AN OVERVIEW OF 2025 ACTIVITIES IN THE LOUISIANA STATE UNIVERSITY AGRICULTURAL CENTER SUGARCANE VARIETY DEVELOPMENT PROGRAM

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For nearly a century and a half, the LSU AgCenter Sugarcane Variety Development Program (LSVDP) has developed genetically tailored sugarcane varieties optimized for Louisiana. This continuous innovation has kept the state's sugar industry profitable despite the biological challenges of growing a tropical crop in a temperate climate. The LSVDP operates through a sequence of distinct, crucial stages, which are chronologically detailed in Table 1 and include the creation, selection, testing, and commercial release of improved varieties. To maintain an effective pipeline, every stage must be completed annually. This report summarizes the LSVDP's activities during the 2025 season.

A collaborative team of scientists across multiple disciplines, departments, and institutions drives the success of this development program (Table 2). The LSU AgCenter and the United States Department of Agriculture (USDA) operate both independently and cooperatively to develop "L" and "HoCP/Ho" varieties, respectively (p. 1). The top-performing varieties from both programs merge for rigorous evaluation in nursery, infield, and outfield trials (Table 1). Outfield testing relies on joint efforts from the LSU AgCenter, the USDA, and the American Sugar Cane League. Once a variety is approved for commercial release, growers can procure seedcane from 44 secondary increase stations - operated by the American Sugar Cane League - across the industry. Seedcane expansion for highly recommended experimental lines typically begins as soon as they enter outfield testing (table 1). This robust cooperative framework among the three entities is governed by the historic "Three-Way Agreement of 2007".

Variety development begins by generating novel genetic variations, allowing researchers to select exceptional, high-yielding individual seedlings. A new wave of genetic diversity is created each year through targeted parental crosses. Because cultivated sugarcane does not flower naturally in Louisiana's environment, the breeding program uses artificial photoperiod treatments to induce and synchronize flowering. The 2025 photoperiod treatments began on June 1 and concluded on September 27, when natural day lengths dropped below 12.5 hours and continued to decrease at a rate that was conducive for natural flowering. While this timeline successfully triggers flower initiation, subsequent autumn temperatures can sometimes drop too low for optimal pollen production during crossing.

The 2025 crossing campaign ran from September 2 through November 10, 2025. Breeders utilized 673 tassels (flowers) from 94 distinct genotypes to execute 406 targeted crosses. After weighing the resulting true seed (fuzz), germination tests were conducted by counting seedlings per 0.5 grams of fuzz. The program produced an estimated 445,587 viable seeds in 2025 with 378,368 seeds coming from bi-parental crosses, 48,004 from polycrosses, and 19,215 from selfs. This represents a significant improvement over the 164,970 total seeds produced the year before. A comprehensive report of the 2025 photoperiod and crossing activities is available in the annual report section: *"2025 Photoperiod and Crossing in the LSU AgCenter Sugarcane Variety Development Program"* (p. 11).

Although sugarcane is commercially propagated via clones, every new variety starts as a single seedling (Table 1). Stalks of promising genotypes selected from these seedlings are planted into clonal plots. In April 2025, 80,631 seedlings from the 2024 crossing series were germinated in greenhouses and transplanted to the field (p. 28). Strong variants will be selected from this first-stubble population this September (p. 28). Meanwhile, of the 54,227 seedlings from the 2023 series transplanted in 2024, a total of 30,624 (56%) successfully overwintered and underwent individual selection in September 2025 (p. 28). From these, 1,128 seedlings were selected (a 3.7% selection rate) and advanced to 10-foot, first-line clonal plots (p. 28). Selection criteria focused on physical evaluations for pith, disease resistance, insect resistance, lodging, and yield components like stalk number, diameter, and height (p. 30). Handheld refractometers then evaluated Brix levels, and any genotypes underperforming commercial checks were eliminated (p. 30).

Elite experimental varieties from the 2022 crossing series were advanced from first-line trials to 16-foot, second-line trials, yielding 624 clones at a 27.72% selection rate (p. 30). Similarly, top varieties from the 2021 crossing series moved from second-line trials to 2-row, un-replicated, 16-foot increase plots, leaving 264 clones at a 48.94% selection rate (p. 30). In Fall 2025, 43 exceptional experimental varieties from the 2020 crossing series matched or outperformed commercial benchmarks (p. 31). These lines received permanent variety designations ("L", "HoCP", or "Ho") and entered replicated nursery trials across three key locations: the Sugar Research Station, the New Iberia Research Station, and the USDA-ARS Ardoyne Farm (p. 27). Further details can be found in: *"Selections, Advancements, and Assignments of the LSU AgCenter's Sugarcane Variety Development Program for 2025"* (p. 27).

The breeding and early selection phases described above took place entirely at the Sugar Research Station. To ensure performance across diverse environments, the subsequent stages were conducted in locations across the sugarcane belt. Some of the results are summarized in: *"2025 Louisiana Sugarcane Variety Development Program Nursery and Infield Variety Trials"* (p.48). These experiments were planted in multiple commercial production areas, with several grower-managed experiments planted on private farms. Sixteen promising varieties from the 2024 assignment series (2019 crossing series) advanced from on-station plant cane trials into regional infield and off-station nurseries. Off-station nurseries featured single-row, 20-foot plots with 4-foot alleys, while infield tests used two-row, 25-foot plots with 5-foot alleys (pp. 48-49). Both setups utilized a randomized complete block design with two replications. Notably, the infield stage marks the first time experimental varieties are harvested and weighed using mechanical weigh wagons to measure actual cane yield; prior stages estimated yields using stalk counts and random sample weights. These locations evaluate LSU AgCenter and USDA varieties side-by-side.

Six high-performing experimental varieties from the 2023 assignment series advanced through nursery and infield testing into outfield increase plots. Genotypes maintaining strong performance will progress to formal outfield testing in 2026. One experimental varieties from the "L" 2022 assignment series qualified for outfield trials or primary increase stations in 2025, and no new "L" varieties were commercially released this year. The outfield testing infrastructure is detailed extensively in: *"2025 Louisiana Sugarcane Variety Development Program Outfield Variety Trials"* (p. 79).

The *"Sucrose Laboratory at the Sugar Research Station"* section outlines juice laboratory activities for 2025 (p. 106). The facility processed 4,019 total samples using a Spectracane FT-NIR instrument (p. 106). To ensure system precision, a subset of 583 sample was also processed using standard wet chemistry methods to validate the automated FT-NIR data.

Advanced experimental varieties were screened for insect and disease resistance. Dr. Andre Gama (Plant Pathologist) evaluated disease resilience, while Dr. Blake Wilson (Entomologist) tracked response to insect pest pressures. These findings guide future commercial recommendations, crop management strategies, and parental selections to avoid matching susceptible genotypes in the crossing program. The molecular breeding program, led by Dr. Niranjan Baisakh, deployed genomic selection models to forecast parental breeding values. To avoid susceptible-by-susceptible crosses, the molecular program also screened the parental genotypes on the crossing carts for the Bru1 brown rust resistance gene.

The 2025 sugarcane growing season in south Louisiana began with extreme winter weather, marked by a historic snowstorm in early January that brought over 10 inches of snow and single-digit temperatures to the sugarcane belt. This harsh start was compounded by subsequent freezes in late February and early March. Despite the severe winter, rainfall patterns were notably high. Baton Rouge and Lafayette exceeded their 30-year average annual precipitation, recording 63.3 and 72.4 inches respectively, driven largely by heavy winter rains and flood-prone conditions in July. Conversely, New Orleans and Alexandria finished at or slightly above their average rainfall levels. Most of this moisture occurred during the winter and summer months. As the season progressed into the harvest period of November and December, conditions shifted to a significant dry spell, with some areas even entering drought status. This relatively dry harvest season proved beneficial, facilitating field operations and contributing to an overall positive outcome for the 2025 crop. The Atlantic hurricane season was active with 13 named storms, but fortunately, none made landfall in Louisiana.

