Sugar Research Australia

# VARIETY GUIDE 2024/2025

## *Northern Region*

# HOW TO USE THIS GUIDE

*This guide is designed to help growers in the Northern cane growing 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 understand:***



## *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)*** *Aerial photo of the Mulgrave Final Assessment Trial (FAT) substation featuring a plant, first ratoon and second ratoon FAT, plus a fallow currently being planted.*
***(Left) Recently released varieties and their Variety Factsheets (available from the SRA website) on display at the SRA Meringa Field Day.***

**ISSN 2208-7761 (Online) ISSN 2208-7753 (Print)** 

# NEW AND RECENT VARIETIES AVAILABLE IN THE NORTHERN REGION

## Variety Recommendation and Release Process

Regional Variety Committees (RVCs) 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 are 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 Northern RVC (Sugarcane Biosecurity Zone 1) membership consists of one grower and one miller representative from each of the Mossman, Mulgrave, South Johnstone, Tully and Tablelands regions.

The Northern RVC requires a majority vote for progression of a variety through the breeding program and a unanimous vote for the release of a variety.

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.***

**Presented below are the results of trials conducted in the Northern region. Cane yield (TCH) and Commercial Cane Sugar (CCS) for each new variety are compared with the trial results of various standard varieties.**

| **Variety: SRA32$^{\phi}$** Q509-8404 | | ***Parentage:*** *QN80-3425 x QN86-2168* **/** ***Summary:*** *Higher tonnes cane; lower CCS.* | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **TRIAL HARVEST YEAR** | **CROP CLASS** | **YIELD (TCH)** | | | | **CCS** | | | | **# OF HARVESTS** |
| | | **SRA32$^{\phi}$** | **Q200** | **Q208$^{\phi}$** | **SRA26$^{\phi}$** | **SRA32$^{\phi}$** | **Q200** | **Q208$^{\phi}$** | **SRA26$^{\phi}$** | |
| (2019 series FATs): 2020 | Plant | 96 | 80 | 81 | 86 | 14.9 | 16.0 | 15.6 | 15.9 | 4 |
| 2021 | 1R | 111 | 89 | 89 | 100 | 14.4 | 15.3 | 15.1 | 15.5 | 4 |
| 2022 | 2R | 110 | 90 | 92 | 101 | 14.7 | 15.9 | 15.7 | 16.0 | 4 |
| (2021 series FATs): 2022 | Plant | 115 | 98 | 97 | 99 | 14.9 | 15.9 | 15.5 | 16.0 | 4 |
| 2023 | 1R | 96 | 79 | 76 | 78 | 16.1 | 16.5 | 16.2 | 16.7 | 4 |
| (2022 series FATs): 2023 | Plant | 121 | 102 | 99 | 106 | 15.8 | 16.3 | 15.7 | 16.6 | 3 |
| **Overall Coastal FAT Performance** | | **108** | **89** | **89** | **95** | **15.1** | **16.0** | **15.6** | **16.1** | **23** |
| **TRIAL HARVEST YEAR** | **CROP CLASS** | **YIELD (TCH)** | | | **CCS** | | | **# OF HARVESTS** | | |
| | | **SRA32$^{\phi}$** | **Q208$^{\phi}$** | **KQ228$^{\phi}$** | **SRA32$^{\phi}$** | **Q208$^{\phi}$** | **KQ228$^{\phi}$** | | | |
| (2019 series RVT): 2020 | Plant | 117 | 103 | 105 | 13.0 | 13.6 | 14.7 | 1 | | |
| 2021 | 1R | 138 | 125 | 127 | 13.4 | 14.4 | 15.3 | 1 | | |
| 2022 | 2R | 129 | 129 | 126 | 15.8 | 16.3 | 16.7 | 1 | | |
| (2020 series RVT): 2021 | Plant | 103 | 99 | 94 | 13.4 | 13.4 | 13.8 | 1 | | |
| 2022 | 1R | 123 | 128 | 134 | 15.3 | 15.5 | 15.2 | 1 | | |
| (2022 series RVT): 2023 | Plant | 85 | 77 | 84 | 15.5 | 17.1 | 16.9 | 1 | | |
| **Overall Tableland RVT Performance** | | **116** | **110** | **112** | **14.4** | **15.0** | **15.4** | **6** | | |
| **Contact your local PSO for whole stalk availability and to order as tissue culture** | | | | | | | | | | |
| Comments: | SRA32$^{\phi}$ is a recent Burdekin variety that has shown an impressive 7% sugar yield advantage over SRA26$^{\phi}$ in the coastal Far North and is competitive with KQ228$^{\phi}$ on the Tableland. These yield advantages have been consistent across all plant to second ratoon coastal and Tableland trials.<br>SRA32$^{\phi}$ is a vigorous variety but has low CCS. It is a reliable germinator and similar in speed to Q208$^{\phi}$. Its early growth is rapid and vigorous producing early biomass relative to other commercial varieties. SRA32$^{\phi}$ has an open stool of moderate to thick stalks at maturity, and therefore lodging is likely to be experienced in larger crops. SRA32$^{\phi}$ arrows similar to Q200 on the coast, and KQ228$^{\phi}$ on the Tableland. It is also a moderate suckering variety like Q253$^{\phi}$. It has large eyes covered by moderate trash. Side-shooting has been observed in SRA32$^{\phi}$ on exposed ends and outside rows of the crop, but it is generally not observed within the crop itself.<br>Initial maturity sampling of SRA32$^{\phi}$ suggests it is best harvested mid or late in the season. Maturity testing should be a priority if considering the use of growth regulators to maximise its CCS returns. SRA32$^{\phi}$ is a profitable variety choice for Northern coastal growers with a low Pachymetra and smut risk, and a competitive variety option on the Tableland to complement KQ228$^{\phi}$ where SRA32$^{\phi}$ is as a mid-late season replacement for Q208$^{\phi}$ and Q232$^{\phi}$.<br>Data from the 2021 and 2022 FAT series, and the 2022 Tableland RVT series are still being collected. | | | | | | | | | |

| **Variety: SRA9Φ** QC97-2432 | | | ***Parentage:** QN81-289 x Q166 / **Summary:** Higher tonnes cane; lower CCS.* | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **TRIAL HARVEST YEAR** | | **CROP CLASS** | **YIELD (TCH)** | | | | **CCS** | | | | **# OF HARVESTS** |
| | | | **SRA9Φ** | **Q200** | **Q208Φ** | **SRA26Φ** | **SRA9Φ** | **Q200** | **Q208Φ** | **SRA26Φ** | |
| (2017 series FATs): | 2018 | Plant | 115 | 97 | 95 | 107 | 16.9 | 17.0 | 17.2 | 17.2 | 4 |
| | 2019 | 1R | 96 | 86 | 89 | 90 | 15.5 | 16.9 | 16.5 | 16.9 | 4 |
| | 2020 | 2R | 115 | 94 | 108 | 104 | 15.3 | 16.3 | 15.9 | 16.3 | 4 |
| (2019 series FATs): | 2020 | Plant | 94 | 80 | 81 | 86 | 15.3 | 16.0 | 15.6 | 15.9 | 4 |
| | 2021 | 1R | 117 | 89 | 89 | 100 | 15.2 | 15.3 | 15.1 | 15.5 | 4 |
| | 2022 | 2R | 112 | 90 | 92 | 101 | 15.5 | 15.9 | 15.7 | 16.0 | 4 |
| (2020 series FATs): | 2021 | Plant | 92 | 77 | 77 | 83 | 15.3 | 16.2 | 15.6 | 17.0 | 4 |
| | 2022 | 1R | 107 | 96 | 97 | 94 | 15.6 | 16.4 | 15.9 | 16.8 | 4 |
| | 2023 | 2R | 85 | 73 | 72 | 71 | 16.4 | 16.6 | 16.6 | 17.4 | 4 |
| (2021 series FATs): | 2022 | Plant | 113 | 98 | 97 | 99 | 15.2 | 15.9 | 15.5 | 16.0 | 4 |
| | 2023 | 1R | 93 | 79 | 76 | 78 | 16.3 | 16.5 | 16.2 | 16.7 | 4 |
| (2022 series FATs): | 2023 | Plant | 107 | 102 | 99 | 106 | 15.9 | 16.3 | 15.7 | 16.6 | 3 |
| **Overall Performance** | | | **104** | **88** | **89** | **93** | **15.7** | **16.3** | **16.0** | **16.5** | **47** |
| **Contact your local PSO for whole stalk availability and to order as tissue culture** | | | | | | | | | | | |
| Comments: | | | SRA9Φ is a Central region variety that has demonstrated exceptional results in SRA field trials conducted in the Far North, outperforming Q208Φ by 14% in terms of sugar yield. SRA9Φ's yield advantage is consistent across crop classes in all Northern coastal trial locations tested since 2017. SRA9Φ is a lower CCS variety with a low propensity to arrow and sucker, and will keep growing throughout the season. Maturity testing should be a priority if considering the use of growth regulators.<br>SRA9Φ is a fast and reliable germinator when compared to Q208Φ. It has tall and moderate-to-high stalk numbers of average diameter at maturity. It is a vigorous variety and will often stand erect providing good harvester presentation even in high-yielding crops. SRA9Φ has a more erect canopy than SRA26Φ, but it still provides better canopy closure than Q208Φ for good weed competition. Smut levels observed in SRA9Φ through natural infection in the wet tropics suggest its resistance to smut is more similar to Q208Φ than Q200. Smut can still be found in SRA9Φ if the crop is stressed or is under high smut pressure from neighbouring crops. SRA9Φ is a more profitable variety choice especially for growers with higher Pachymetra spore counts.<br>Data from the 2021 and 2022 FAT series are still being collected. | | | | | | | | |

