GUIDE TO MODDUS™ APPLICATION

WHAT IS IT?

Moddus™ is a foliar absorbed plant growth regulator (PGR) that has been shown to increase sugar yields. The active ingredient in Moddus™ is trinexapac-ethyl which works by inhibiting the production of gibberellic acid, a plant hormone responsible for cell elongation. Moddus™ is used for harvest management to increase sugar yield.

Information provided in this fact sheet is based on trials conducted in Wet Tropics regions. Please consult your local agronomist if interested in using PGRs in your farming system.

WHY CONSIDER MODDUS™?

Moddus™ gives growers opportunities to improve early and late CCS in their crops, as a harvest management tool and to increase grower and industry profitability.

HOW IS IT APPLIED AND WHAT RATE?

Moddus™ can be applied via aerial or ground rig though most commonly applied via aerial application due to accessibility of the crop.

Moddus™ is applied at a rate of 800ml/Ha to healthy actively growing sugarcane crops between 5 and 8 weeks prior to harvesting. For aerial application apply 25-60ml of water per hectare using a higher water rate in dense crops, for ground rig application water rates are recommended at 150-500L per hectare. Moddus™ will be rain fast within two hours of application.

It is not advised to apply Moddus™ to cane that is flowering or under stress from lack of water or lodge cane. Sugarcane needs to be in an actively growing phase.

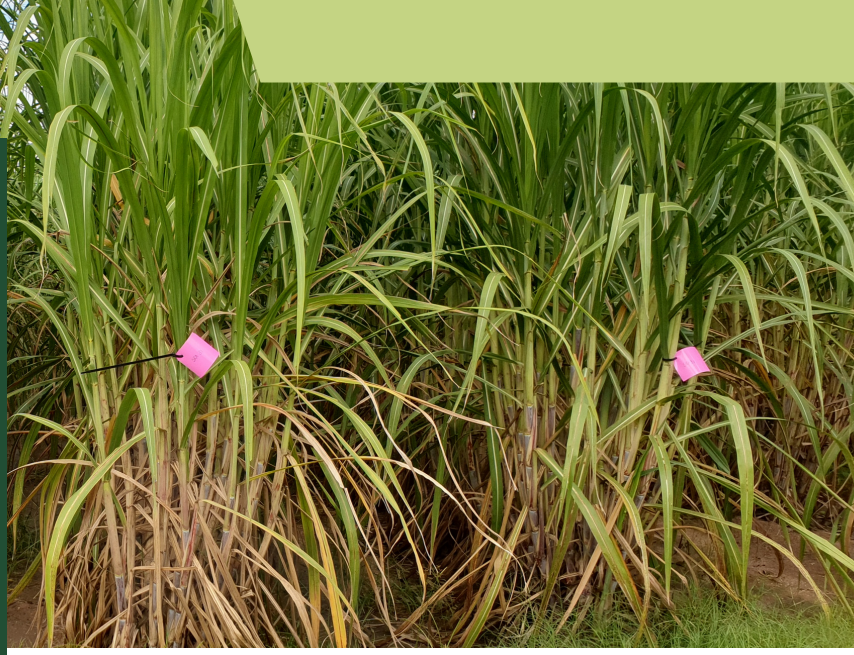
WHAT CCS INCREASE CAN I EXPECT?

Below is a table of trial data that looks at comparing different varieties and what the CCS increase could be during the coming weeks after application.

Treatment	Variety	4 WKS	6 WKS	8 WKS	10 WKS	12 WKS
MODDUS	Q208	7.82	10.02	11.21	12.04	12.90
No Spray	Q208	8.31	8.63	9.91	9.84	11.04
CCS Difference		-0.49	1.39	1.30	2.20	1.86
MODDUS	Q231	9.78	11.97	11.22	12.62	13.08
No Spray	Q231	9.05	9.50	10.88	11.42	11.74
CCS Difference		0.73	2.47	0.34	1.19	1.34
MODDUS	Q242	9.43	10.52	12.19	12.86	13.05
No Spray	Q242	8.89	9.94	11.71	11.88	11.94
CCS Difference		0.54	0.58	0.48	0.98	1.11
MODDUS	Q253	9.73	10.92	11.63	12.64	12.96
No Spray	Q253	8.81	9.61	10.91	11.39	11.63
CCS Difference		0.92	1.31	0.72	1.25	1.33
MODDUS	SRA10	9.23	11.31	12.11	12.78	13.55
No Spray	SRA10	9.02	9.04	9.69	11.45	12.11
CCS Difference		0.21	2.27	2.42	1.33	1.44
MODDUS	SRA14	7.81	9.02	11.94	12.15	11.94
No Spray	SRA14	7.72	8.46	9.84	10.39	11.22
CCS Difference		0.09	0.55	2.09	1.75	0.72
MODDUS	SRA5	6.69	8.41	9.59	11.03	10.90
No Spray	SRA5	6.68	6.52	8.51	8.73	10.16
CCS Difference		0.01	1.88	1.08	2.30	0.74

WHAT HAPPENS IF I CAN'T HARVEST MY TREATED CANE?

