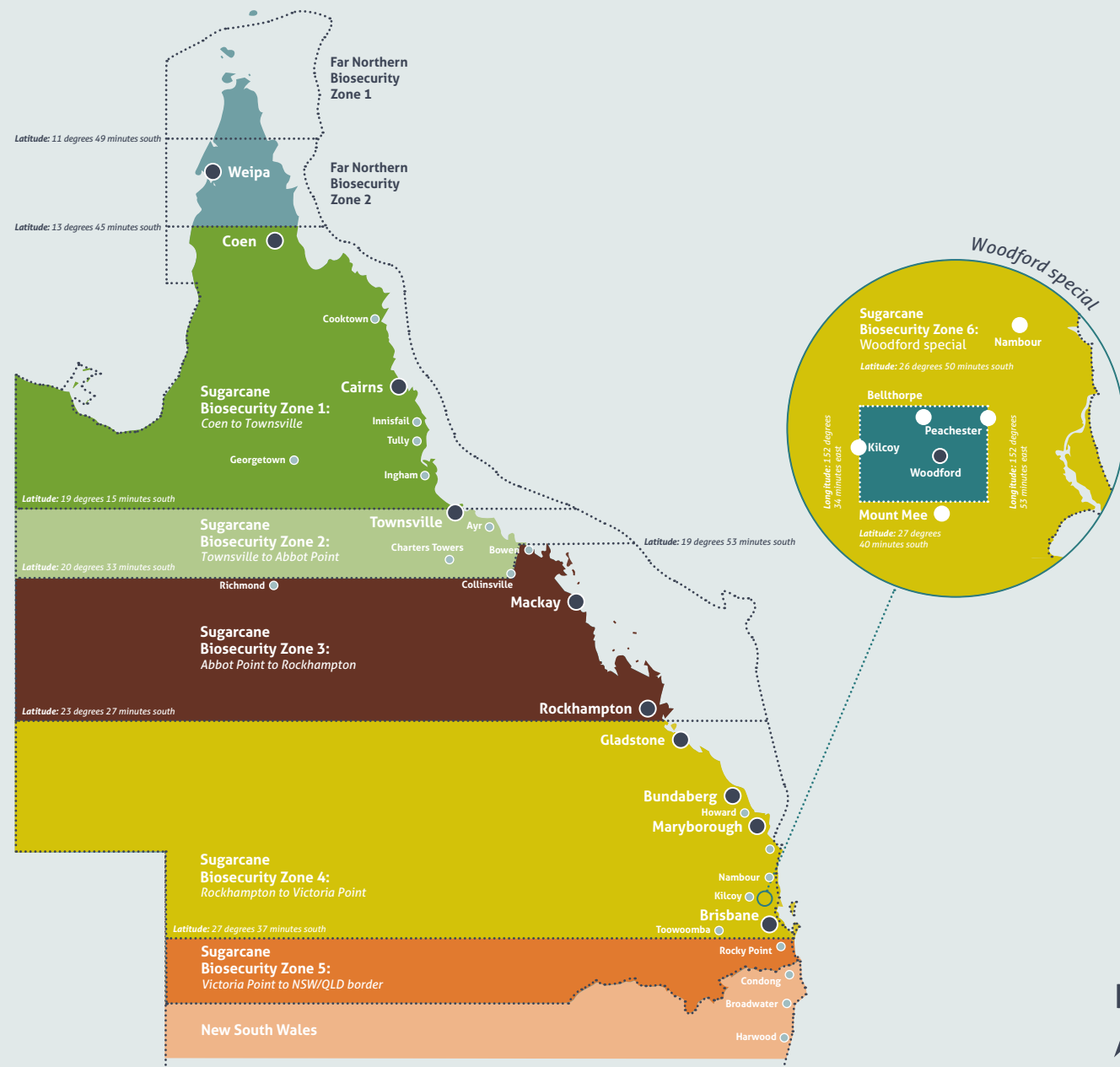
Insects

- 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.