| **Variety: SRA37Φ** QS09-7559 | | | ***Parentage:** QC82-663 x Q205 / **Summary:** Equal to higher tonnes cane; equal to lower CCS.* | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **TRIAL HARVEST YEAR** | | **CROP CLASS** | **YIELD (TCH)** | | | | **CCS** | | | | **# OF HARVESTS** |
| | | | **SRA37Φ** | **Q200** | **Q208Φ** | **SRA26Φ** | **SRA37Φ** | **Q200** | **Q208Φ** | **SRA26Φ** | |
| (2019 series FATs): | 2020 | Plant | 89 | 80 | 81 | 86 | 15.5 | 16.0 | 15.6 | 15.9 | 4 |
| | 2021 | 1R | 120 | 89 | 89 | 100 | 15.0 | 15.3 | 15.1 | 15.5 | 4 |
| | 2022 | 2R | 117 | 90 | 92 | 101 | 15.3 | 15.9 | 15.7 | 16.0 | 4 |
| (2020 series FATs): | 2021 | Plant | 83 | 77 | 77 | 83 | 15.4 | 16.2 | 15.6 | 17.0 | 4 |
| | 2022 | 1R | 102 | 96 | 97 | 94 | 15.9 | 16.4 | 15.9 | 16.8 | 4 |
| | 2023 | 2R | 81 | 73 | 72 | 71 | 16.2 | 16.6 | 16.6 | 17.4 | 4 |
| (2021 series FATs): | 2022 | Plant | 104 | 98 | 97 | 99 | 15.2 | 15.9 | 15.5 | 16.0 | 4 |
| | 2023 | 1R | 85 | 79 | 76 | 78 | 15.8 | 16.5 | 16.2 | 16.7 | 4 |
| (2022 series FATs): | 2023 | Plant | 110 | 102 | 99 | 106 | 15.5 | 16.3 | 15.7 | 16.6 | 3 |
| **Overall performance** | | | **99** | **87** | **86** | **91** | **15.5** | **16.1** | **15.8** | **16.4** | **35** |
| **Contact your local PSO for whole stalk availability and to order as tissue culture** | | | | | | | | | | | |
| Comments: | | | While SRA37Φ has 47 results from FATs planted in 2016, 2019, 2020, 2021 and 2022, in order to make a direct comparison with SRA26Φ the data presented omits the 2016 series. Performance of SRA37Φ in the 2016 FAT series can be found in the 2023/2024 Northern Variety Guide, available on sugarresearch.com.au.<br>SRA37Φ's cane yield is comparable to Q208Φ in plant crop; however, its strong ratooning ability contributes to an overall yield advantage of 12% over Q208Φ when considering the entire crop cycle. This trend has been consistent across all Northern coastal SRA field trials since it was first tested in 2016.<br>SRA37Φ is a rapid and reliable germinator and is quick to produce multiple tillers for early crop establishment. At maturity it has a moderate stalk population which sometimes display pale green and red candy stripes. It has an erect growth habit for good presentation to the harvester. SRA37Φ has more of an erect canopy than SRA26Φ, but it still provides better canopy closure than Q208Φ for good weed competition. SRA37Φ is very sparse to non-arrowing and does not sucker readily. It will continue to grow steadily throughout the autumn and winter months, similar to SRA26Φ. Limited maturity testing suggests SRA37Φ follows a similar maturity curve as Q200 and SRA26Φ and is best harvested mid or late in the season. Maturity testing prior to use of growth regulators is recommended.<br>SRA37Φ will provide growers with improved ratooning ability and disease resistance to Pachymetra compared to Q208Φ.<br>Data from the 2021 and 2022 FAT series are still being collected. | | | | | | | | |

# NEW AND RECENT VARIETIES AVAILABLE IN THE NORTHERN REGION (CONT)

| **Variety: SRA28ϕ** QS08-8776 | | | ***Parentage:*** *Q233ϕ x Q135* ***/ Summary:*** *Equal to higher tonnes cane; equal CCS.* | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **TRIAL HARVEST YEAR** | | **CROP CLASS** | **YIELD (TCH)** | | | | **CCS** | | | | **# OF HARVESTS** |
| | | | **SRA28ϕ** | **Q200** | **Q208ϕ** | **SRA26ϕ** | **SRA28ϕ** | **Q200** | **Q208ϕ** | **SRA26ϕ** | |
| (2018 series FATs): | 2019 | Plant | 82 | 82 | 83 | 81 | 16.2 | 16.5 | 16.3 | 16.8 | 4 |
| | 2020 | 1R | 103 | 95 | 100 | 91 | 16.0 | 16.3 | 16.0 | 16.4 | 4 |
| | 2021 | 2R | 91 | 92 | 90 | 91 | 15.2 | 15.8 | 15.7 | 16.5 | 4 |
| (2019 series FATs): | 2020 | Plant | 89 | 80 | 81 | 86 | 16.0 | 16.0 | 15.6 | 15.9 | 4 |
| | 2021 | 1R | 111 | 89 | 89 | 100 | 15.3 | 15.3 | 15.1 | 15.5 | 4 |
| | 2022 | 2R | 111 | 90 | 92 | 101 | 16.4 | 15.9 | 15.7 | 16.0 | 4 |
| (2020 series FATs): | 2021 | Plant | 91 | 77 | 77 | 83 | 15.7 | 16.2 | 15.6 | 17.0 | 4 |
| | 2022 | 1R | 103 | 96 | 97 | 94 | 16.1 | 16.4 | 15.9 | 16.8 | 4 |
| | 2023 | 2R | 79 | 73 | 72 | 71 | 16.3 | 16.6 | 16.6 | 17.4 | 4 |
| (2021 series FATs): | 2022 | Plant | 109 | 98 | 97 | 99 | 16.4 | 15.9 | 15.5 | 16.0 | 4 |
| | 2023 | 1R | 86 | 79 | 76 | 78 | 16.7 | 16.5 | 16.2 | 16.7 | 4 |
| (2022 series FATs): | 2023 | Plant | 110 | 102 | 99 | 106 | 16.6 | 16.3 | 15.7 | 16.6 | 3 |
| **Overall Performance** | | | **97** | **88** | **87** | **90** | **16.1** | **16.1** | **15.8** | **16.5** | **47** |
| **Contact your local PSO for whole stalk availability and to order as tissue culture** | | | | | | | | | | | |

| | |
|---|---|
| Comments: | While SRA28ϕ has 59 results from FATs planted in 2015, 2018, 2019, 2020, 2021 and 2022, in order to make a direct comparison with SRA26ϕ the data presented omits the 2015 series. Performance of SRA28ϕ in the 2015 FAT series can be found in the 2023/2024 Northern Variety Guide, available on sugarresearch.com.au.<br>SRA28ϕ has achieved a 13% sugar yield advantage over Q208ϕ in SRA field trials, and has shown a broad adaptability across diverse growing environments across the Northern coastal, Tableland and Herbert regions. SRA28ϕ is a reliable germinator but problems have been observed with mature or older planting material, so the use of material 12 months of age or younger is a priority. It can also be sensitive to hot water treatment with tissue culture being a good alternative source of clean seed material. Its initial growth and tillering can be slower than other commercial varieties, but this is not a reflection of its yield potential.<br>SRA28ϕ 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. SRA28ϕ has a compact stool with an erect habit providing good harvester presentation. Suckers in SRA28ϕ are obvious due to their purple colour and number, but trial data suggests suckering is variable with similar levels to Q240ϕ, Q250ϕ and Q253ϕ. Arrowing is similar to Q200 in an average year, but when conditions are favourable arrowing can be profuse.<br>SRA28ϕ has rapid growth after rainfall, similar to Q253ϕ, so maturity testing, or avoiding harvest soon after heavy rain is recommended to maximise CCS. SRA28ϕ has an excellent disease resistance profile and is a more profitable variety choice especially for growers with higher Pachymetra spore counts. SRA28ϕ exhibits stronger ratooning ability compared to Q200 and Q208ϕ.<br>Data from the 2021 and 2022 FAT series are still being collected. |

| **Variety: SRA26Φ** QN08-2282 | | | ***Parentage:** QN97-2122 x Q146 / **Summary:** Equal tonnes cane; equal to higher CCS.* | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **TRIAL HARVEST YEAR** | | **CROP CLASS** | **YIELD (TCH)** | | | | **CCS** | | | | **# OF HARVESTS** |
| | | | **SRA26Φ** | **Q200** | **Q208Φ** | **Q250Φ** | **SRA26Φ** | **Q200** | **Q208Φ** | **Q250Φ** | |
| (2014 series FATs): | 2015 | Plant | 103 | 101 | 103 | 99 | 15.4 | 15.5 | 15.5 | 16.1 | 4 |
| | 2016 | 1R | 123 | 116 | 128 | 108 | 15.8 | 15.6 | 15.4 | 15.8 | 4 |
| | 2017 | 2R | 104 | 99 | 109 | 88 | 15.4 | 15.1 | 15.1 | 15.7 | 4 |
| (2017 series FATs): | 2018 | Plant | 107 | 97 | 95 | 92 | 17.2 | 17.0 | 17.2 | 18.0 | 4 |
| | 2019 | 1R | 90 | 86 | 89 | 81 | 16.9 | 16.9 | 16.5 | 17.6 | 4 |
| | 2020 | 2R | 104 | 94 | 108 | 92 | 16.3 | 16.3 | 15.9 | 16.7 | 4 |
| (2018 series FATs): | 2019 | Plant | 81 | 82 | 83 | 72 | 16.8 | 16.5 | 16.3 | 17.3 | 4 |
| | 2020 | 1R | 91 | 95 | 100 | 84 | 16.4 | 16.3 | 16.0 | 16.9 | 4 |
| | 2021 | 2R | 91 | 92 | 90 | 74 | 16.5 | 15.8 | 15.7 | 16.6 | 4 |
| (2019 series FATs): | 2020 | Plant | 86 | 80 | 81 | 78 | 15.9 | 16.0 | 15.6 | 16.6 | 4 |
| | 2021 | 1R | 100 | 89 | 89 | 81 | 15.5 | 15.3 | 15.1 | 16.3 | 4 |
| | 2022 | 2R | 101 | 90 | 92 | 80 | 16.0 | 15.9 | 15.7 | 16.5 | 4 |
| (2020 series FATs): | 2021 | Plant | 83 | 77 | 77 | 73 | 17.0 | 16.2 | 15.6 | 17.0 | 4 |
| | 2022 | 1R | 94 | 96 | 97 | 83 | 16.8 | 16.4 | 15.9 | 16.9 | 4 |
| | 2023 | 2R | 71 | 73 | 72 | 64 | 17.4 | 16.6 | 16.6 | 17.1 | 4 |
| (2021 series FATs): | 2022 | Plant | 99 | 98 | 97 | 93 | 16.0 | 15.9 | 15.5 | 16.6 | 4 |
| | 2023 | 1R | 78 | 79 | 76 | 76 | 16.7 | 16.5 | 16.2 | 17.1 | 4 |
| (2022 series FATs): | 2023 | Plant | 106 | 102 | 99 | 94 | 16.6 | 16.3 | 15.7 | 16.9 | 3 |
| **Overall Performance** | | | **95** | **92** | **94** | **84** | **16.4** | **16.1** | **15.9** | **16.8** | **71** |
| **Contact your local PSO for whole stalk availability and to order as tissue culture** | | | | | | | | | | | |
| Comments: | | | SRA26Φ has shown equal tonnes cane and ratooning ability to Q208Φ with a 5% sugar yield advantage over Q208Φ in SRA field trials through an improvement in CCS. This is consistent across all Northern coastal trial locations since testing began in 2014.<br>SRA26Φ is a reliable germinator with a semi-prostrate early growth habit, often up to and including at fill-in stage. The yield potential of SRA26Φ is not typically affected if tiller damage occurs when filling in as it is a moderate-to-high tillering variety. SRA26Φ will straighten up to stand erect providing good harvester presentation, though its trash may pose slightly more challenges for harvesting than other varieties. Initial commercial observations indicate that SRA26Φ's productivity is not as strong on heavy clay, low-lying, waterlogged blocks.<br>SRA26Φ has internodes of even length and protected eyes making it an ideal variety for billet planting, but if whole-stalk planting SRA26Φ be wary, as it is very hairy. SRA26Φ is a very sparse or non-arrowing variety, is moderate to tight trashing and does not sucker readily. It will continue to grow steadily throughout the autumn and winter months and provides excellent canopy closure even on wider rows. We recommend it is harvested mid- to late-season to maximise its CCS, similar to Q200. However, if SRA26Φ is targeted for harvest early in the season then maturity testing prior to use of growth regulators is advised.<br>Its excellent disease resistance profile makes it an attractive option for growers looking to minimise their risk of yield loss due to smut and Pachymetra. SRA26Φ was one of the most dominant varieties planted across the Northern coastal region in 2023.<br>Data from the 2021 and 2022 FAT series are still being collected. | | | | | | | | |