The crop will outgrow the Moddus™ application with no detrimental effects to the crop. In fact, some studies done in Brazil have suggested that Moddus™ applications can have beneficial effects on improving roots growth. Other studies have found that in can also improve tiller and reduce suckering in ratoon cane.



WHAT VARIETIES SHOULD I TARGET EARLY IN THE SEASON?

Trial work conducted in various Wet Tropics regions showed that certain varieties were more responsive to Moddus™ than others and it should be noted that varieties that have flowered will not respond well to application due to sugarcane growth process. Below is a table of some of the varieties that were studied during the trial phase.

Responsive varieties	MQ239, WSRA24, Q183, Q215, Q219, Q231, MQ238, Q240, Q247, Q253, SRA5, SRA6, SRA10, SRA14, SRA26 (could be considered for the first 2 rounds), SRA28
Less responsive varieties	Q200, Q208, Q242 (when it is heavily flowered), Q250, Q252, SRA31
Non-responsive varieties	KQ228, Q226, Q232 (when it is heavily flowered)

Note: Responsiveness of variety may differ between blocks and locations. Do not apply to varieties that have flowered because response is usually low. The above rating is only an indicator based upon very limited data in some cases. No responsibility will be taken concerning the chemical performance on different varieties.

MODDUS™ BEST PRACTICE TO MAXIMISE RESPONSES

- Ensure crop is actively growing and not flowering.
- Ensure crop is not stressed from disease, YCS, insect damage, poor nutrition, waterlogging or frost.
- To aid uptake via the foliage, ensure at least 8 green leaves are present. Avoid application to recently lodged cane until upright growth has recommenced.
- Avoid applications when conditions have been hot and dry in the weeks prior to application (greater than 30 degrees Celsius and less than 50% relative humidity).
- Time applications prior to, or right at the commencement of flower initiation. If arrows/spears are already visible, then the optimal timing has already passed.
- Understand the ripening properties of each variety. Moddus gives the greatest percentage CCS increase when applied to varieties that are traditionally low in early sugar content.
- Do not harvest for 5 weeks after application.
- Do not graze or cut for stock food for 5 weeks after application.

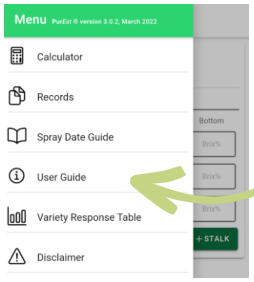
Australian Government | Reef Trust | Great Barrier Reef Foundation | The Coca-Cola Foundation | WWF

Project Catalyst is funded by the partnership between the Australian Government's Reef Trust and the Great Barrier Reef Foundation, the Coca-Cola Foundation and WWF-Australia.

HOW CAN I TEST FOR CROP MATURITY?

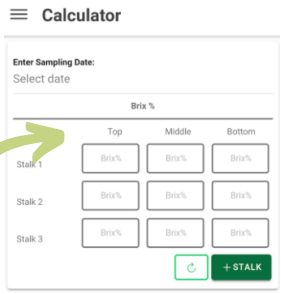
PurEst® is a free smartphone application that estimates whole-stalk juice purity from Brix% readings taken with a hand-held refractometer by applying a mathematical relationship between these readings and laboratory determined whole-stalk juice purity. This relationship has been established through research on over 1 500 cane samples submitted to the South African Sugarcane Research Institute (SASRI) cane testing laboratories.

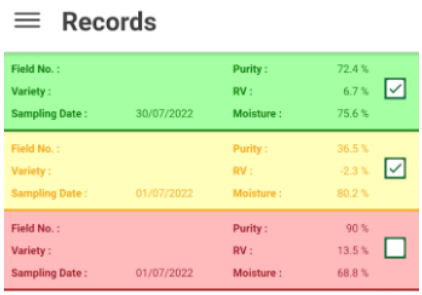
While the tool has been developed in South Africa the practical cane quality management recommendations based on the known whole-stalk juice purity efficacy thresholds are still applicable to the Australian industry.



Check out the helpful User Guide

Select 3+ stalks and begin testing





PurEst® estimates harvest-readiness parameters by estimating RV% (approximately equivalent to CCS) and stalk moisture% in unburned stalks, stripped of all leaf material and topped at the natural breaking point.

PurEst® is meant for on-farm use to assist growers in chemical ripening, late-season quality maintenance and harvest decision-making and cannot replace the accredited analytical testing provided by CTS on cane consignments delivered to the mill.

To get started with PurEst®, the user requires a handheld-refractometer for taking Brix% readings and an Android or iOS smartphone/tablet. Follow the in-app user guide to collect your cane samples and test in-field. Use the QR Codes below to download the app and get started.

Android - Google Play

iOS - Apple iStore

Use these links to download the app!

Content: Van Heerden 2021 SASRI & Modality Apps
https://sasri.org.za/wp-content/uploads/2022/08/4.7-Determining-crop-maturity-for-purposes-of-cane-quality-management.pdf