

## SUGARCANE RIPENERS

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**Response of HoCP 14-885 to two application timings and several ripener treatments.** A study was conducted in 2023 at Harper Planting Partnership in Cheneyville, LA to evaluate the response of drought stressed, first ratoon HoCP 14-885 to two application timings and several ripener treatments. The experimental design was a randomized complete block design with 4 replications, and the plot size was seven rows wide (40.8 ft.) X 100 ft. in length. Treatments were applied at 2 gallons per acre at 10 feet above the crop with an DJI Agras T10 spray drone on August 17, 2023, at two application timings: morning or afternoon. Morning treatments were applied from 6:55 am to 7:38 am and afternoon treatments were applied from 1:10 pm to 1:50 pm. Treatments included Roundup PowerMax3 at 5 oz/A, Roundup PowerMax3 at 5 oz/A + Interactive adjuvant at 0.25%v/v, PowerMax3 at 7.5 oz/A, and Roundup PowerMax3 at 2.5 oz/A + Moddus at 11 oz/A. An untreated check was included for comparison. A hand-cut, 10-stalk sample from each plot was harvested at 13, 27, and 46 days after treatment (DAT) and was shredded and processed at the Sugar Research Station's Sucrose Lab to determine theoretical recoverable sugar (TRS, lb per ton of cane) by means of wet chemistry. All ripener treatments significantly increased TRS compared to the untreated check for the 3 sample dates regardless of morning or afternoon application. (Table 1).

Table 1. Theoretical recoverable sugar response of first-ratoon, drought stressed HoCP 14-885 at 13, 27, and 46 days after treatment for two application timings and several ripener treatments in Cheneyville, LA in 2023.

Time of Application <sup>1</sup>	Treatment <sup>2</sup>	Rate/oz A	TRS 13 DAT (lb/ton)	TRS 27 DAT (lb/ton)	TRS 46 DAT (lb/ton)
Morning	RU PowerMax3	5	220 a <sup>3</sup>	288 a <sup>3</sup>	330 a
Morning	RU PowerMax3 + Interactive	5 + 0.25% v/v	216 a	287 a	336 a
Morning	RU PowerMax3	7.5	219 a	293 a	331 a
Morning	RU PowerMax3 + Moddus	2.5 + 11	213 a	272 a	317 a
Afternoon	RU PowerMax3	5	223 a	284 a	336 a
Afternoon	RU PowerMax3 + Interactive	5 + 0.25% v/v	215 a	290 a	331 a
Afternoon	RU PowerMax3	7.5	225 a	290 a	322 a
Afternoon	RU PowerMax3 + Moddus	2.5 + 11	210 ab	275 a	314 a
	Untreated check		190 b	222 b	253 b

<sup>1</sup> Morning treatments were applied from 6:55 am to 7:38 am and afternoon treatments were applied from 1:10 pm to 1:50 pm.

<sup>2</sup> Treatments applied August 17, 2023, at 2 gallons per acre with a DJI Agras T10 spray drone.

<sup>3</sup> Means within a column followed by the same lowercase letter are not significantly different at P=0.05.

**Efficacy of Beyond Xtra as a Sugarcane Ripener** A study was conducted in 2023 at the Sugar Research Station in St. Gabriel, LA to evaluate the efficacy of Beyond Xtra (Imazamox) as a