# NEW AND RECENT VARIETIES AVAILABLE IN THE NORTHERN REGION (CONT)

| Variety: SRA15ф QS06-9119 | | Parentage: *QS91-7008 x Q200* / **Summary:** *Equal tonnes cane; equal CCS.* | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| TRIAL HARVEST YEAR | CROP CLASS | YIELD (TCH) | | | | CCS | | | | # OF HARVESTS |
| | | SRA15ф | Q200 | Q208ф | SRA26ф | SRA15ф | Q200 | Q208ф | SRA26ф | |
| (2017, 2018 and 2019 series FATs) | Plant | 85 | 86 | 86 | 92 | 16.8 | 16.5 | 16.4 | 16.6 | 12 |
| | 1R | 95 | 90 | 93 | 94 | 15.9 | 16.1 | 15.9 | 16.3 | 12 |
| | 2R | 101 | 92 | 97 | 99 | 15.9 | 16.0 | 15.8 | 16.3 | 12 |
| **Overall Performance** | | **94** | **90** | **92** | **95** | **16.2** | **16.2** | **16.0** | **16.4** | **36** |
| **Contact your local PSO for whole stalk availability and to order as tissue culture** | | | | | | | | | | |
| Comments: | While SRA15ф has 60 results from FATs planted in 2013, 2016, 2017, 2018 and 2019, the data presented here is only from the 2017, 2018 and 2019 FAT series where SRA26ф was also planted for direct comparison. In these trials SRA15ф was competitive with the commercial standards for both cane yield and CCS across all sites and crop classes, and is a good option for early CCS. SRA15ф is a moderate to profuse arrowing variety with protruding eyes and can side-shoot when heavily arrowed; ideal to use plant source less than 12 months of age. SRA15ф is resistant to leaf scald, intermediate-resistant to Pachymetra, and intermediate-susceptible to smut. Smut may be found in SRA15ф under moderate to high spore-load when grown in the drier areas of the wet tropics.<br>Performance of SRA15ф by FAT series can be found in the 2021/2022 Northern Variety Guide available on sugarresearch.com.au. | | | | | | | | | |

| Variety: SRA6ф QN05-507 | | Parentage: *QN80-3425 x QH93-1197* / **Summary:** *Equal tonnes cane; lower CCS.* | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| TRIAL HARVEST YEAR | CROP CLASS | YIELD (TCH) | | | | CCS | | | | # OF HARVESTS |
| | | SRA6ф | Q200 | Q208ф | SRA26ф | SRA6ф | Q200 | Q208ф | SRA26ф | |
| (2014 and 2017 series FATs) | Plant | 96 | 99 | 99 | 105 | 15.7 | 16.3 | 16.4 | 16.3 | 8 |
| | 1R | 106 | 101 | 108 | 107 | 15.1 | 16.2 | 16.0 | 16.3 | 8 |
| | 2R | 102 | 97 | 109 | 104 | 14.8 | 15.7 | 15.5 | 15.9 | 8 |
| **Overall Performance** | | **101** | **99** | **105** | **105** | **15.2** | **16.1** | **16.0** | **16.2** | **24** |
| **Contact your local productivity service organisation for whole stalk availability and to order as tissue culture** | | | | | | | | | | |
| Comments: | While SRA6ф has 60 results from FATs planted in 2011, 2014, 2015, 2016 & 2017, the data presented here is only from the 2014 and 2017 FAT series where SRA26ф was also planted for direct comparison. In comparison to commercial standards, SRA6ф's cane yield was equal to or above-average, and CCS on average 0.5 units lower. SRA6ф showed equally good performance over different soil types where tested, but performs best on well-drained soils with good regular moisture. Initial germination is rapid and reliable, with slow early crop growth followed by accelerated growth from Autumn. SRA6ф has a dense and larger stalk population relative to other varieties, but the height of the crop is often shorter; however, its yield potential is greater than what its height suggests. It is also a sparse arrowing variety with a spiky upright canopy which is often clean of leaf diseases. SRA6ф has an excellent disease profile with resistance to all major diseases including smut, Pachymetra and leaf scald.<br>Performance of SRA6ф by FAT series can be found in the 2020/2021 Northern Variety Guide available on sugarresearch.com.au. | | | | | | | | | |

**SRA32**[ф]

**SRA9**[ф]

**SRA37**[ф]

**SRA28**[ф]

**SRA26**[ф]

**SRA15**[ф]

**SRA6**[ф]

**For more information on *variety field trials* contact:**
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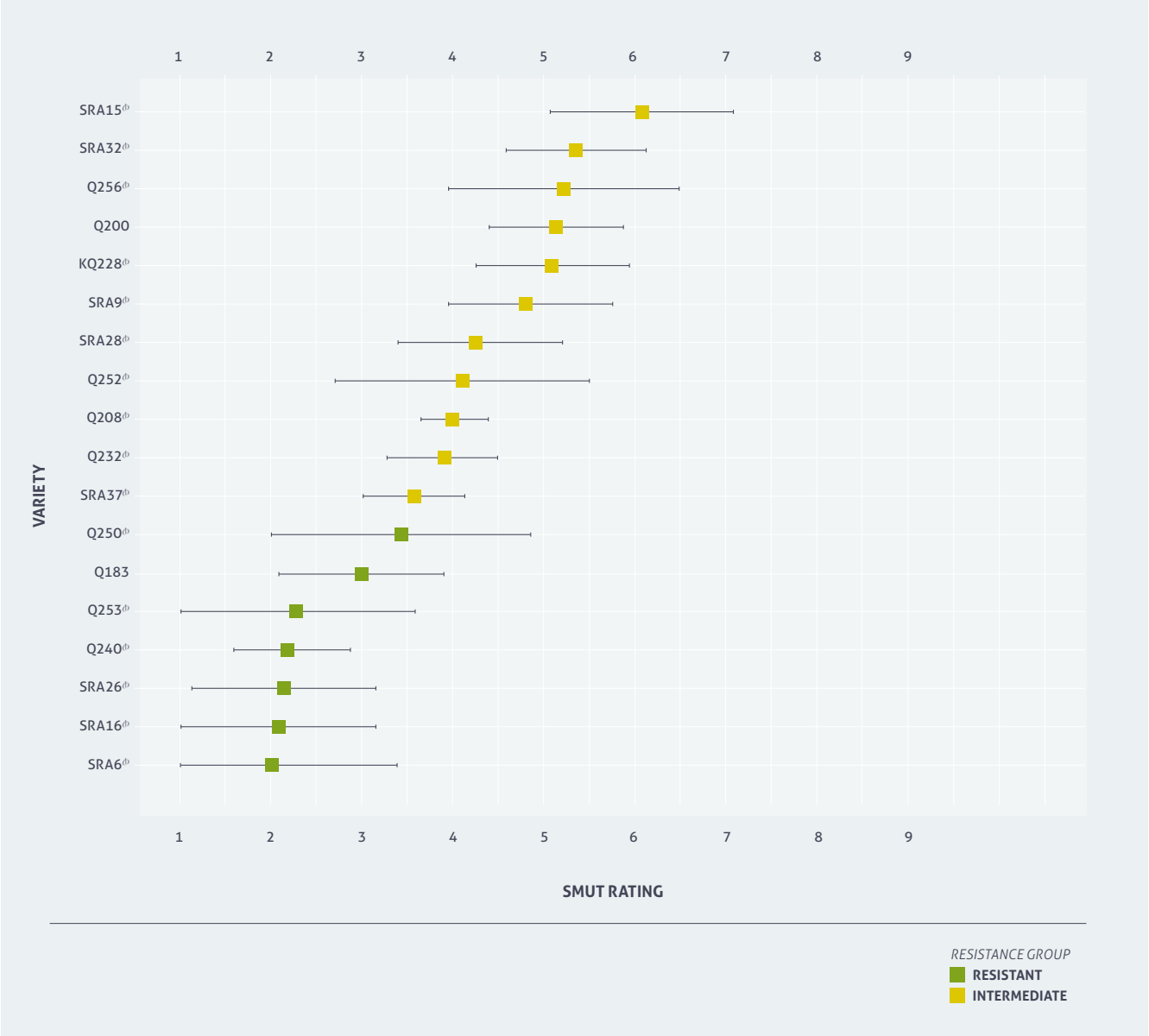
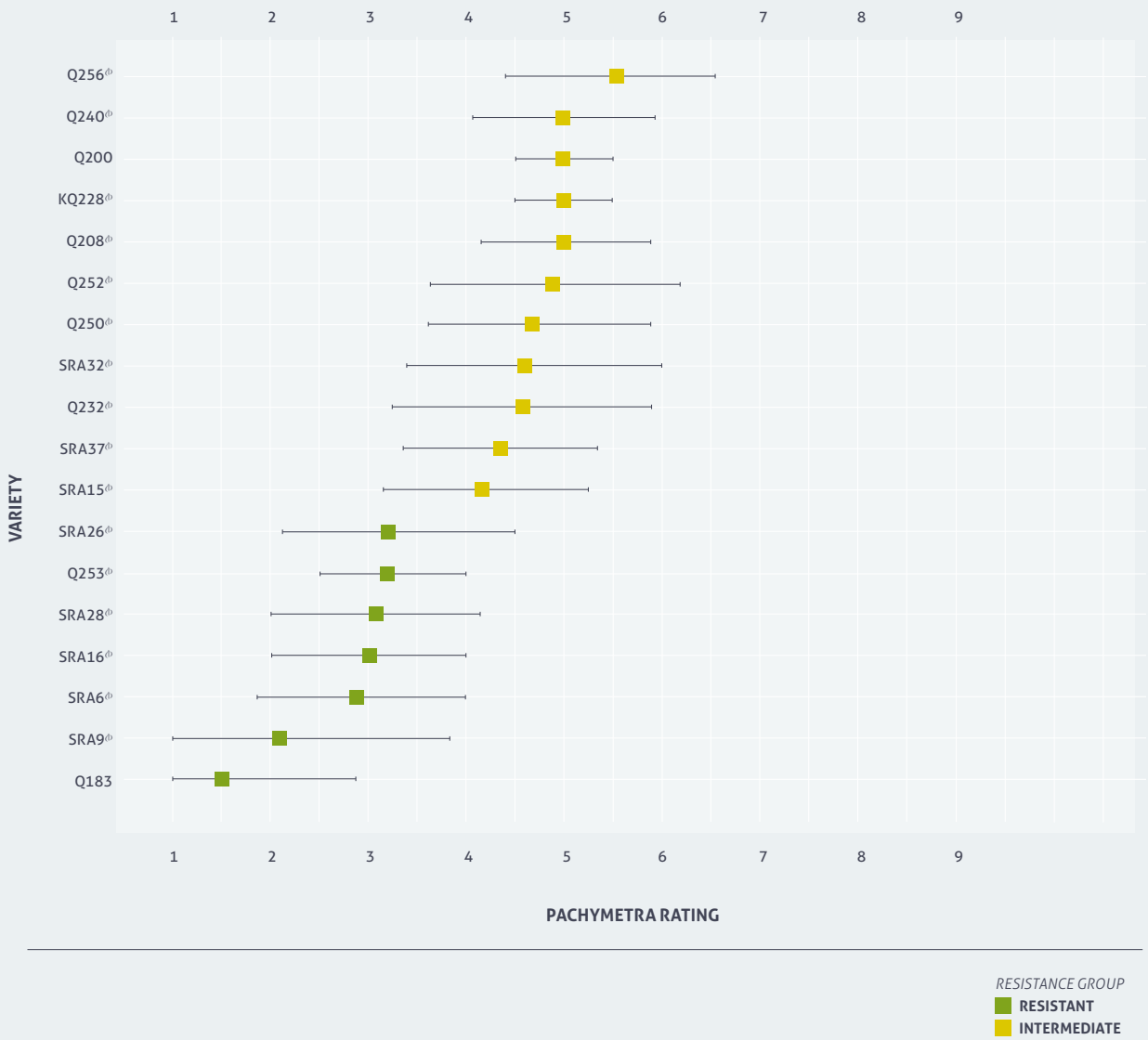
# SMUT RATINGS