Variety advancement and 'seed-increase' decisions were made during the Variety Advancement Committee meeting held on August 11, 2025, at the American Sugar Cane League headquarters in Thibodaux, Louisiana.

The continuous progress of the LSU AgCenter Sugarcane Variety Development Program relies heavily on continuous funding from the State of Louisiana and the American Sugar Cane League. The shared commitment and collaborative spirit of all participating scientists, growers, and industry stakeholders remains deeply appreciated.

Table 1. Chronological activities within the LSU AgCenter Sugarcane Variety (‘L’ varieties) Development Program.

Year	Stage and activity
1	Crossing
2	Seedlings planted
3	Seedlings selected in 1R to plant first line trial
4	First line trial selected in PC to plant second line trial
5	Second line trial selected in PC to plant increase plots
6	Second line trial selected in 1R to assign permanent ‘L’ variety numbers On-station (3) nurseries planted using ‘seedcane’ from increase plots
7	On-station nurseries PC harvested Off-station (3) and infield (2) nurseries planted
8	On-station nurseries 1R harvested Off-station and infield nurseries PC harvested Experimental clones introduced to 12 outfield test sites and planted as ‘seedcane’ increase plots Experimental clones introduced to 3 primary increase stations
9	On-station nurseries 2R harvested Off-station and infield 1R harvested Outfield (12) tests planted at six light and six heavy soil locations Experimental clones increased on three primary increase stations
10	On-station nurseries 3R harvested Off-station and infield nurseries 2R harvested Outfield tests PC harvested Continue seedcane increase of experimental clones on primary increase stations
11	Off-station and infield nurseries 3R harvested Outfield tests 1R harvested Introduce experimental clones to 44 secondary increase stations
12	Outfield tests 2R harvested Increase seedcane of experimental clones on 44 secondary increase stations
13	Variety release meeting New variety distributed by ASCL from secondary increase stations

1R, First ratoon cane crop; PC, Plant cane crop; 2R, Second ratoon cane crop; ASCL, American Sugarcane League.

Table 2. Members of the LSU AgCenter Sugarcane Variety Development Team in 2025.

Team Member	Budgetary Unit	Responsibility
Collins Kimbeng	Sugar Research Station	Program Leader
Michael Pontif	Sugar Research Station	Selection and Variety Testing
Brayden Blanchard	Sugar Research Station	Quantitative Genetics
Blake Wilson	Sugar Research Station	Insect Resistance
Kenneth Gravois	Sugar Research Station	Extension
Andre Gama	Plant Pathology and Crop Physiology	Disease Resistance
Madison Flasco	Plant Pathology and Crop Physiology	Virology
Niranjan Baisakh	School of Plant, Environmental and Soil Sciences	Molecular Breeding
Albert Orgeron	Sugar Research Station	Ripener Research
Mathew Foster	Sugar Research Station	Weed Science Research
Brenda Tubana	School of Plant, Environmental and Soil Sciences	Agronomy Research
Mavis Daigle	Sugar Research Station	Sucrose Laboratory
Harold Schexnayder	Sugar Research Station	Photoperiod & Crossing
Jerry Mullen	Sugar Research Station	Selection and Variety Testing
Zachary Taylor	Sugar Research Station	Outfield Variety Testing

2026 PHOTOPERIOD AND CROSSING IN THE LSU AGCENTER SUGARCANE VARIETY DEVELOPMENT PROGRAM

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The longstanding goal of the LSU AgCenter's Sugarcane Variety Development Program is the development of genetically improved sugarcane varieties which will positively impact the sugar industry. The variety development program begins with the photoperiod and crossing stages. Photoperiod treatments are managed to induce the flowering of genotypes that would otherwise not naturally flower in Louisiana's climatic conditions. Crosses are made through hybridization techniques that use sugarcane yield components, borer resistance, disease resistance, pedigree characteristics, genetic markers, and other performance metrics as criteria to select parents and to decide what crosses to make. The breeding program strives to perform crosses that will yield superior progeny.

Eyepiece cuttings of breeding genotypes to be used for the 2025 crossing season were planted in October of 2024. The cuttings were planted in Styrofoam cell trays and maintained in the greenhouse. In February 2025, the cuttings were transferred to can culture. The transplants were planted in large cans (38 liters) containing equal parts of field soil, washed sand, and peat moss and maintained in the greenhouse. During their time in these cans, the plants were trimmed repeatedly to harden the parent stalks and induce tillering. After sufficient tillers were achieved, artificial LED grow lights were hung above the cans to induce elongation of the stalks. Up to 23 hours of light were applied to the cans to achieve physiological maturity (achieving two internodes) before they could be moved out of the greenhouse. The cans were moved out of the greenhouse and onto the photoperiod rail carts during the second week of April. Great diligence was given to the care of the parental genotypes in greenhouse culture in the 2025 season to promote the maturity and general health of the plants. Natural lighting and six light-tight chambers were used to employ photoperiod treatments. The cans were placed on photoperiod carts and assigned to a specific photoperiod regime based on previous knowledge of their flowering behavior. Genotypes that are difficult to flower were given a longer induction treatment of 41 consecutive days of 12 ½ hours of constant day length with a later start date of decline period which began on July 10, 2025. In comparison, genotypes considered to be easy to flower were given a shorter induction treatment of 37 consecutive days of 12 ½ hours of constant day length and a decline period that began on July 6, 2025. New genotypes for which flowering behavior was not known were placed throughout the photoperiod carts. The new genotypes will be moved to more favorable photoperiod conditions in the following crossing season if they do not flower in a specific photoperiod regime. Fertilization was adjusted to condition the plants for floral induction as a high C:N ratio has been shown to promote flowering in sugarcane.

The first photoperiod treatment began on June 1, 2025. All photoperiod treatments were initiated with a minimum of 37 consecutive days of 12 ½ hours of constant day length (Table 1). After the initial constant photoperiod days, day length was artificially shortened by one minute per day. Tassel (flower) initiation begins after the day length begins to decrease. Treatments differed by the number of days with constant day length (photoinductive days) and the date on which the decline in day length was initiated (Table 1). All photoperiod treatments were discontinued on September 27, 2025, when the natural day length was less than 12 ½ hours and decreasing at a rate conducive to sugarcane flowering.

Flowering of the parents began in the first week of September in 2025. The normal time frame for first flowering can be as early as the last week of August or as late as the third week of September. There may be a slight deviation in the appearance of the first flower due to temperature during the photoperiod induction phase, varietal characteristics, and the photoperiod treatments. Stalk numbers increased in 2025 to 1211 stalks (Table 2) as compared to 973 stalks in 2024. On average, there were 3.7 stalks per can with 237 cans producing tassels (Table 2). There was an increase in tassel production with 673 tassels produced in 2025 (Table 2) as compared to 231 tassels produced in 2024. The total flowering percentage for the six photoperiod bays increased from 23.7% in 2024 to 55.6% in 2025.

Crossing began on September 2, 2025, and ended on November 10, 2025. A total of 673 tassels comprising 94 genotypes (Table 2) were used to produce 406 crosses (Table 3, Table 5). A total of 445,587 viable seeds were produced in 2025 (Table 3) with 378,368 seeds coming from bi-parental crosses, 48,004 seeds from polycrosses, and 19,215 seeds from self-crosses (Table 3). Germination rate was estimated based on the germination of 0.5 g of seed under greenhouse conditions in late December of 2025 into January 2026. Germination rates increased in 2025 with an average of 76 plants per half gram of seeds compared to 72 plants per gram of seeds in 2024 (Table 3). This favorable germination was likely caused by cooler summer temperatures, the application of late fertilizer (13-13-13 after inflorescence initiation was likely), and by keeping conditions in the crossing house cooler and dryer than what had been in recent years. Humidity misters were used sparsely and only during the time of seed set (after pollination), and the vents and doors were kept open to keep temperatures lower. Although this practice presents a risk of cross-pollination and contamination in the crossing house, these cooler temperatures and lower humidity at later parts of the day seemed to contribute greatly to increased seed germination.