ripeners. The experimental design was a randomized complete block design with 4 replications, and the plot size was two rows wide (12 ft.) X 40 ft. in length. Treatments were applied using a tractor mounted boom sprayer to second ratoon L 01-299 on August 28, 2023. Treatments included Beyond Xtra at 1, 2, and 4 oz/A as well as Roundup PowerMax3 at 5 oz/A and an untreated check. Induce non-ionic surfactant was added to all Beyond Xtra treatments at 0.25% v/v. A hand-cut, 10-stalk sample from each plot was harvested at 1, 2, 3, 4, 5 and 6 weeks after treatment (WAT) and was shredded and processed at the Sugar Research Station's Sucrose Lab to determine theoretical recoverable sugar (TRS, lb per ton of cane) by means of wet chemistry. On September 9, 2023, plots were harvested following the 6-week sampling with a sugarcane chopper harvester and were loaded into a wagon equipped with load cells, and the weight of each plot was recorded. The TRS level for the 4 oz/A Beyond Xtra treatment at the 4 and 5 WAT sampling dates provided a numeric increase above the untreated control, and its increase in TRS was similar to the Roundup PowerMax3 treatment (Table 2). Cane yield (tons of cane/A), TRS, and Sugar yield (pounds of sugar/A) was similar to for Beyond Xtra treatments to the untreated check at 6 WAT (Table 3).

Table 2. Effect of Beyond Xtra on theoretical recoverable sugar for second stubble L 01-299 in St. Gabriel, LA in 2023.

Treatment <sup>1</sup>	Rate/oz A	TRS 1 WAT <sup>2</sup> (lb/ton)	TRS 2 WAT (lb/ton)	TRS 3 WAT (lb/ton)	TRS 4 WAT (lb/ton)	TRS 5 WAT (lb/ton)	TRS 6 WAT (lb/ton)
Beyond Xtra	1	158	172	183 b	178 c	226	251
Beyond Xtra	2	154	179	184 b	184 bc	226	254
Beyond Xtra	4	153	166	193 ab	202 ab	231	252
RU PowerMax3	5	166	187	206 a	216 a	245	265
Untreated check		151	173	186 b	187 bc	222	250

<sup>1</sup> Treatments applied August 28, 2023.

<sup>2</sup> Weeks after treatment.

<sup>3</sup> Means within a column followed by the same lowercase letter are not significantly different at P=0.05.

Table 3. Effect of Beyond Xtra on sugarcane yield parameters 6 weeks after treatment for second stubble L 01-299 in St. Gabriel, LA in 2023.

Treatment <sup>1</sup>	Rate/oz A	Cane Yield (tons/A)	TRS (lb/ton)	Sugar Yield (lb/A)
Beyond Xtra	1	40.1	251	10090
Beyond Xtra	2	38.9	254	9878
Beyond Xtra	4	36.7	252	9189
RU PowerMax3	5	40.0	265	10657
Untreated check		39.6	250	9904

<sup>1</sup> Treatments applied August 28, 2023, and harvested October 9, 2023.

<sup>2</sup> Means within a column followed by the same lowercase letter are not significantly different at P=0.05.

**Impact of Surfactant on Beyond Xtra Efficacy** A study was conducted in 2023 at the Sugar Research Station in St. Gabriel, LA to evaluate the impact of surfactant on the efficacy of Beyond Xtra (Imazamox). The experimental design was a randomized complete block design with 4 replications, and the plot size was two rows wide (12 ft.) X 40 ft. in length. Treatments were applied using a tractor mounted boom sprayer to first ratoon L 01-299 on September 8, 2023. Treatments included Induce non-ionic surfactant (NIS) at 0.25% v/v and Agridex crop oil concentrate (COC) at 1%v/v and were added to Beyond Xtra (Imazamox) at 1 oz/A. Roundup PowerMax3 at 5 oz/A and an untreated check were also added for comparison. A hand-cut, 10-stalk sample from each plot was harvested at 31 DAT and was shredded and processed using Spectra Cane NIR at the Sugar Research Station's Sucrose Lab to determine theoretical recoverable sugar (TRS, lb per ton of cane). Plots were harvested following the sampling with a sugarcane chopper harvester and were loaded into a wagon equipped with load cells, and the weight of each plot was recorded. Sugarcane TRS similarly for the NIS and COC Beyond Xtra treatments and was equal to the untreated check (Table 4).

Table 4. Plantcane HoCP 14-885 response to Beyond Xtra and two surfactants treatments in St. Gabriel, LA in 2023.