**Smut resistance ratings are calculated from the incidence and severity of infection compared to standard varieties in inoculated field trials. The graphic includes the rating and the 95% confidence interval for each variety. The confidence interval is influenced by factors such as the number of trials and the uniformity of smut infection. Rating confidence will improve as more data is collected.**



# PACHYMETRA RATINGS

**Pachymetra resistance ratings are calculated from the severity of infection in a test clone compared to standard varieties in inoculated bench 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 times a variety has been tested and variability of Pachymetra infection within each trial. Rating confidence will improve as more data are collected.**



# 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.**

**Northern Coastal and Tableland Disease Ratings**

| VARIETY | REGION* | SMUT | PACHYMETRA | LEAF SCALD | CHLOROTIC STREAK | ORANGE RUST | BROWN RUST | RED ROT | YELLOW SPOT | FIJI LEAF GALL | MOSAIC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SRA37Φ | N, T | I-R | I-R | R | | | R* | R | | R | R |
| SRA32Φ | N, T | I | I | R | | | R* | I | I-R* | I-R | R |
| SRA28Φ | N, T | I-R | R | R | | R | R* | R | R | I | R |
| SRA26Φ | N, T | R | R | R | | R | R* | R | R | I-R | S |
| SRA16Φ | N | R | R | R | | R | R* | R | | S | R |
| SRA15Φ | N, T | I-S | I-R | R | | R | R* | R | I-R* | R | R |
| SRA9Φ | N, T | I | R | R | | R | | I-R | I-R | I | R |
| SRA6Φ | N | R | R | R | | R | | I | I-R | I | R |
| Q256Φ | T | I | I-S | R | | R | | I | R | R | R |
| Q253Φ | N, T | R | R | R | | R | I-S | I | S | S | R |
| Q252Φ | N | I-R | I | R | | R | | R | I | I | R |
| Q250Φ | N, T | R | I | R | | I | | I | I-R | I-S | R |
| Q240Φ | N, T | R | I | R | I-R | R | | R | I | I-S | R |
| Q232Φ | T | I-R | I | R | R | R | | I-R | R | I | R |
| KQ228Φ | N, T | I | I | R | S | R | R | R | I | I | R |
| Q208Φ | N, T | I-R | I | R | R | R | R | R | R | I-S | R |
| Q200 | N, T | I | I | R | I | R | R | R | I-R | R | R |
| Q183 | T | R | R | I | S | R | R | I | I-S | R | 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 KQ228Φ and Q253Φ.*

- RESISTANT (R)
- PROVISIONAL RATING (R*)
- RESISTANT - INTERMEDIATE (I-R)
- INTERMEDIATE (I)
- INTERMEDIATE- SUSCEPTIBLE (I-S)
- PROVISIONAL RATING (I-S*)
- SUSCEPTIBLE (S)

N NORTHERN COASTAL
T TABLELAND

# HARVEST MANAGEMENT

**Growers are encouraged to 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 harvest management

| VARIETY | EARLY SUGAR | MID SUGAR | LATE SUGAR | TRASHING | SUCKERING | LODGING |
|---|---|---|---|---|---|---|
| SRA37Φ | Average | Good | Good | Free-Average | Light | Good |
| SRA32Φ | Poor | Average | Average | Average | Moderate | Average |
| SRA28Φ | Average | Good | Good | Average | Moderate | Good |
| SRA26Φ | Average | Good | Good | Average-Tight | Light | Average |
| SRA16Φ | Average | Average | Average | Free-Average | Light | Good |
| SRA15Φ | Good | Good | Good | Average | Light | Average |
| SRA9Φ | Poor | Average | Average | Free-Average | Light | Average-Good |
| SRA6Φ | Average | Average | Average | Tight | Light | Good |
| Q253Φ | Average | Average | Average | Free-Average | Moderate | Good |
| Q252Φ | Average | Good | Average | Free | Light | Good |
| Q250Φ | Good | Good | Good | Free-Average | Moderate | Average |
| Q240Φ | Average | Good | Good | Average | Moderate | Average |
| KQ228Φ | Good | Average | Poor | Tight | Moderate | Average |
| Q208Φ | Average | Good | Good | Free | Light-Moderate | Average |
| Q200 | Average | Good | Good | Free | Light | Average |

## Tableland harvest management

| VARIETY | EARLY SUGAR | MID SUGAR | LATE SUGAR | TRASHING | LODGING |
|---|---|---|---|---|---|
| SRA37Φ | Average | Average | Average | Free-Average | Good |
| SRA32Φ | Poor | Average | Average | Average | Average |
| SRA28Φ | Good | Good | Good | Average | Good |
| SRA26Φ | Average | Good | Good | Average-Tight | Good |
| SRA15Φ | Average | Average | Average | Average | Good |
| SRA9Φ | Poor | Average | Average | Free-Average | Good |
| Q256Φ | Poor | Poor | Poor | Free-Average | Poor |
| Q253Φ | Average | Average | Average | Free-Average | Good |
| Q250Φ | Good | Good | Good | Free-Average | Average |
| Q240Φ | Average | Average | Average | Average | Good |
| Q232Φ | Poor | Good | Poor | Average | Average |
| KQ228Φ | Good | Good | Average | Tight | Good |
| Q208Φ | Average | Average | Average | Free | Average |
| Q200 | Poor | Average | Average | Free | Average |
| Q183 | Poor | Poor | Average | Free-Average | Good |

**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-GOOD
- AVERAGE
- LOW / AVERAGE-POOR
- POOR
- UNKNOWN

*TRASHING*

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

*SUCKERING*

- LIGHT
- LIGHT-MODERATE
- MODERATE

# 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$^{(\phi)}$ is assessed and used as a susceptible reference variety to compare to other tested varieties.

**Table 2** describes the phytotoxicity symptoms obtained on KQ228$^{(\phi)}$ 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$^{(\phi)}$**

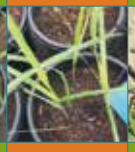
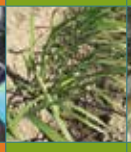
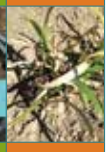
| | 2,4-D | AMETRYN | AMETRYN+ TRIFLOXY SULFURON | AMICARBAZONE | ASULAM | DIURON | FLUMIOXAZIN | METOLACHLOR | METRIBUZIN | MSMA |
|---|---|---|---|---|---|---|---|---|---|---|
| DESCRIPTION OF SYMPTOMS | Small white spotty discolorations | Yellowing of the whole plant | Slight yellow blotching | Small 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$^{(\phi)}$ | Mild | Medium to severe | Mild | Mild | Medium | Mild | Severe | Medium | Mild | Medium to severe |
| KQ228$^{(\phi)}$ 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 (left) Page 14)**

| VARIETY | 2,4-D | AMETRYN | AMETRYN+ TRIFLOXY-SULFURON | AMI-CARBAZONE | ASULAM | DIURON | FLUMIOXAZIN | METOLACHLOR | METRIBUZIN | MSMA |
|---|---|---|---|---|---|---|---|---|---|---|
| **KQ228ϕ** | **1.6** | **1.9** | **1.7** | **1.3** | **1.9** | **1.3** | **3.6** | **2.1** | **1.5** | **3.0** |
| Q208ϕ | 1.5 | | 1.6 | | 1.8 | | | 2.0 | 1.4 | 2.9 |
| Q240ϕ | 1.6 | | 1.7 | | 1.8 | | | 2.1 | 1.5 | 2.9 |
| Q250ϕ | 1.6 | | 1.8 | | 1.9 | | | 2.2 | 1.6 | 3.0 |
| Q252ϕ | 1.6 | | 1.7 | | 1.8 | | | 2.1 | 1.5 | 3.0 |
| Q253ϕ | 1.7 | | 1.8 | | 1.9 | | | 2.2 | 1.6 | 3.0 |
| SRA6ϕ | 1.8 | 2.1 | | 1.5 | 2.1 | 1.5 | | 2.3 | 1.7 | 3.2 |
| SRA9ϕ | 1.4 | 1.7 | | 1.1 | 1.7 | | 3.4 | 2.0 | 1.3 | 2.8 |
| SRA15ϕ | 1.3 | 1.7 | | 1.0 | 1.6 | | 3.4 | 1.9 | 1.3 | 2.7 |
| SRA16ϕ | 1.7 | 2.0 | | 1.4 | 2.0 | | 3.7 | 2.2 | 1.6 | 3.1 |
| SRA26ϕ | 1.6 | 2.0 | | 1.4 | 1.9 | 1.4 | | 2.2 | 1.6 | 3.0 |
| SRA28ϕ | 1.7 | 2.0 | | 1.4 | 1.9 | 1.4 | | 2.2 | 1.6 | 3.0 |
| SRA32ϕ | 1.5 | 1.8 | | 1.2 | 1.8 | 1.3 | | 2.1 | 1.5 | 2.9 |
| SRA37ϕ | 2.0 | 2.3 | | 1.7 | 2.2 | 1.7 | | 2.5 | 1.9 | 3.3 |