After successful 2021, 2022, 2023, and 2024 crossing seasons, minor adjustments were made to further improve the process, especially with tassel formation and seed germination in mind. Substantial benefits were achieved from refraining from trimming in the 2021 season at the cost of total stalks due to less tillering of the parents. This approach was justified by previous research regarding the growth and maturation of parental genotypes to flower (Burr et al. 1957; Clements and Awada 1967; Coleman 1969; Julien 1973; LaBorde 2007). Considering the success of the prior season, trimming was once again applied in the 2022 season in very few instances to induce tillering while as not to inhibit the growth of the parents. This strategy of reduced trimming resulted in some success, as the total number of stalks greatly increased from the 2021 season while the number of tassels increased only slightly. Continued hypotheses suggested helpful measures for the future seasons. One suggested method that was employed on a small scale in the 2023 crossing season is the application of LED growth lighting applied to the parents in the greenhouse. This promoted substantial growth in the months that they are contained in greenhouse culture and counteracted the inhibiting effects of tillering for both a high population and adequate growth of the tested parent stalks. These growth lights were applied on a full scale for the 2024 crossing campaign over all 324 cans of parental genotypes and for most hours of the night. This gave the parents exposure to growth-inducing light sometimes up to 22 hours a day. While it seemed to improve early maturation and growth of the stalks, it may have had a slightly detrimental effect on the tillering of parental genotypes as both trimming and lights were applied, and we saw a reduction in total stalks (Table 2) from recent years. For the 2025 crossing campaign, trimming was applied systematically upon the first few weeks that the genotypes were transplanted from trays to cans. After an adequate number of tillers were achieved, growth lighting was applied during the last weeks that the cans were kept in the greenhouse before moving them to the photoperiod facilities. Understanding both the benefits and risks of applying growth lights in the early growth stages of the parental genotypes, it is recommended to apply early and rigorous trimming to induce tillering followed by growth lighting at night once an adequate number of tillers is achieved. This strategy seemed to greatly benefit flowering for the 2025 season.

Germination results are very promising from the 2025 campaign. After thoroughly reviewing the protocol and considering multiple inhibiting factors to germination, we continued strategies adopted in 2024 by applying late fertilizer and keeping the crossing house ventilation and doors open. The exceptionally hot and dry late summer months of the 2023 season triggered stress responses in the parents such as the abortion of the leaf whorl (and sometimes the inflorescence) and consequently the early germination of buds on the stalk due to the breaking of apical dominance. For this reason, it was hypothesized that a later application of a complete fertilizer after the photoperiod regime was completed and the tassel formation should have been initiated, should aid the continual growth of the stalks and elongation of the tassels. It is important, however, to consider the very delicate balance of nutrients necessary for tassel formation as it is known that a high C:N ratio is needed for flowering in sugarcane (Caraballoso et al., 2012; Hale et al., 2017; LaBorde, 2007; Moore & Nuss, 1987). Breeders should be very careful to make these applications late enough to not inhibit tassel formation. It was also hypothesized that temperatures and humidity were kept too high in recent years, leading to a reduction in germination. Efforts were made to keep the crossing house well-ventilated and cooled especially during the warmer parts of the day. The use of humidifying misters was also greatly reduced from recent years (before 2024). These minor changes will be considered as important modifications to the protocol for future crossing campaigns.

In conclusion, beneficial modifications and improved germplasm have made the 2025 crossing campaign a successful undertaking for the breeding program. An abundance of new parents were used in crossing and they seemed to provide adequate seed to initiate the selection process of the program. These new generations of seedlings will be planted in the seedling selection stage in April of 2026.

Table 1. Summary of the 2025 photoperiod treatments for the LSU AgCenter's sugarcane variety development program

Bay	Cart	Treatment Start Date	Days of Constant Photoperiod	Date Photoperiod Decline Started	Days of Declining Photoperiod in Peak 1	Days of Declining Photoperiod in Peak 2	Mean Flowering Date	Total Stalks	Percent Flowered
1	A	14-Jun	44	28-Jul	72	87	289±2	72	69
1	B	14-Jun	44	28-Jul	72	87	280±1	76	70
1	C	14-Jun	44	28-Jul	72	87	276±2	56	82
2	A	14-Jun	44	28-Jul	72	87	285±1	70	77
2	B	14-Jun	44	28-Jul	72	87	284±2	69	51
2	C	14-Jun	44	28-Jul	72	87	276±2	69	32
3	A	1-June	37	6-Jul	87	102	267±2	69	68
3	B	1-June	37	6-Jul	87	102	268±4	67	27
3	C	1-June	37	6-Jul	87	102	257±3	57	46
4	A	1-June	37	6-Jul	87	102	270±2	72	61
4	B	1-June	37	6-Jul	87	102	265±2	69	36
4	C	1-June	37	6-Jul	87	102	265±3	67	34
5	A	1-June	41	10-Jul	82	97	270±2	71	76
5	B	1-June	41	10-Jul	82	97	266±2	64	62
5	C	1-June	41	10-Jul	82	97	258±2	70	63
6	A	1-June	41	10-Jul	82	97	275±2	60	80
6	B	1-June	41	10-Jul	82	97	276±2	71	38
6	C	1-June	41	10-Jul	82	97	276±4	62	27

Table 2. Summary of can, variety, and flower information in bays 1-6 subjected to photoperiod treatments.

Varieties used in crossing	Cans with stalks	Cans with tassels	Total stalks	Total tassels	Mean stalks per can	Mean tassels per can†	Mean pollen rating‡	Mean days to flower§
94	324	237	1211	673	3.74±1.05	2.84±1.14	5.92±2.21	76.41±13.25

† Based upon cans with tassels.
‡ Pollen rating of 1 through 4 indicates male tassel; pollen rating of 5 through 9 indicates female tassel.
§ Days from photoperiod decline start date to flowering.

Table 3. Summary of 2025 crossing and seed production.

Type of Cross	Crosses	Sum of Seed Production	Mean Seed Production Per Cross	Mean Seed Production Per Female Tassel	Mean Germination Per 0.5 Gram Seed
Biparental	350	378368	1081 ± 1006	1081 ± 1006	78 ± 65
Polycross	26	48004	1846 ± 1775	1846 ± 1775	97 ± 74
Self	30	19215	640 ± 1219	640 ± 1219	34 ± 62
Total	406	445587	1098 ± 1106	1098 ± 1106	76 ± 67

Table 4. Varietal flowering summary in 2025 in the photoperiod bays.