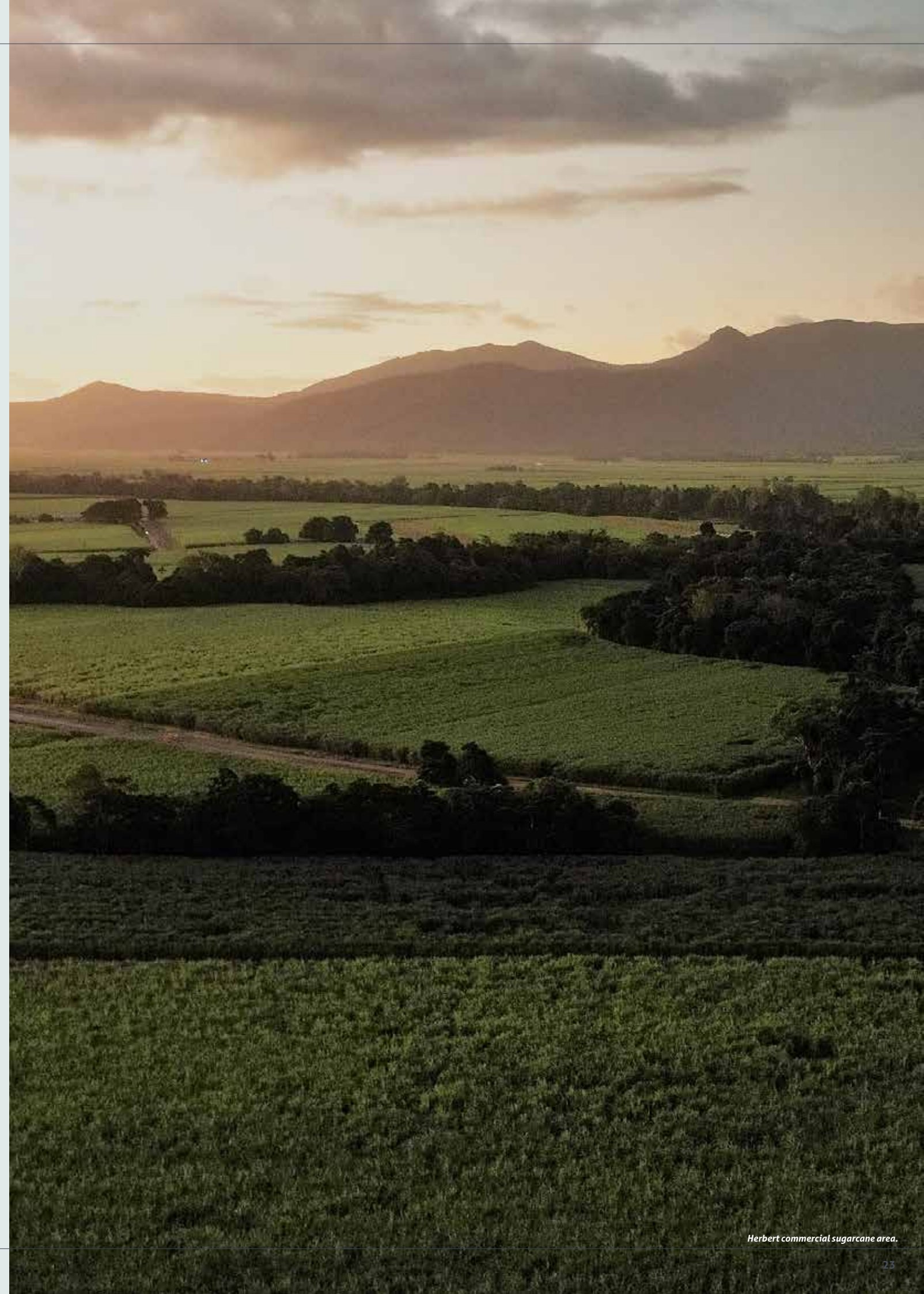
Fertiliser

- 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.

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).



Your local productivity services and agronomy group:

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