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 KQ228ϕ 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 | AMI-CARBAZONE | ASULAM | DIURON | FLUMIOXAZIN | METOLACHLOR | METRIBUZIN | MSMA |
|---|---|---|---|---|---|---|---|---|---|---|
| **KQ228ϕ** | **-19%** | **-46%** | **-55%** | **-15%** | **-16%** | **-14%** | **-36%** | no reduction | **-25%** | **-21%** |
| Q208ϕ | -29% | | -33% | | -12% | | | -51% | -21% | -50% |
| Q240ϕ | -36% | | -28% | | -41% | | | -7% | -21% | -37% |
| Q250ϕ | -49% | | -53% | | -66% | | | -56% | -20% | -63% |
| Q252ϕ | -38% | | -11% | | no reduction | | | -6% | -20% | -26% |
| Q253ϕ | -29% | | -49% | | -52% | | | -18% | -51% | -54% |
| SRA6ϕ | -22% | -46% | | -58% | -5% | -66% | | no reduction | -30% | -42% |
| SRA9ϕ | -13% | -22% | | -29% | -37% | | -43% | no reduction | -2% | -28% |
| SRA15ϕ | no reduction | -73% | | -67% | -3% | | -74% | -53% | -25% | -60% |
| SRA16ϕ | -12% | -54% | | -36% | -36% | | -40% | -31% | no reduction | -46% |
| SRA26ϕ | -35% | -44% | | -26% | -27% | -21% | | -12% | -34% | -47% |
| SRA28ϕ | -69% | -90% | | -66% | -71% | -29% | | -104% | -75% | -103% |
| SRA32ϕ | -84% | -41% | | -36% | -134% | -61% | | -32% | -46% | -53% |
| SRA37ϕ | -31% | -31% | | -7% | -33% | -25% | | no reduction | -35% | -40% |

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 KQ228ϕ as the 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 control 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)**

The predicted yield reduction in the field trials is represented in a green-to-red scale. The predicted yield reduction is derived from the yield reduction for each field trial series. The percentage value compared to the untreated is indicated in the table (a negative value indicates a yield reduction compared to the untreated).

| VARIETY | 2,4-D | AMETRYN | AMETRYN+ TRIFLOXY-SULFURON | AMI-CARBAZONE | ASULAM | DIURON | METO-LACHLOR | METRI-BUZIN | MSMA |
|---|---|---|---|---|---|---|---|---|---|
| KQ228ϕ | -1% | -14% | | -11% | no reduction | -6% | -3% | no reduction | no reduction |
| Q250ϕ | | | no reduction | | | | no reduction | no reduction | -7% |
| SRA6ϕ | -4% | | | -22% | -9% | -11% | | no reduction | -11% |
| SRA9ϕ | | | | -8% | -3% | | | | |
| SRA15ϕ | | -14% | | | no reduction | | | | |
| SRA16ϕ | -4% | no reduction | | | -7% | no reduction | | | |
| SRA26ϕ | | | | -4% | | -17% | | | |
| SRA28ϕ | no reduction | -1% | | -1% | no reduction | | no reduction | | |

**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

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

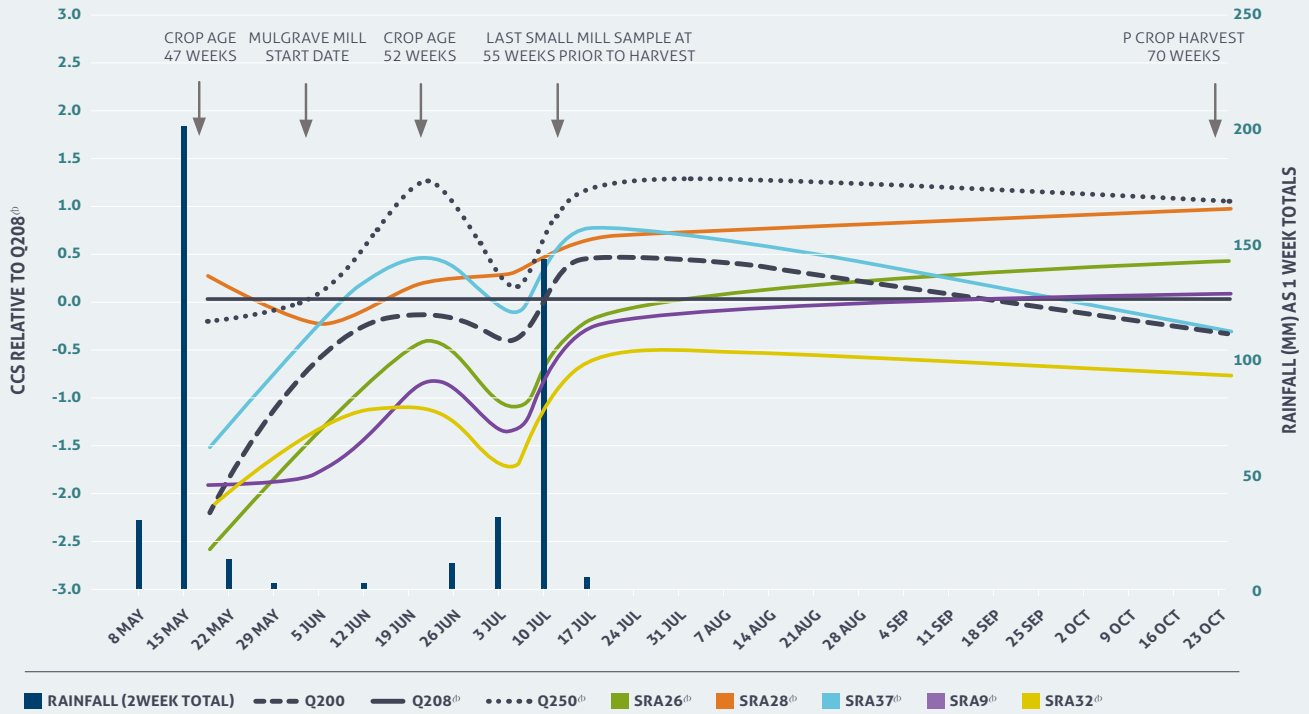
NO BIOMASS/YIELD REDUCTION IN POT/FIELD TRIAL COMPARED TO UNTREATED

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

# MATURITY PROFILES

**The commercial cane sugar (CCS) values for new varieties from Final Assessment Trials (FATs) are typically harvested in August to October at 12 months of age. They are a good guide to CCS potential compared to established varieties but provide limited insight into early season sugar or response to rainfall. To provide initial information on target harvest windows for new varieties, cane was sampled from a Mulgrave trial at two-week intervals from mid-May to mid-July. CCS values from the final harvest results at 70 weeks (a later crop age than originally targeted) were added to generate maturity curves over the 2022 season. These results are from one location in one season. Sampling will start in May 2024 to collect further maturity data of commercial sugarcane varieties.**

**FIGURE 1 CCS relative to Q208Φ - small mill samples from Mulgrave P Crop FAT**




In Figure 1, Q208Φ was used as the benchmark variety, similar to in 'the concept of' mill average, where CCS of the other varieties is expressed relative to Q208Φ.

Q200 exhibited a later maturing profile with initial CCS values below Q208Φ before becoming progressively more competitive as the season progressed. Q250Φ showed early maturing behaviour with CCS values above Q200 throughout the season.

While Q250Φ displayed a sharp decline in CCS following rainfall events in late June/early July (rainfall totals shown on right axis), its CCS remained above that of Q200 and Q208Φ. This response is indicative of varieties rapidly switching to vegetative growth (and hence diluting the CCS) before reverting back to maturation and sugar accumulation as conditions dry over the course of the season. The new varieties SRA26Φ, SRA28Φ, SRA37Φ, SRA9Φ and SRA32Φ were included to continue understanding their maturity profiles. SRA26Φ has a maturity profile most like Q200, although unlike the 2020 season SRA26Φ had lower CCS than Q200 through the early to mid-season but ultimately achieved better CCS than both Q200 and Q208Φ at harvest. This suggests harvesting SRA26Φ in the first round might be avoided and similar harvest times to Q200 should be targeted.

In previous seasons SRA28Φ has showed the most pronounced CCS changes in response to rainfall, though this season shows little response to the late June/early July weather event. SRA28Φ's CCS curve follows a similar trend to Q208Φ eventually becoming competitive with Q250Φ at harvest.

SRA37Φ's maturity profile resembles Q200 closely throughout the season indicating that harvesting during the mid-late season should be targeted. This is consistent with observations made during the 2020 season.

SRA9Φ's CCS values remain below Q208Φ throughout the early to mid-season, but become competitive with both Q200 and Q208Φ at harvest. SRA32Φ's CCS values remain lower than Q200 and Q208Φ throughout the season. The maturity profile of both SRA9Φ and SRA32Φ suggest that they are best harvested late season and that these two varieties may respond well to crop ripeners (if applied at the correct time and crop moisture after maturity testing).

**These results are from one location in one season**

Maturity data were collected in 2023 but are not presented here as the constant rain during the harvest season created fluctuations in CCS in response to the rain. These responses were similar to previous years but more extreme. However, the overall trends of these varieties was similar to those presented in Figure 1. Further data is being collected in 2024 to characterise the maturity profiles of new varieties.

# VARIETY ADOPTION IN EACH MILL AREA

**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 COASTAL*

Mossman Coastal averaged 68 t/ha and a CCS of 11.8 for the 2023 harvest season. The varietal composition for Mossman Coastal remains largely unchanged from the 2022 harvest year, with only minimal variations of up to approximately 2% in production for most varieties. The exceptions were Q208Ф and SRA26Ф. Even though Q208Ф decreased by just over 5%, it still remained the dominant variety at just under 44% of overall production driving mill average for both TCH and TSH.