Variety	Days of Constant Photoperiod	First Flower Date	Mean Days to Flower	Pollen Rating	Total Stalk Number	Total Flowers	Percent Flowering Stalks
BLACKT	39	.	.	.	2	.	.
CP83-644	35	276	276	7	8	5	62
HO06-563	41 ± 4	255	277 ± 10	4	18	16	89
HO07-613	41 ± 4	.	.	.	9	2	22
HO08-717	38 ± 5	274	274	7	13	2	15
HO08-730	39	267	278 ± 20	8 ± 1	3	3	100
HO09-827	38 ± 4	272	276 ± 4	8 ± 1	14	4	29
HO09-832	39	.	.	.	5	.	.
HO09-840	38 ± 4	245	261 ± 10	8 ± 1	18	15	83
HO09-9401	44	262	269 ± 5	8	11	10	91
HO09-9402	42 ± 3	245	264 ± 6	3	23	21	91
HO11-532	42 ± 3	267	279 ± 9	4	18	12	67
HO11-573	38 ± 1	.	.	.	14	2	14
HO11-9406	42 ± 2	258	274 ± 10	7	27	24	89
HO12-615	35	262	266 ± 3	7	4	4	100
HO12-630	40 ± 5	276	287 ± 8	8	15	14	93
HO13-705	44	.	.	.	2	2	100
HO13-739	39 ± 4	301	301	8	16	6	38
HO15-964	37 ± 2	286	286	3	11	2	18
HO15-971	35	286	290 ± 5	9	4	4	100
HO16-600	37 ± 2	253	264 ± 15	6 ± 1	9	6	67
HO16-608	44	.	.	.	2	.	.
HO17-738	39	.	.	.	3	.	.
HO17-776	42 ± 3	260	274 ± 11	9	15	9	60
HO18-878	39	244	247 ± 3	4	7	6	86
HO95-988	39	269	269	8	3	1	33
HOCP00-950	40 ± 5	267	286 ± 12	9	12	9	75
HOCP01-517	39	281	281	7	2	1	50
HOCP01-523	39	.	.	.	2	.	.
HOCP02-618	35	.	.	.	5	.	.
HOCP04-838	38 ± 4	251	265 ± 9	3 ± 1	16	15	94
HOCP04-847	40 ± 4	265	281 ± 8	8	32	16	50
HOCP09-804	40 ± 4	265	277 ± 8	4	24	15	62
HOCP09-814	39	269	280 ± 10	7 ± 1	13	9	69
HOCP14-802	36 ± 2	.	.	.	17	.	.
HOCP14-885	40 ± 4	274	296 ± 13	4	30	18	60
HOCP17-701	44	.	.	.	4	.	.
HOCP18-801	35	.	.	.	5	1	20
HOCP18-803	39 ± 3	274	296 ± 17	4	19	5	26
HOCP18-846	37 ± 2	258	263 ± 5	4 ± 1	9	7	78
HOCP85-845	39	279	282 ± 5	6	6	2	33
HOCP91-552	42 ± 3	253	260 ± 6	4	7	7	100
HOCP92-624	42 ± 2	253	270 ± 11	8 ± 1	16	12	75
HOCP96-540	41 ± 3	276	291 ± 13	4	19	12	63

Table 4. Continued.

Variety	Days of Constant Photoperiod	First Flower Date	Mean Days to Flower	Pollen Rating	Total Stalk Number	Total Flowers	Percent Flowering Stalks
HOCP97-609	40 ± 5	255	277 ± 14	4 ± 1	9	7	78
HOL15-508	40 ± 5	.	.	.	10	4	40
L01-299	36 ± 2	248	262 ± 10	3	24	10	42
L03-371	39	.	.	.	3	.	.
L05-457	38 ± 3	245	256 ± 9	8	27	26	96
L06-001	40 ± 4	269	276 ± 7	4	20	11	55
L07-057	36 ± 2	244	247 ± 5	7 ± 1	6	5	83
L08-090	42 ± 3	260	279 ± 13	8	6	6	100
L09-099	39 ± 4	258	271 ± 10	6 ± 2	22	16	73
L09-112	39 ± 4	269	281 ± 11	7 ± 3	12	4	33
L09-123	35	253	253	8	4	4	100
L10-146	35	.	.	.	3	.	.
L10-147	42 ± 3	258	276 ± 11	7 ± 1	24	18	75
L11-183	37 ± 2	253	275 ± 18	9 ± 1	23	16	70
L11-187	39 ± 3	272	280 ± 6	8 ± 1	27	11	41
L12-201	38 ± 2	.	.	.	10	.	.
L12-202	40 ± 4	258	274 ± 12	4 ± 1	23	20	87
L13-243	40 ± 5	265	272 ± 10	6 ± 1	4	3	75
L13-251	36 ± 2	251	258 ± 5	3	13	12	92
L14-264	35	267	268 ± 1	8 ± 1	4	2	50
L14-265	40 ± 3	276	287 ± 9	9	23	21	91
L14-266	44	274	275 ± 1	4	6	2	33
L14-267	38 ± 2	279	288 ± 15	4 ± 2	11	6	55
L14-269	44	283	288 ± 3	8 ± 1	13	12	92
L14-273	40 ± 5	272	275 ± 5	7	7	7	100
L14-275	40 ± 5	262	271 ± 4	6 ± 1	9	6	67
L14-276	39 ± 5	255	272 ± 14	9	10	8	80
L14-282	36 ± 2	272	272	8	12	1	8
L15-298	40 ± 5	260	264 ± 4	9	7	4	57
L15-306	37 ± 4	276	296 ± 17	9 ± 1	16	5	31
L15-320	44	262	268 ± 11	4 ± 1	3	3	100
L15-337	41 ± 4	288	292 ± 5	8	25	9	36
L19-006	36 ± 2	248	256 ± 8	4	9	8	89
L19-021	38 ± 2	258	266 ± 6	7	4	4	100
L20-037	35	.	.	.	4	.	.
L20-065	43 ± 2	290	296 ± 6	3	21	10	48
L21-087	37 ± 2	.	.	.	7	.	.
L21-095	35	.	.	.	4	.	.
L22-106	44	274	274	3	2	2	100
L22-107	35	301	301	9	4	1	25
L22-115	35	262	264 ± 3	8 ± 1	9	4	44
L22-123	44	274	275 ± 1	8 ± 1	2	2	100
L22-124	39	248	248	7	2	2	100
L22-131	39	.	.	.	4	.	.

Table 4. Continued.

Variety	Days of Constant Photoperiod	First Flower Date	Mean Days to Flower	Pollen Rating	Total Stalk Number	Total Flowers	Percent Flowering Stalks
L22-133	39	293	301 ± 8	7	6	5	83
L22-134	44	276	278 ± 3	4	4	4	100
L23-136	40 ± 5	248	265 ± 13	4	7	7	100
L23-137	37 ± 2	265	265	9	8	6	75
L23-139	37 ± 2	272	275 ± 3	4 ± 1	5	5	100
LCP23-140	38 ± 2	260	263 ± 2	3	7	6	86
L23-142	42 ± 3	260	278 ± 12	3	7	6	86
L23-144	39	262	266 ± 4	9	5	5	100
L23-146	44	272	276 ± 6	4 ± 1	4	2	50
L23-147	39	251	254 ± 3	6 ± 1	4	4	100
L23-149	39	258	258	8	5	5	100
L23-153	44	293	294 ± 1	7	3	3	100
L23-155	39	253	254 ± 2	6 ± 2	5	5	100
L23-156	39	265	268 ± 2	4	9	9	100
L23-159	35	262	264 ± 2	5 ± 1	2	2	100
L23-163	35	272	273 ± 2	6 ± 2	5	4	80
L23-165	39	281	281	3	3	2	67
L94-426	39	265	284 ± 28	8	3	3	100
L99-226	39 ± 4	258	269 ± 9	4	34	29	85
L99-233	40 ± 4	251	262 ± 8	3	29	27	93
LASTRIPED	39	.	.	.	2	.	.
LCP81-010	35	272	278 ± 8	7	2	2	100
LCP85-384	37 ± 2	255	268 ± 9	3	10	7	70
LCP86-454	35	245	253 ± 13	6 ± 1	4	4	100
LHO20-057	39	.	.	.	4	.	.
N39	41 ± 3	.	.	.	10	.	.
N64	37 ± 2	276	276	3	8	2	25
TUC77-042	42 ± 3	262	274 ± 7	9	10	8	80
ZASTRIPED	44	307	310 ± 5	9	6	3	50

Table 5. Crosses and seed made in 2025.