Treatment <sup>1</sup>	Rate/oz A	Cane Yield (tons/A)	TRS (lb/ton)	Sugar/A (lb/ton)
Beyond Xtra + NIS	1 oz	38.6	195 b <sup>2</sup>	7491
Beyond Xtra + COC	1 oz	34.3	201 b	6866
RU PowerMax3	5 oz	35.2	214 a	7449
Untreated check		35.0	201 b	6866

<sup>1</sup> Treatments applied September 8, 2023. NIS = Induce Non-Ionic Surfactant at 0.25% v/v and COC = Agridex Crop Oil Concentrate at 1% v/v. Plots sampled and harvested 31 days after treatment.

<sup>2</sup> Means within a column followed by the same lowercase letter are not significantly different at P=0.05.

**Response of L 15-306 to Glyphosate Ripener** A study was conducted in 2023 at the Sugar Research Station in St. Gabriel, LA to evaluate L 15-306 response to glyphosate ripener. The

experimental design was a randomized complete block design with 4 replications, and the plot size was two rows wide (12 ft.) X 30 ft. in length. Treatments were applied using a tractor mounted boom sprayer. Treatments evaluated included Roundup PowerMax3 (5oz/A) and Roundup PowerMax3 + Moddus (2.5 oz + 11oz/A). An untreated check was included for comparison. A hand-cut, 10-stalk sample from each plot was harvested at 31 days after treatment (DAT) and was processed using Spectra Cane NIR to determine theoretical recoverable sugar (TRS, lb per ton of cane). After sampling was completed, plots were harvested following the sampling with a sugarcane chopper harvester and were loaded into a wagon equipped with load cells, and the weight of each plot was recorded. Sugar yield (lbs/A) was calculated as the product of TRS and cane yield (tons/A). The Roundup PowerMax3 + Moddus treatment significantly increase TRS as compared to the untreated check (Table 5).

Table 5. L 15-306 response to ripener treatments in St. Gabriel, LA in 2023.

Treatment <sup>1</sup>	Rate/oz A	Cane Yield (tons/A)	TRS (lb/ton)	Sugar/A (lb/ton)
RU PowerMax3	5	45.5 ab <sup>2</sup>	246 b	11206
RU PowerMax3 + Moddus	2.5 + 11	39.3 b	258 a	10097
Untreated check		50.7 a	243 b	12301

<sup>1</sup> Treatments applied September 8, 2023, and harvested 31 days after treatment.

<sup>2</sup> Means within a column followed by the same lowercase letter are not significantly different at P=0.05.

**Response of HoL 15-508 to Glyphosate Ripener** A study was conducted in 2023 at the Sugar Research Station in St. Gabriel, LA to evaluate HoL 15-508 response to glyphosate ripener. The experimental design was a randomized complete block design with 4 replications, and the plot size was two rows wide (12 ft.) X 30 ft. in length. Treatments were applied using a tractor mounted boom sprayer. Treatments evaluated included Roundup PowerMax3 (5oz/A) and Roundup PowerMax3 + Moddus (2.5 oz + 11oz/A). An untreated check was included for comparison. A hand-cut, 10-stalk sample from each plot was harvested at 31 days after treatment (DAT) and was processed using Spectra Cane NIR to determine theoretical recoverable sugar (TRS, lb per ton of cane). Plots were harvested following the sampling with a sugarcane chopper harvester and were loaded into a wagon equipped with load cells, and the weight of each plot was recorded. Sugar yield (lbs/A) was calculated as the product of TRS and cane yield (tons/A). Both ripener treatments significantly increase TRS as compared to the untreated check (Table 6).

Table 6. HoL 15-508 response to ripener treatments in St. Gabriel, LA in 2023.

Treatment <sup>1</sup>	Rate/oz A	Cane Yield (tons/A)	TRS (lb/ton)	Sugar/A (lb/ton)
RU PowerMax3	5	30.4	210 a <sup>2</sup>	6302
RU PowerMax3 + Moddus	2.5 + 11	29.9	221 a	6649
Untreated check		35.6	191 b	6815

<sup>1</sup> Treatments applied September 8, 2023, and harvested 31 days after treatment.