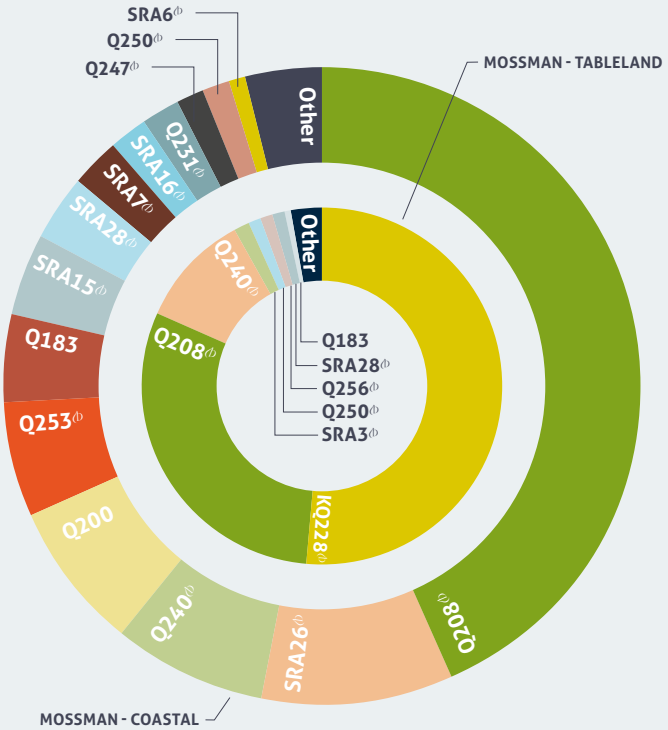
Other varieties that also decreased in production were Q240Ф, Q183, KQ228Ф, Q231Ф, and Q250Ф, where SRA26Ф, SRA28Ф, Q200, SRA15Ф and Q253Ф were grown in preference. The most significant increase in production was SRA26Ф, rising by 5.4% to almost 10% of overall production, surpassing Q253Ф, Q200 and Q240Ф to become the second most widely grown variety in the Mossman Coastal region. SRA28Ф also had a notable increase in production of 3% reflecting Mossman Coastal growers' increasing preference to adopt the newer more productive SRA varieties.

Q183, Q231Ф, Q240Ф, Q250Ф and SRA7Ф all achieved lower TCH and TSH than mill average for the 2023 season. Q253Ф equalled mill average for TSH but was greater for TCH. Newer varieties SRA6Ф, SRA15Ф, and SRA26Ф continued to perform strongly with both TCH and TSH above mill average. SRA28Ф exhibited impressive TCH and TSH above mill average in 2023, however, these figures mostly represented plant cane of smaller sample sizes totalling just over 11,000 tonnes of cane.

### MOSSMAN TABLELAND*

Tableland cane consigned to Mossman Mill averaged 99 t/ha and 13.5 CCS for the 2023 harvest season. The varietal composition had undergone little change since the 2022 season. KQ228Ф slightly increased in overall production and maintained its position as the dominant variety at 51%. The region saw a 5% increase in the production of Q240Ф, largely at the expense of Q208Ф which dropped in overall production by 7%. Variation in the production of all other varieties was approximately 1% or less. The overall production of KQ228Ф and Q208Ф was 80%, with their performance driving mill average for TCH and TSH. KQ228Ф influenced mill average during the first half of the harvest season, while Q208Ф influenced the latter half. Again, Q240Ф has shown strong TCH results in production since the 2019 harvest year. Its TSH results in 2023 also exceeded mill average, unlike in 2022. Despite this, Q240Ф remained in third position for overall production. The only other major variety to exceed mill average for both TCH and TSH was KQ228Ф.

* Data for variety breakdown between Coastal and Tableland was supplied by Far Northern Milling Pty Ltd – Mossman Mill.




**MOSSMAN - COASTAL**

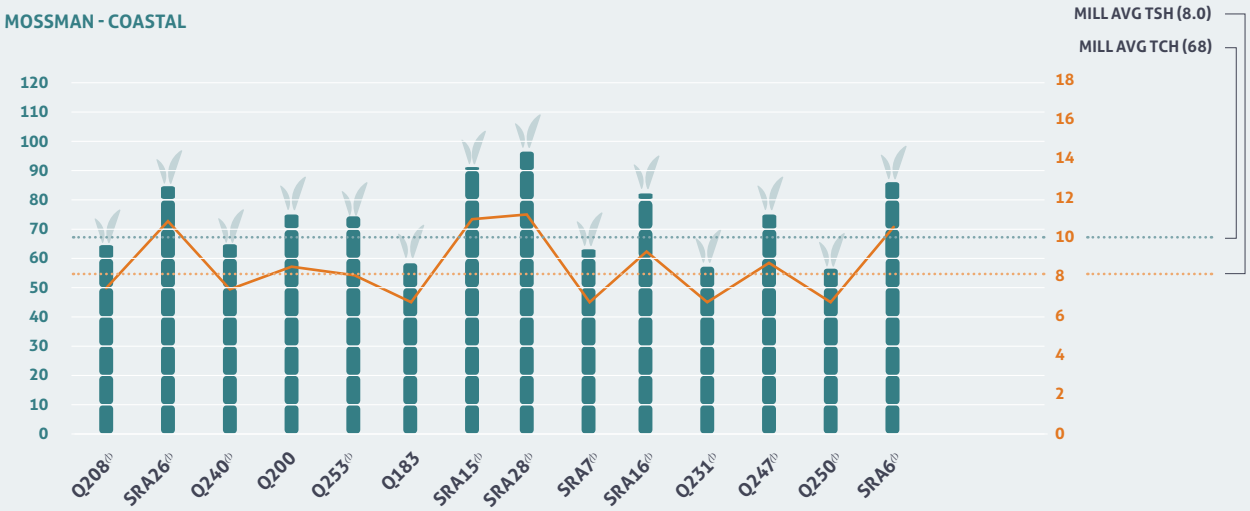
| Variety | % Tonnes |
|---|---|
| Q208Ф | 43.8 |
| SRA26Ф | 9.8 |
| Q240Ф | 7.5 |
| Q200 | 7.5 |
| Q253Ф | 5.9 |
| Q183 | 4.5 |
| SRA15Ф | 4.1 |
| SRA28Ф | 3.3 |
| SRA7Ф | 2.5 |
| SRA16Ф | 2.0 |
| Q231Ф | 1.9 |
| Q247Ф | 1.3 |
| Q250Ф | 1.3 |
| SRA6Ф | 1.1 |
| Other | 3.6 |

**MOSSMAN - TABLELAND**

| Variety | % Tonnes |
|---|---|
| KQ228Ф | 51.5 |
| Q208Ф | 30.2 |
| Q240Ф | 10.4 |
| SRA3Ф | 1.2 |
| Q250Ф | 1.1 |
| Q256Ф | 1.1 |
| SRA28Ф | 1.1 |
| Q183 | 0.8 |
| Other | 2.5 |

# VARIETY ADOPTION IN EACH MILL AREA (CONT)

## MOSSMAN - COASTAL




## MOSSMAN - TABLELAND

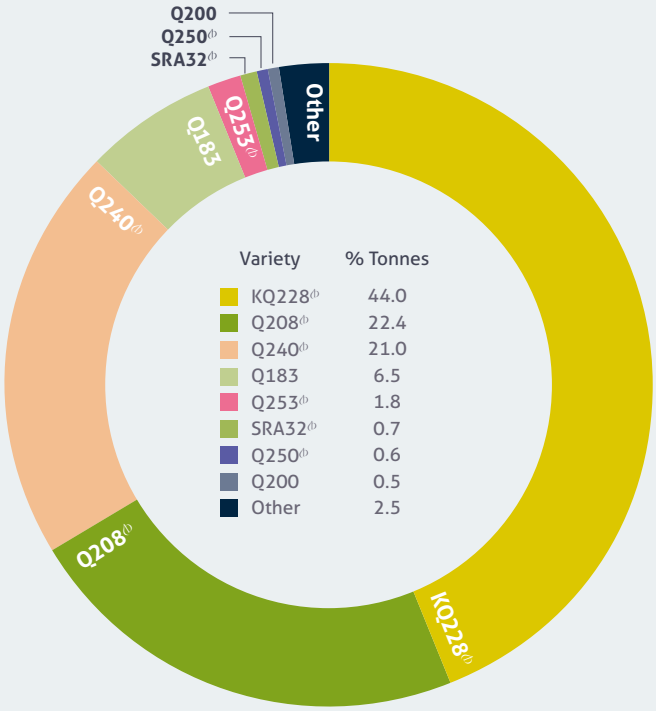
## Tableland

The Tableland mill processed 622,219 tonnes of MSF Tableland consigned cane from 6,947 hectares in 2023. The average yield of 90 t/ha was 14 tonnes lower than the 2022 season average while the CCS of 13.9 was a slight increase on the 2022 average. This resulted in an overall decrease in TSH from 14.3 in 2022 to 12.4 for the 2023 harvest year.

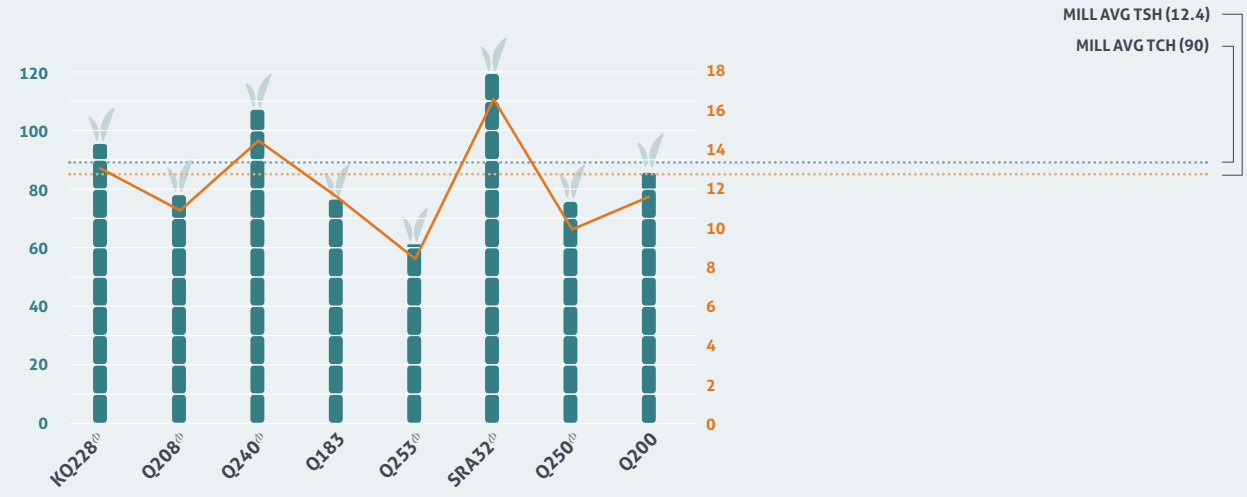
KQ228Φ remained the dominant variety with an unchanged 44% of tonnes delivered. Q208Φ also remained stable at 22% of production, while Q240Φ increased its production by 5% reaching 21%. These three varieties comprised 87% of the overall production. The poorer performance of Q208Φ in 2023 contributed to the reduction in the TCH and TSH mill average, as did KQ228Φ to a lesser extent. While both KQ228Φ and Q240Φ performed above mill average for TCH and TSH, Q240Φ maintained its strong yield of 107 TCH from the 2022 harvest season whereas KQ228Φ dropped its yield from 112 TCH in 2022 to 96 TCH in 2023.