Cross	Female	Male	Seed
XL25-001	L07-057	HO18-878	212
XL25-002	HO18-878	HO18-878	50
XL25-003	HO09-840	HO18-878	1080
XL25-004	L07-057	HO18-878	40
XL25-005	LCP86-454	HO18-878	1592
XL25-006	HO18-878	HO18-878	16
XL25-007	L07-057	HO09-9402	46
XL25-008	LCP86-454	HO09-9402	336
XL25-009	L05-457	HO09-9402	64
XL25-010	HO09-840	HO09-9402	0
XL25-011	L05-457	HO09-9402	33

Cross	Female	Male	Seed
XL25-012	L22-124	L23-136	0
XL25-013	L07-057	L23-136	0
XL25-014	L23-136	L23-136	0
XL25-015	L22-124	L19-006	0
XL25-016	L05-457	L19-006	49
XL25-017	HO09-840	L19-006	98
XL25-018	L05-457	HO18-878	2077
XL25-019	L05-457	MISC	3840
XL25-020	L23-147	L19-006	596
XL25-021	L05-457	L19-006	232
XL25-022	LCP86-454	L99-233	2197

Cross	Female	Male	Seed
XL25-023	L05-457	L99-233	1428
XL25-024	HO09-840	L13-251	129
XL25-025	L05-457	L13-251	63
XL25-026	HO09-840	L23-136	13
XL25-027	L05-457	HOCP04-838	1289
XL25-028	L05-457	HOCP04-838	1123
XL25-029	L11-183	HO16-600	114
XL25-030	L09-123	HO16-600	259
XL25-031	HOCP92-624	HO18-878	1185
XL25-032	L09-123	HO18-878	870
XL25-033	L23-155	HO18-878	379
XL25-034	L09-123	L13-251	1677
XL25-035	L23-155	L13-251	1315
XL25-036	L05-457	L13-251	1182
XL25-037	L09-123	HOCP91-552	1478
XL25-038	L05-457	HOCP91-552	1403
XL25-039	L23-155	L99-233	505
XL25-040	L23-147	L99-233	1984
XL25-041	L05-457	L99-233	1414
XL25-042	L23-147	L23-136	60
XL25-043	L05-457	L23-136	84
XL25-044	HOCP92-624	L23-155	1099
XL25-045	L14-276	L23-155	38
XL25-046	HOCP97-609	L19-006	927
XL25-047	L07-057	L19-006	1104
XL25-048	HO16-600	L13-251	1778
XL25-049	HOCP04-838	L99-233	2599
XL25-050	L05-457	HO06-563	1789
XL25-051	LCP85-384	LCP85-384	277
XL25-052	L01-299	L01-299	8
XL25-053	L23-149	HOCP04-838	145
XL25-054	L09-099	HOCP04-838	1629
XL25-055	L23-149	LCP85-384	132
XL25-056	HO16-600	LCP85-384	2136
XL25-057	LCP85-384	LCP85-384	557
XL25-058	HOCP18-846	L23-155	148
XL25-059	L23-147	L23-155	404
XL25-060	L05-457	L23-155	757
XL25-061	HO11-9406	L99-233	1969
XL25-062	L10-147	L99-233	2531
XL25-063	L11-183	L99-226	126
XL25-064	L23-149	L99-226	152
XL25-065	HO11-9406	L12-202	486
XL25-066	L23-149	L12-202	76
XL25-067	HOCP18-846	L13-251	409

Cross	Female	Male	Seed
XL25-068	L23-149	L13-251	15
XL25-069	L19-021	L13-251	1302
XL25-070	HOCP18-846	L01-299	382
XL25-071	L09-099	L01-299	2528
XL25-072	L01-299	L01-299	78
XL25-073	L01-299	L01-299	39
XL25-074	L01-299	L01-299	56
XL25-075	L14-276	LCP23-140	486
XL25-076	HO17-776	LCP23-140	969
XL25-077	LCP23-140	LCP23-140	84
XL25-078	L11-183	L12-202	182
XL25-079	L08-090	L12-202	355
XL25-080	L15-298	L19-006	269
XL25-081	HO17-776	L99-226	1260
XL25-082	HO09-840	HOCP18-846	421
XL25-083	L10-147	HOCP18-846	1837
XL25-084	L14-276	L23-142	132
XL25-085	L11-183	L23-142	330
XL25-086	L23-142	L23-142	252
XL25-087	HOCP97-609	25P1	2969
XL25-088	L09-099	25P2	3848
XL25-089	L09-099	25P3	3378
XL25-090	L01-299	L01-299	26
XL25-091	HO12-615	L99-233	0
XL25-092	HO16-600	L15-320	1676
XL25-093	L10-147	L15-320	3876
XL25-094	TUC77-042	L99-226	667
XL25-095	L22-115	L99-226	1821
XL25-096	L11-183	LCP23-140	618
XL25-097	HO11-9406	L13-251	942
XL25-098	L23-144	L12-202	2778
XL25-099	L22-115	L12-202	1468
XL25-100	HO09-9401	L23-159	493
XL25-101	L05-457	L23-159	1087
XL25-102	L23-159	L23-159	42
XL25-103	HOCP04-838	25P4	1476
XL25-104	L09-099	25P5	2253
XL25-105	HO09-9401	HO09-9402	505
XL25-106	HOCP92-624	L14-275	2181
XL25-107	L14-275	L14-275	429
XL25-108	HOCP04-847	L12-202	1822
XL25-109	HO09-840	L12-202	789
XL25-110	L94-426	L12-202	369
XL25-111	L14-276	L23-159	380
XL25-112	L23-137	L23-159	34

Cross	Female	Male	Seed
XL25-113	HO09-840	LCP23-140	373
XL25-114	L23-144	LCP23-140	2271
XL25-115	L09-099	LCP23-140	1684
XL25-116	L11-183	L13-251	0
XL25-117	L13-243	L99-233	1942
XL25-118	HO11-9406	LCP85-384	603
XL25-119	HO11-9406	HOCP09-804	292
XL25-120	L11-183	HO06-563	566
XL25-121	L23-144	HO06-563	3123
XL25-122	L15-298	L99-226	646
XL25-123	HO12-615	L99-226	72
XL25-124	L23-137	L99-226	42
XL25-125	L23-156	L99-226	158
XL25-126	L10-147	HO09-9402	3427
XL25-127	L23-144	HO09-9402	2116
XL25-128	HO95-988	HOCP04-838	843
XL25-129	L23-156	HOCP04-838	673
XL25-130	L09-099	HOCP04-838	2543
XL25-131	L99-226	25P6	347
XL25-132	HO09-9402	25P7	2134
XL25-133	HOCP91-552	25P8	7422
XL25-134	HOCP92-624	L23-156	2016
XL25-135	L15-298	L23-156	690
XL25-136	HO08-730	L23-156	396
XL25-137	L14-264	L99-226	59
XL25-138	HO09-9401	L99-226	668
XL25-139	L22-115	HOCP09-804	557
XL25-140	HOCP92-624	HOCP09-804	1344
XL25-141	HOCP04-847	HO11-532	1167
XL25-142	L19-021	HO11-532	1505
XL25-143	HOCP00-950	HOCP18-846	36
XL25-144	HOCP92-624	HOCP18-846	3360
XL25-145	HO08-730	HOCP18-846	1355
XL25-146	HO09-9401	HO09-9402	730
XL25-147	HO09-9401	HO09-9402	206
XL25-148	HO12-615	HO09-9402	34
XL25-149	L05-457	HO09-9402	1113
XL25-150	L09-099	HO09-9402	2168
XL25-151	HO95-988	HO09-9402	157
XL25-152	HOCP09-814	L06-001	4112
XL25-153	HO11-9406	L06-001	1616
XL25-154	HOCP92-624	L06-001	4084
XL25-155	HO09-840	L06-001	2510
XL25-156	TUC77-042	HOCP09-804	613
XL25-157	HO95-988	HOCP09-804	1863
XL25-158	HO11-9406	HOCP09-804	2248
XL25-159	HO09-840	L23-156	238
XL25-160	L14-264	L23-156	11
XL25-161	HO09-840	HO11-532	2606
XL25-162	HO11-9406	HO11-532	968
XL25-163	HO09-840	L99-226	622
XL25-164	L19-021	L99-226	1565
XL25-165	HO09-840	HO06-563	0
XL25-166	L01-299	25P9	672
XL25-167	LCP85-384	25P10	1334
XL25-168	L05-457	HO09-9402	458
XL25-169	HO09-9401	HO09-9402	43
XL25-170	HO12-615	HOCP18-846	94
XL25-171	L08-090	HOCP18-846	336
XL25-172	HO09-9401	HOCP18-846	506
XL25-173	L05-457	HOCP18-846	1581
XL25-174	L12-202	25P11	417
XL25-175	L13-251	25P12	1872
XL25-176	HO11-9406	L23-146	1771
XL25-177	HO17-776	L23-146	346
XL25-178	L14-273	L23-146	357
XL25-179	L23-144	L23-156	2063
XL25-180	L23-139	L23-156	727
XL25-181	L14-273	L23-156	912
XL25-182	L11-183	L23-136	665
XL25-183	L11-187	L23-136	862
XL25-184	L14-282	L23-136	1383
XL25-185	HOCP09-814	L12-202	2109
XL25-186	HO17-776	L12-202	1407
XL25-187	L14-275	L12-202	3759
XL25-188	L23-163	LCP85-384	137
XL25-189	L19-021	LCP85-384	1819
XL25-190	HO09-840	LCP85-384	0
XL25-191	HO09-827	HOCP09-804	1154
XL25-192	L23-163	HOCP09-804	248
XL25-193	L14-273	HOCP09-804	714
XL25-194	HO17-776	HOCP04-838	1504
XL25-195	L14-275	HOCP04-838	287
XL25-196	LCP86-454	HOCP04-838	2637
XL25-197	HO09-9401	HOCP04-838	886
XL25-198	L11-183	HOCP97-609	532
XL25-199	L14-273	HOCP97-609	1226
XL25-200	HO09-9401	HOCP97-609	0
XL25-201	L94-426	25P13	0
XL25-202	L05-457	25P14	432