<sup>2</sup> Means within a column followed by the same lowercase letter are not significantly different at P=0.05.

**Response of Ho 17-738 to Glyphosate Ripener** A study was conducted in 2023 at the Sugar Research Station in St. Gabriel, LA to evaluate Ho 17-738 response to glyphosate ripener. The experimental design was a randomized complete block design with 4 replications, and the plot size was two rows wide (12 ft.) X 30 ft. in length. Treatments were applied using a tractor mounted boom sprayer. Treatments evaluated included Roundup PowerMax3 (5oz/A) and Roundup PowerMax3 + Moddus (2.5 oz + 11oz/A). An untreated check was included for comparison. A hand-cut, 10-stalk sample from each plot was harvested at 31 days after treatment (DAT) and was processed using Spectra Cane NIR to determine theoretical recoverable sugar (TRS, lb per ton of cane). Plots were harvested following the sampling with a sugarcane chopper harvester and were loaded into a wagon equipped with load cells, and the weight of each plot was recorded. Sugar yield (lbs/A) was calculated as the product of TRS and cane yield (tons/A). Both ripener treatments significantly increase TRS as compared to the untreated check (Table 7).

Table 7. Ho 17-738 response to ripener treatments in St. Gabriel, LA in 2023.

Treatment <sup>1</sup>	Rate/oz A	Cane Yield (tons/A)	TRS (lb/ton)	Sugar/A (lb/ton)
RU PowerMax3	5	57.3 b <sup>2</sup>	230 a	13157
RU PowerMax3 + Moddus	2.5 + 11	52.5 b	233 a	12183
Untreated check		63.9 a	198 b	12635

<sup>1</sup> Treatments applied September 8, 2023, and harvested 31 days after treatment.

<sup>2</sup> Means within a column followed by the same lowercase letter are not significantly different at P=0.05.

**Response of L 01-299 to Moddus and Mazata When Tank Mixed with Glyphosate Ripener**

A study was conducted in 2023 at the Sugar Research Station in St. Gabriel, LA to evaluate second stubble L 01-299 mixtures of glyphosate ripener and two trinexapac-ethyl products. The experimental design was a randomized complete block design with 4 replications, and the plot size was two rows wide (12 ft.) X 30 ft. in length. Treatments were applied on September 1, 2023, using a tractor mounted boom sprayer. Treatments evaluated included Roundup PowerMax3 + Mazata (2.5 oz + 10.9 oz/A), Roundup PowerMax3 + Moddus (2.5 oz + 11 oz/A), and Roundup PowerMax3 (5 oz/A). An untreated check was included for comparison. A hand-cut, 10-stalk sample from each plot was harvested at 34 days after treatment (DAT) and was processed using Spectra Cane NIR to determine theoretical recoverable sugar (TRS, lb per ton of cane). Plots were harvested following the sampling with a sugarcane chopper harvester and were loaded into a wagon equipped with load cells, and the weight of each plot was recorded. Sugar yield (lbs/A) was calculated as the product of TRS and cane yield (tons/A). TRS response was for all ripener treatments. (Table 8).

Table 8. Second stubble L 01-299 response to two trinexapac-ethyl products in St. Gabriel, LA in 2023.

Treatment <sup>1</sup>	Rate/oz A	Cane Yield (tons/A)	TRS (lb/ton)	Sugar/A (lb/ton)
RU PowerMax3 + Mazata	2.5 + 10.9	36.2	224 ab <sup>2</sup>	8171
RU PowerMax3 + Moddus	2.5 + 11	36.7	234 a	8539
RU PowerMax3		39.1	218 ab	8524
Untreated check		41.3	196 b	8141

<sup>1</sup> Treatments applied September 1, 2023, and harvested 34 days after treatment.

<sup>2</sup> Means within a column followed by the same lowercase letter are not significantly different at P=0.05.