Q253Φ's continual decline in production reflected its disappointing performance relative to the three major varieties of KQ228Φ, Q208Φ and Q240Φ for the third season in a row. Q183 also continued to decrease in popularity contracting slightly by 1.3%.

SRA32Φ's impressive sugar yield advantage over the established varieties will likely increase its popularity on the Tableland. This yield advantage over the established varieties may be less dramatic as the ratoon age increases, however, it is expected to remain more productive.




### TABLELAND MILL



# VARIETY ADOPTION IN EACH MILL AREA (CONT)

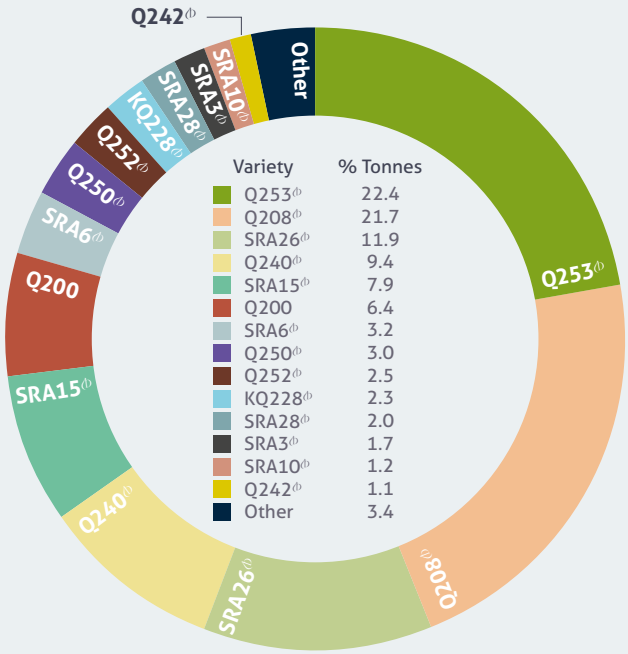
## Mulgrave

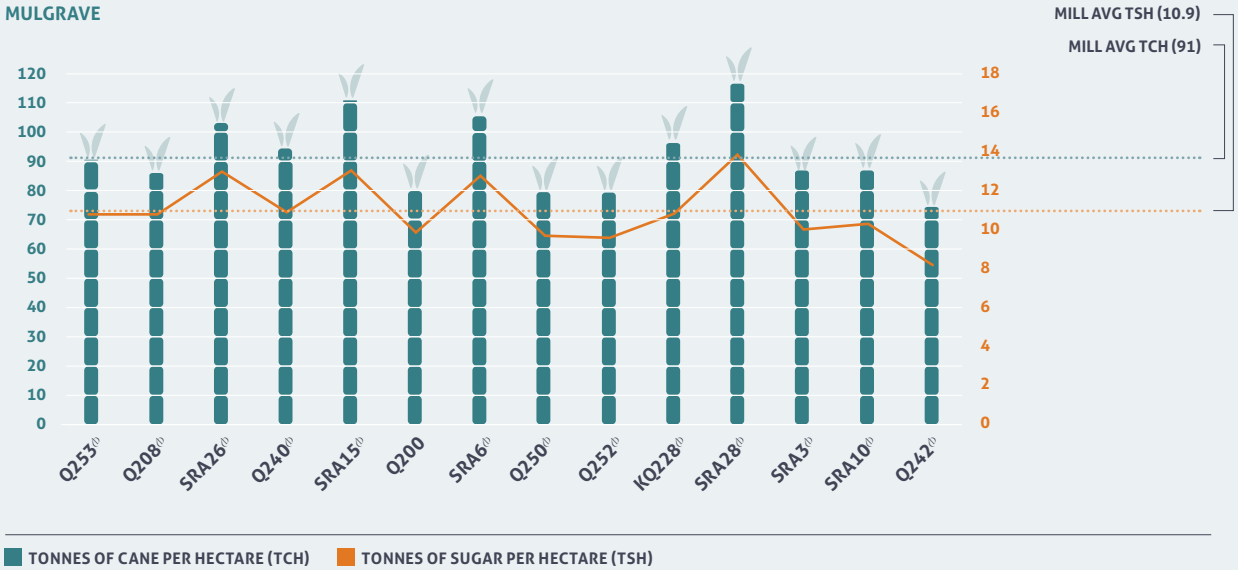
The Mulgrave mill reported a total of 1,003,874 tonnes of cane from 11,036 hectares in 2023 with an average yield of 91 t/ha and CCS of 11.98. The mill average yield for 2023 was equal to 2022 but 0.3 units below the 2022 CCS average. This resulted in a slight decrease in average TSH from 11.2 in 2022 to 10.9 in 2023.

Q208Φ continued to decrease in overall production by a further 3% compared to 2022. Q253Φ remained the dominant variety for the second year despite a decrease in production by 1%. SRA26Φ was the most widely planted variety in Mulgrave in 2022 resulting in it displacing Q240Φ to now rank third in overall production at almost 12% in 2023. These top three varieties contributed to 56% of overall production for Mulgrave.

The continued adoption of the newer varieties SRA6Φ, SRA15Φ, SRA26Φ, and SRA28Φ was at the expense of many established varieties including Q208Φ, Q240Φ, Q250Φ and Q252Φ which have all seen a decrease in popularity over consecutive years. This is reflected in Q208Φ, Q250Φ and Q252Φ again all performing below mill average for TCH and TSH. While Q240Φ performed at mill average it has likely reached its peak popularity as any further expansion would push it onto less favourable growing conditions for Q240Φ.

Recently released varieties SRA6Φ, SRA15Φ, SRA26Φ, and SRA28Φ will continue in popularity as they continue to perform well-above the mill average for TCH and TSH. However, growers still need to consider the strong performance of these newer varieties with some caution as they are mostly from plant cane and some young ratoon crops except for SRA6Φ which now has a good representation of plant through to older ratoons.



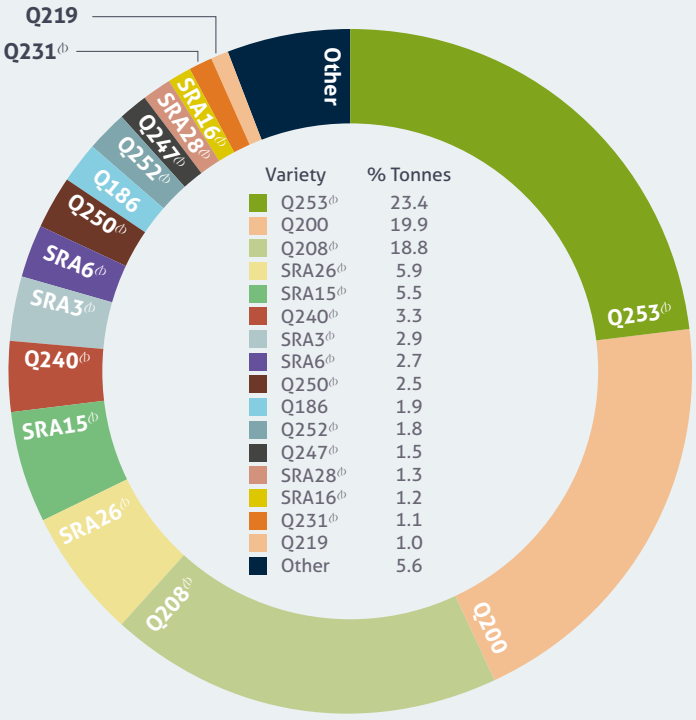
## South Johnstone

In 2023 the South Johnstone region harvested 1,469,136 tonnes from 21,119 hectares. The TCH mill average of 73 t/ha was 8 t/ha lower than 2022. CCS was the same as the 2022 season at 11.6. This resulted in an overall decrease in average TSH from 9.5 in 2022 to 8.5 in 2023.

The varietal composition for South Johnstone in 2023 showed an increase in production of Q253Φ, SRA6Φ, SRA15Φ, SRA26Φ, and SRA28Φ when compared to 2022. This resulted in newer varieties SRA6Φ, SRA15Φ, SRA26Φ and SRA28Φ representing 15% of South Johnstone's overall production which was an increase from 7% in 2022, whereas Q253Φ, Q200, and Q208Φ remained dominant varieties, comprising a combined 62% of production.

SRA26Φ showed the largest increase in production relative to 2022 with an increase of 4% moving it to the fourth most widely grown variety across South Johnstone. Both Q253Φ and SRA15Φ experienced modest increases in production of 2%. The production of Q208Φ has decreased by 3%, with smaller declines in production of Q200 and Q250Φ.

Q200, Q208Φ, Q240Φ and Q253Φ all returned production figures equal to or near the mill average. In contrast, only the newer varieties SRA6Φ, SRA15Φ, SRA26Φ, and SRA28Φ performed well above the mill average for both TCH and TSH. However, growers still need to consider the strong performance of these newer varieties with some caution as they are mostly from plant cane and some young ratoon crops except for SRA6Φ which now has a good representation of plant through to older ratoons.