Cross	Female	Male	Seed
XL25-203	LCP81-010	25P15	1042
XL25-204	L14-276	HOCP14-885	1350
XL25-205	TUC77-042	HOCP14-885	835
XL25-206	HO11-9406	HOCP14-885	2167
XL25-207	HO17-776	HOCP18-803	200
XL25-208	HOCP00-950	HOCP18-803	487
XL25-209	L10-147	HOCP18-803	2288
XL25-210	TUC77-042	L99-226	189
XL25-211	L11-183	L99-226	531
XL25-212	L10-147	L99-226	1964
XL25-213	TUC77-042	HO11-532	608
XL25-214	L22-107	HO11-532	625
XL25-215	HO09-827	HO11-532	1031
XL25-216	L14-273	HO11-532	328
XL25-217	L22-123	L23-139	1209
XL25-218	L22-107	L23-139	543
XL25-219	L10-147	L23-139	2349
XL25-220	L14-273	L23-139	675
XL25-221	L19-006	25P16	2088
XL25-222	L23-136	25P17	198
XL25-223	L14-275	25P18	0
XL25-224	L14-266	25P19	458
XL25-225	L22-106	25P20	3901
XL25-226	L99-233	25P21	2094
XL25-227	L11-187	HOCP09-804	1515
XL25-228	L14-265	HOCP09-804	848
XL25-229	L22-123	HOCP09-804	714
XL25-230	HO11-9406	L23-142	53
XL25-231	HO11-9406	L23-142	143
XL25-232	L10-147	L23-142	1707
XL25-233	HO11-9406	L22-134	2091
XL25-234	HO11-9406	L22-134	1213
XL25-235	L10-147	L22-134	2555
XL25-236	HO11-9406	L23-136	334
XL25-237	HO12-630	L23-136	156
XL25-238	HO11-9406	L23-163	749
XL25-239	HO12-630	L23-163	1246
XL25-240	HO11-9406	HO06-563	752
XL25-241	L05-457	HO06-563	1477
XL25-242	HO09-9401	HO06-563	0
XL25-243	CP83-644	LCP85-384	794
XL25-244	CP83-644	LCP85-384	1549
XL25-245	HO11-9406	L23-139	2319
XL25-246	L05-457	L23-139	0
XL25-247	HO11-9406	N64	2493

Cross	Female	Male	Seed
XL25-248	HO11-9406	N64	2015
XL25-249	HOCP00-950	N64	158
XL25-250	L11-187	HO11-532	1335
XL25-251	L15-306	HO11-532	238
XL25-252	L10-147	L01-299	1972
XL25-253	L01-299	L01-299	26
XL25-254	HO11-9406	L14-266	472
XL25-255	L10-147	L14-266	2708
XL25-256	L14-275	L99-226	4218
XL25-257	HOCP09-814	HO06-563	2818
XL25-258	L14-265	HO06-563	1930
XL25-259	L11-187	HO06-563	996
XL25-260	L10-147	HOCP96-540	2163
XL25-261	HO09-827	HO06-563	1188
XL25-262	HOCP92-624	HO06-563	3707
XL25-263	HOCP85-845	HO06-563	1936
XL25-264	L14-265	L09-099	1659
XL25-265	L13-243	L09-099	1053
XL25-266	L10-147	L09-099	5986
XL25-267	HOCP09-814	L14-267	4512
XL25-268	L14-265	L14-267	1261
XL25-269	L08-090	L14-267	1025
XL25-270	L08-090	HOCP96-540	2116
XL25-271	HO17-776	HOCP96-540	1158
XL25-272	L14-276	HOCP96-540	1007
XL25-273	HOCP09-814	L09-099	2132
XL25-274	TUC77-042	L06-001	907
XL25-275	HOCP04-847	L06-001	562
XL25-276	HO12-630	L06-001	1384
XL25-277	HOCP04-847	HOCP09-804	496
XL25-278	HOCP92-624	HOCP09-804	3584
XL25-279	HO09-9401	HOCP09-804	167
XL25-280	HOCP01-517	L12-202	2354
XL25-281	L15-306	L12-202	36
XL25-282	HO17-776	HO06-563	1392
XL25-283	L14-275	HO06-563	2878
XL25-284	HOCP09-814	HO11-532	2689
XL25-285	L15-320	HO11-532	930
XL25-286	TUC77-042	L14-267	268
XL25-287	HOCP04-847	L14-267	382
XL25-288	L14-265	L23-136	114
XL25-289	HO09-827	L23-136	185
XL25-290	L14-265	L22-134	1885
XL25-291	L11-187	L22-134	1877
XL25-292	HOCP04-847	L23-139	0

Cross	Female	Male	Seed
XL25-293	TUC77-042	L23-165	322
XL25-294	L11-183	L23-165	400
XL25-295	L14-265	L23-146	1433
XL25-296	L01-299	25P22	589
XL25-297	LCP85-384	25P23	213
XL25-298	HOCP92-624	25P24	776
XL25-299	L11-183	HOCP14-885	1162
XL25-300	HOCP04-847	HOCP14-885	387
XL25-301	L14-265	HOCP14-885	2196
XL25-302	HOCP92-624	HOCP14-885	2541
XL25-303	L14-265	L09-112	1224
XL25-304	HOCP92-624	L09-112	2869
XL25-305	L11-187	L09-112	1914
XL25-306	L14-265	HOCP18-803	1015
XL25-307	L11-187	HOCP18-803	122
XL25-308	L14-269	HOCP18-803	312
XL25-309	L14-267	HOCP96-540	1292
XL25-310	L14-269	HOCP96-540	1907
XL25-311	LCP81-010	HOCP96-540	4838
XL25-312	L14-265	HOCP14-885	2383
XL25-313	L11-183	HOCP14-885	646
XL25-314	HOCP04-847	HOCP14-885	381
XL25-315	L11-183	HO15-964	1984
XL25-316	L14-269	HO15-964	414
XL25-317	L10-147	HO15-964	3472
XL25-318	L14-269	HOCP96-540	1795
XL25-319	HOCP09-814	HOCP96-540	2887
XL25-320	L14-276	HOCP96-540	3102
XL25-321	HOCP85-845	HOCP96-540	2134
XL25-322	L14-273	L06-001	927
XL25-323	HO15-971	L06-001	881
XL25-324	L12-202	25P25	3709
XL25-325	L99-226	25P26	4382
XL25-326	L23-142	26P27	1708
XL25-327	L15-337	HOCP14-885	1342
XL25-328	HO12-630	HOCP14-885	58
XL25-329	HOCP04-847	HOCP14-885	380
XL25-330	L15-337	HOCP97-609	1851
XL25-331	L14-265	HOCP97-609	1628
XL25-332	HO12-630	HOCP97-609	2013
XL25-333	L15-337	L12-202	1253
XL25-334	L14-265	L12-202	1366
XL25-335	HO12-630	L12-202	843
XL25-336	L14-269	HO06-563	1342
XL25-337	HOCP92-624	HO06-563	1384

Cross	Female	Male	Seed
XL25-338	HOCP04-847	HO06-563	324
XL25-339	L11-187	HO06-563	893
XL25-340	L14-265	L09-099	2097
XL25-341	L14-265	L20-065	1169
XL25-342	L11-187	L20-065	102
XL25-343	HO11-9406	L20-065	333
XL25-344	L20-065	L20-065	179
XL25-345	L14-269	L09-112	450
XL25-346	HOCP00-950	L09-112	186
XL25-347	HO12-630	L09-112	44
XL25-348	L14-265	L23-142	1330
XL25-349	L14-269	L23-142	0
XL25-350	HO16-600	L23-142	101
XL25-351	L14-265	L99-226	1153
XL25-352	L14-269	L99-226	434
XL25-353	HOCP00-950	HOCP09-804	175
XL25-354	L14-269	HOCP09-804	1571
XL25-355	L14-269	HOCP09-804	2086
XL25-356	L15-337	L20-065	283
XL25-357	HOCP00-950	L20-065	548
XL25-358	HOCP04-847	L20-065	125
XL25-359	L14-276	L20-065	498
XL25-360	HO15-971	L20-065	749
XL25-361	L20-065	L20-065	38
XL25-362	L20-065	L20-065	112
XL25-363	L20-065	L20-065	262
XL25-364	L20-065	L20-065	89
XL25-365	L20-065	L20-065	0
XL25-366	HOCP00-950	HOCP14-885	178
XL25-367	L22-133	HOCP14-885	434
XL25-368	HO12-630	HOCP14-885	488
XL25-369	L15-337	HO11-532	1437
XL25-370	L23-153	HO11-532	314
XL25-371	HO12-630	HO11-532	322
XL25-372	L15-337	HO06-563	1971
XL25-373	L23-153	HO06-563	462
XL25-374	L23-153	HOCP14-885	246
XL25-375	L10-147	HOCP14-885	2184
XL25-376	L08-090	HOCP14-885	364
XL25-377	HOCP14-885	HOCP14-885	2738
XL25-378	HOCP14-885	HOCP14-885	3188
XL25-379	HOCP14-885	HOCP14-885	3246
XL25-380	HO17-776	L20-065	150
XL25-381	L22-133	L20-065	434
XL25-382	L20-065	L20-065	36

Cross	Female	Male	Seed
XL25-383	HOCP09-814	L20-065	1139
XL25-384	L15-306	L20-065	0
XL25-385	HO13-739	L20-065	418
XL25-386	L20-065	L20-065	131
XL25-387	L22-133	HOCP14-885	586
XL25-388	HO13-739	HOCP14-885	855
XL25-389	L22-107	HOCP14-885	1066
XL25-390	HOCP00-950	HOCP14-885	21
XL25-391	HO12-630	HOCP14-885	249
XL25-392	HOCP14-885	HOCP14-885	4562
XL25-393	L15-337	HOCP18-803	358
XL25-394	HO08-730	HOCP18-803	310

Cross	Female	Male	Seed
XL25-395	L10-147	HOCP18-803	351
XL25-396	HO11-9406	HOCP18-803	10
XL25-397	L99-226	L99-226	303
XL25-398	HO09-9402	HO09-9402	2342
XL25-399	L11-183	L20-065	62
XL25-400	L15-306	L20-065	0
XL25-401	ZASTRIPED	L20-065	22
XL25-402	L20-065	L20-065	48
XL25-403	L11-183	HOCP96-540	945
XL25-404	L22-133	HOCP96-540	98
XL25-405	L14-265	L14-267	232
XL25-406	L22-133	HOCP96-540	597

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SELECTIONS, ADVANCEMENTS, AND ASSIGNMENTS OF THE LSU AGCENTER'S SUGARCANE VARIETY DEVELOPMENT PROGRAM FOR 2025

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In the selection phase of the LSU AgCenter's Sugarcane Variety Development Program, superior clones are advanced through the seedling (single stool), first line, second line, and increase stages of the breeding program. In the first stubble crop of the second-line trials, those clones with acceptable breeding or commercial value are assigned a permanent variety number. A total of 80,631 seedlings from 124 crosses were planted in the field in the spring of 2025. The majority of these seedlings are progeny of bi-parental crosses among commercial and elite experimental varieties. In the fall of 2025, family selection was practiced on the 30,624 stubble seedlings, planted in 2024, surviving the winter. This selection resulted in the planting of 1,128 first-line trial plots. At the same time, superior clones were selected and advanced through subsequent stages (624 to second line trials, 255 to the increase stage). Assignments of permanent "L25" numbers were given to the 43 best clones of the 2020 crossing series.

Procedures

In the selection stage of the LSU AgCenter's Sugarcane Variety Development Program, single stools are established from seed generated in the crossing stage. After evaluating and selecting the families for cane yield potential in the cross-appraisal studies, clones with desirable phenotypes are selected and advanced through first line, second line, and increase stages. In the first stubble crop of the second-line trials, clones judged to have breeding or commercial value are assigned a permanent variety number and advanced to the nursery stage of testing.

Results and Discussion

A total of 80,631 seedlings from 124 crosses of the 2024 crossing series were planted to the field in the spring of 2025 (Table 1). Many of these seedlings were progeny of crosses among commercial and superior experimental varieties. In the fall of 2025, individual selection was practiced on the 30,624 stubble single stools of the 2023 crossing series, planted in 2024, that survived the winter. The 1,128 clones selected and advanced from the single stools were planted in 10-foot, first-line trial plots. Dates of planting and harvesting of all plots in the selection phase of the program can be found in Table 2.

The 2,251 first-line trial plots of the 2022 crossing series were visually appraised for cane yield potential in August of 2025 (Table 3). After screening for cane yield potential, acceptable clones were further evaluated for pest resistance (diseases and borer injury), stalk quality, and Brix (Table 3). This second stage of advancement concluded with the planting of 624 clones in single row, 16-foot, second line trials plots.

The 521 plant-cane, second line trial plots of the 2021 crossing series were visually appraised for yield potential August 2025. Based on the field evaluation, comments and sucrose lab data collected in 2024, 255 clones were planted in one single row, 25-foot plots representing the increase stage of the program (Table 4). These clones will be candidates for assignment in 2025. Of the 536 candidates from the first stubble crop of the second line trial plots, the best 43 clones from the 2020 crossing series were assigned permanent "L25" numbers (Table 5). These newly assigned "L25" varieties were then planted in replicated nursery trials at three on station locations (Sugar Research Station, Iberia Research Station, and USDA-ARS Ardoyne Farm)

The advancement summary of clones from crosses made in 2020 through 2024 is shown in Table 6. Crosses are sorted by female parent in ascending order, with the percentile ranking given for each cross in each stage of the program.

Table 1. Summary of selections, advancements and assignments made during 2025 by the Louisiana, "L" Sugarcane Variety Development Program's personnel.