**SOUTH JOHNSTONE**

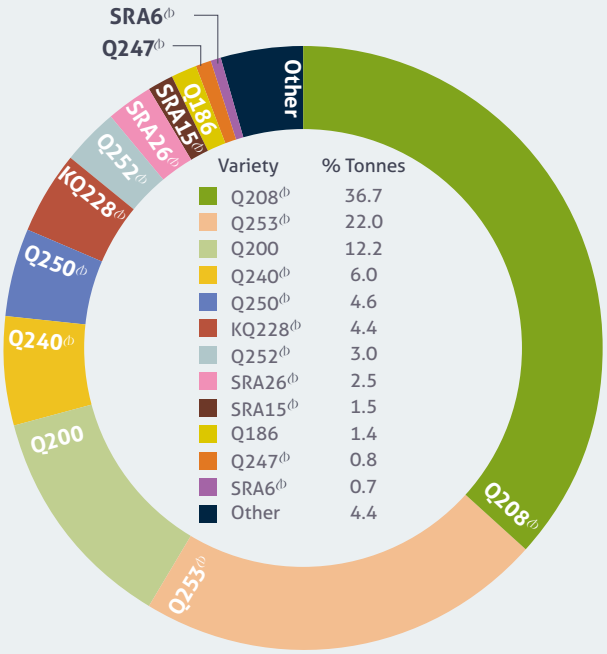
# VARIETY ADOPTION IN EACH MILL AREA (CONT)

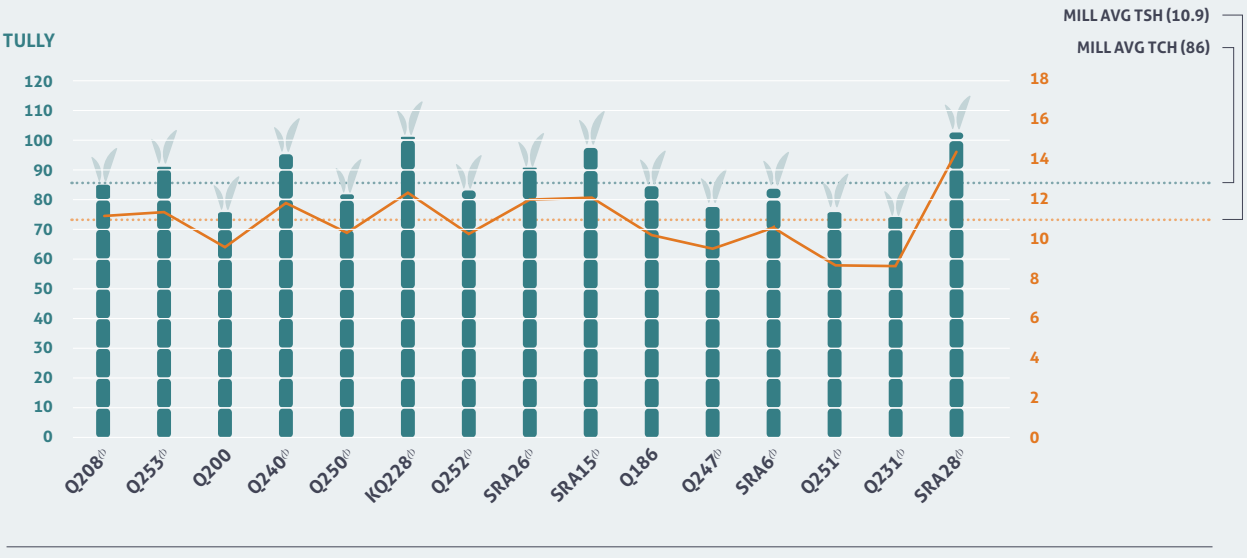
## Tully

In 2023, the Tully region harvested 29,439 hectares with a yield of 2,536,924 tonnes. The TCH result of 86 t/ha was 12 t/ha lower than the 2022 production figures, though the CCS was just over 0.4 units above the 2022 figure at 12.7. The lower yield has contributed to a decrease in average TSH from 12.0 in 2022 to 10.9 in 2023.

The varietal composition for Tully has remained relatively stable over the past five years, with only minimal changes of approximately 1% in production for most varieties. The biggest decreases were seen in Q200 and Q250Φ by almost 3% and 2% respectively. While Q253Φ had the most notable increase in overall production of almost 5% for a second consecutive year, it remained at second position in overall production. SRA26Φ's production only increased by 1.3% placing it eighth for overall production in 2023. This was a modest increase when compared to its rate of adoption in the Mossman, Mulgrave and South Johnstone regions. Q208Φ remained the dominant variety in Tully at 37% with its performance largely driving both the TCH and TSH mill averages.

Of the established varieties, only Q240Φ, Q253Φ, and KQ228Φ outperformed the mill average for both TCH and TSH, while Q200, Q250Φ and Q252Φ performed well-below mill average for either TCH, TSH or both. Comparing the new varieties SRA15Φ, SRA26Φ, and SRA28Φ to mill average, all performed at or above mill average for TCH and TSH. These are smaller sample sizes and don't include older ratoons and collectively only make up 4% of Tully's overall cane production.



# SBZ1 NORTHERN REGION – LIST OF VARIETIES APPROVED FOR PLANTING

**Each year the Northern Regional Variety Committee (RVC) review the Northern variety list for planting and ratooning. This supports Northern growers meeting one aspect of General Biosecurity Obligation, in addition to regional disease management of major diseases for Sugarcane Biosecurity Zone 1 (SBZ1), most importantly leaf scald.**

**Varieties removed by the Northern RVC from the previous planting list were identified to either increase the disease risk for the Northern region and/or their disease susceptibility reduces productivity below economic thresholds. These varieties are no longer available for planting and should be ratooned only. More productive and resistant varieties are available for planting from each of the Northern productivity service organisations.**

**If a variety does not exist in the table below, it is not approved for planting in the Northern region.**

| VARIETY | YEAR APPROVED IN NORTH | COMMENTS |
|---|---|---|
| SRA37Φ | 2022 | |
| SRA32Φ | 2022 | |
| SRA28Φ | 2020 | |
| SRA27 | 2019 | Approved for the Tablelands only; Pachymetra intermediate-susceptible. |
| SRA26Φ | 2019 | |
| SRA25Φ | 2019 | Red rot susceptible. |
| SRA16Φ | 2018 | |
| SRA15Φ | 2018 | |
| SRA14Φ | 2022 | Pachymetra resistant option for El Arish growers only, however, most of the recently released Northern varieties are all Pachymetra resistant and are more productive choices. |
| SRA10Φ | 2017 | |
| SRA9Φ | 2022 | |
| SRA7Φ | 2016 | |
| SRA6Φ | 2016 | |
| SRA5Φ | 2022 | LOW CCS variety for use with growth regulators only under instruction of the Tully Variety Management Group. |
| SRA3Φ | 2016 | |
| Q256Φ | 2013 | Pachymetra intermediate-susceptible. |
| Q253Φ | 2015 | Yellow spot susceptible. |
| Q252Φ | 2015 | |
| Q251Φ | 2012 | Leaf scald intermediate-susceptible and smut susceptible. |

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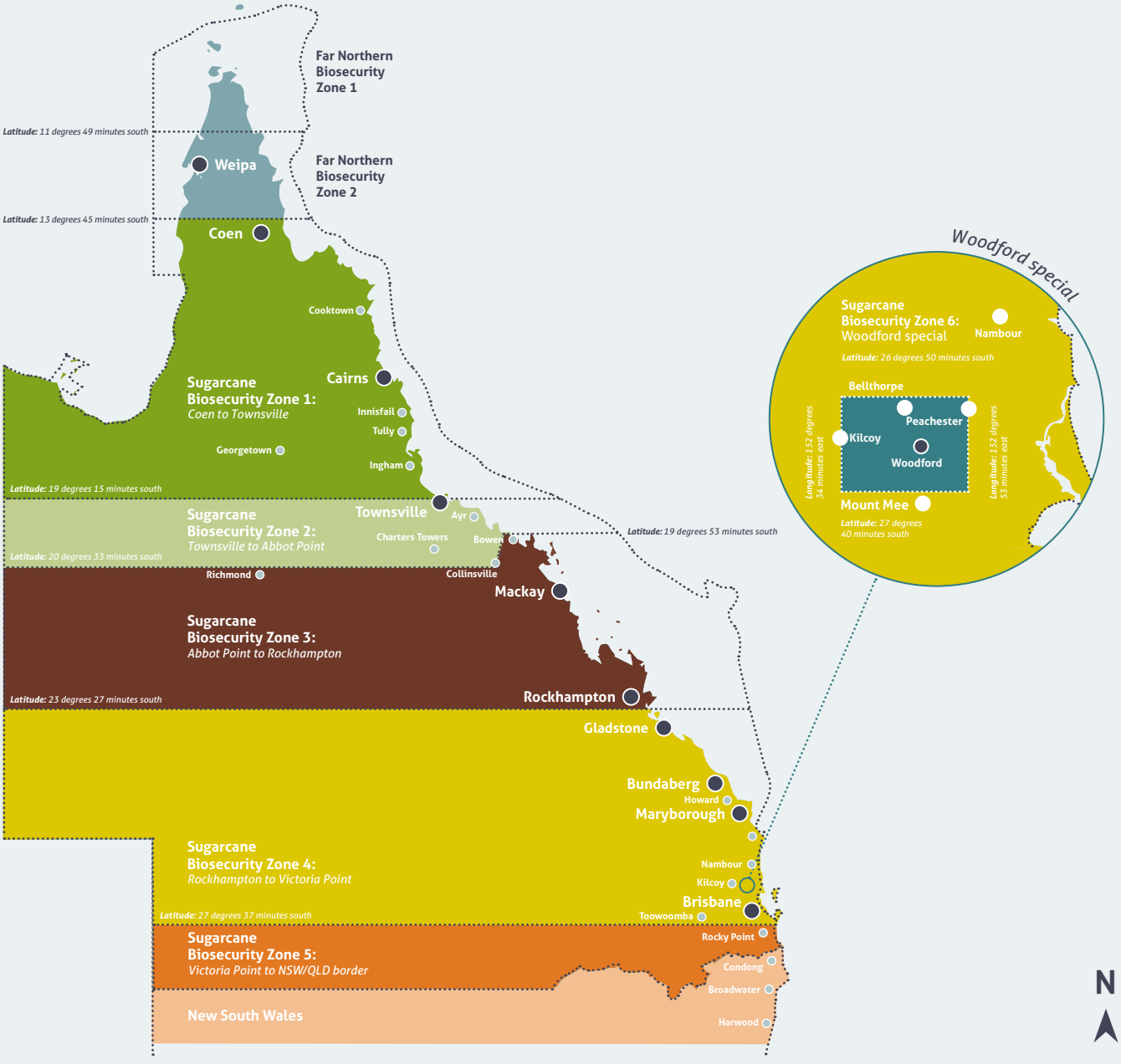
# SBZ1 NORTHERN REGION – LIST OF VARIETIES APPROVED FOR PLANTING (CONT)

| If a variety does not exist in the table below, it is not approved for planting in the Northern region. | | |
|---|---|---|
| **VARIETY** | **YEAR APPROVED IN NORTH** | **COMMENTS** |
| Q250Φ | 2012 | |
| Q247Φ | 2015 | Yellow spot susceptible. |
| Q242Φ | 2015 | |
| Q241Φ | 2010 | |
| Q240Φ | 2013 | |
| MQ239Φ | 2015 | |
| Q238Φ | 2012 | Chlorotic streak and yellow spot susceptible. |
| Q237Φ | 2008 | Smut and Pachymetra susceptible. |
| Q232Φ | 2008 | |
| Q231Φ | 2006 | |
| Q230Φ | 2006 | Smut susceptible. |
| KQ228Φ | 2007 | Chlorotic streak susceptible. |
| Q219 | 2004 | |
| Q208Φ | 2007 | |
| Q200 | 2001 | |
| Q190 | 2005 | |
| Q187 | 1999 | Smut and red rot susceptible. |
| Q186 | 1999 | Smut susceptible. |
| Q183 | 2006 | Chlorotic streak susceptible. |
| Q138 | 1986 | Smut susceptible. |

# 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 organisation 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 SRA's website. **Visit 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:
  - > Atradex® 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.

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