Crossing series	Progeny Test Crosses	Selection Program Crosses	Plants transplanted	Over-wintered plants	Advanced to 1st line	Advanced to 2nd line	Advanced to Increase	Advanced to On-station Nurseries (L25 Assignments)
X20	50	144	52,985	30,967	1,471	536	264	43
X21	--	124	59,049	37,899	1,599	521	255	
X22	--	150	58,380	41,144	2,251	624		
X23	--	101	54,227	30,624	1,128			
X24	--	124	80,631					

Table 2. Dates of seedling and line trials planted or harvested in 2025

Crossing Series	Test	Crop	Date Planted	Date Harvested
X24	Seedlings	Planted	04/15-04/29/25	
X23	Seedlings	First Stubble	04/15-04/19/24	09/15-09/18/25
X23	First Line Trials	Planted	09/18/2025	
X22	First Line Trials	Plant-cane	09/19-10/03/25	10/09/25
X21	First Line Trials	First Stubble	09/13/23	12/10/25
X22	Second Line Trials	Planted	10/10/25	
X21	Second Line Trials	Plant-cane	09/30/24	09/25/25
X20	Second Line Trials	First Stubble	09/20/23	10/22/25
X19	Second Line Trials	Second Stubble	09/28/22	Did not harvest
X21	Light Soil Increase	Planted	10/23/25	
X20	Light Soil Increase	Plant-cane	11/21/24	10/23/25
X19	Light Soil Increase	First Stubble	10/03/23	12/11/25
X18	Light Soil Increase	Second Stubble	11/02/22	12/11/25
X21	Heavy Soil Increase	Planted	10/23/25	
X19	Heavy Soil Increase	First Stubble	10/03/23	11/13/25

Table 3. Numbers of experimental clones dropped for identified faults in the 2022 crossing series first-line trials

Trait	Fault Frequency	Fault Percent
Brix & Rating	1,398	62.11
Pith	75	3.33
Smut	4	0.18
Other	46	2.04
Clones advanced to Second-line stage	624 Advanced	27.72

Table 4. Number of experimental clones dropped for identified faults in the 2021 crossing series of the plant-cane second line trial prior to advancement to the increase stage

Trait	Fault Frequency	Fault Percent
Rating	129	24.76
Pith	9	1.73
Smut	6	1.15
Other	13	2.50
Clones advanced to Increase stage	255 Advanced	48.94

Table 5. First stubble second line trial data for 2025 “L” assignments. Assignments were made at the first stubble stage and included data accumulated from the proceeding stages. The population parameters (mean, minimum, maximum and standard deviation) reported are for the assigned clones and checks only.

Variety	Female	Male	Sugar Yield (Sugar/Acre)	Cane Yield (Tons/Acre)	TRS (Sugar/Ton)	Stalk weight (Ibs/stalk)	Fiber (%)
1996540	LCP86-454	LCP85-384	7838	38.4	204	2.05	11.6
2001299	L93-365	LCP85-384	8216	35.8	229	1.97	12.7
2014885	HO07-613	HOCP05-920	9104	41.9	215	2.25	9.7
2015306	CP83-644	L01-283	8972	39.7	223	1.97	10.6
LCP25-192	Ho16-680	HoCP14-826	9316	35.8	260	2.59	12.2
LCP25-193	HoCP13-737	HoCP09-857	6916	29	238	1.13	10.5
LCP25-194	L14-282	HoCP17-714	9627	39.1	247	2.13	12.2
LCP25-195	Ho13-739	Ho13-708	3851	18.1	212	1.04	11.8
LCP25-196	CP14-1490	CP06-2897	5886	28.6	206	2.07	11.3
LCP25-197	Ho11-573	HoCP09-857	9309	37.7	247	2.19	10.4
LCP25-198	CP11-2412	CP12-1753	11257	43.9	257	2.39	9.7
LCP25-199	Ho17-9512	Ho12-630	6717	27.9	240	1.84	8.8
LCP25-200	Ho17-9512	Ho12-630	7589	36.1	210	2.18	8.6
LCP25-202	HoCP14-885	Ho13-708	7960	35	228	1.95	11.9
LCP25-203	HoCP17-702	Ho18-878	8454	45.9	184	2.23	9.8
LCP25-204	HoCP17-702	Ho18-878	8689	37.8	230	1.81	12.2
LCP25-205	HoCP96-540	Ho16-635	5626	22.9	245	1.71	13.3
LCP25-206	Ho05-961	HoCP14-885	6929	26.6	260	1.89	12.8
LCP25-207	L99-226	L12-201	12219	48.5	252	2.23	12.7
LCP25-208	Ho11-512	Ho15-960	11481	42.3	272	2.24	13.1
LCP25-209	HoCP17-702	Ho18-878	11093	46.6	238	1.92	11.4
LCP25-210	Ho18-878	Ho12-630	6953	28.1	247	1.57	10.4
LCP25-211	Ho15-971	HoCP17-714	10541	41.5	254	1.45	11
LCP25-212	LCP85-384	Ho12-630	7748	31.6	245	1.21	10.8
LCP25-213	LCP85-384	Ho12-630	5578	23.4	239	1.34	12.2
LCP25-214	Ho12-630	L12-218	8521	37.3	228	2.14	13.6
LCP25-215	L15-306	HoCP14-826	8080	31.1	260	2.04	11
LCP25-216	Ho12-630	Ho18-878	7973	34.2	233	2.06	10.1
LCP25-217	HoCP17-702	Ho18-878	7306	37	197	1.88	12.1
LCP25-218	HoCP17-702	Ho18-878	6965	31.4	222	1.19	10.7
LCP25-219	HoCP14-885	Ho13-708	6507	27.8	234	1.36	12.7
LCP25-220	Ho11-532	HoL15-993	10584	42.5	249	2.46	10.6
LCP25-221	HoCP13-737	Ho11-573	7934	31.5	252	1.74	12
LCP25-222	Ho16-600	Ho12-630	10549	41.6	253	1.99	9.9
LCP25-223	HoL15-511	Ho15-930	14041	53.5	262	3.19	12.7
LCP25-224	Ho11-573	HoCP14-830	10238	41.5	247	2.23	9.9
LCP25-225	HoCP14-885	Ho13-708	10745	43.4	248	2.01	11.4

Table 5. Continued.

Variety	Female	Male	Sugar Yield (Sugar/Acre)	Cane Yield (Tons/Acre)	TRS (Sugar/Ton)	Stalk weight (Ibs/stalk)	Fiber (%)
LCP25-227	Ho11-532	HoL15-993	6493	29.1	223	1.34	10.5
LCP25-228	Ho16-600	Ho15-930	6989	31.6	221	1.81	10.5
LCP25-229	HoCP13-737	Ho11-573	8920	35.3	253	1.79	9.3
LCP25-230	LCP85-384	Ho12-630	4379	18.5	237	1.31	9.7
LCP25-231	LCP85-384	Ho12-630	10248	42.2	243	1.96	11.3
LCP25-232	Ho15-963	HoCP14-826	9880	41.2	240	2.49	10.3
LCP25-234	Ho16-680	HoCP14-826	8138	36.9	221	1.91	10.4
LCP25-235	Ho15-964	Ho12-630	7956	34	234	1.41	13.1
LCP25-236	Ho15-972	HoCP14-885	5085	21.5	236	1.58	12.3
LCP25-237	Ho12-630	L12-218	6683	34.7	193	1.51	11.6
MEAN			8342	35.3	236	1.89	11.2
MIN			3851	18.1	184	1.04	8.6
MAX			14041	53.5	272	3.19	13.6
STD DEV			2090	7.8	20	0.43	1.3

The MIN, MAX, MEAN and STD DEV were estimated using the assignments only.

Table 6. Advancement summary of the crosses in 2020 through 2023 series

			1st Line		2nd Line		Increases		Assignments	
Female	Male	Survive	No.	Rank Percentile	No.	Rank Percentile	No.	Rank Percentile	No.	Rank Percentile
2020 Series										
Mix 1	Mix2	65	0	12	0	17	0	25	0	40
Ho16-622	Ho12-630	482	23	72	2	42	0	25	0	40
HoCP09-804	L13-251	145	8	78	0	17	0	25	0	40
L16-386	L13-251	182	4	53	0	17	0	25	0	40
Ho16-646	L12-201	150	7	72	1	55	0	25	0	40
HoCP15-996	HoCP09-804	212	3	46	1	46	0	25	0	40
Ho16-608	Ho11-532	156	0	12	0	17	0	25	0	40
L01-299	L12-201	180	2	41	1	50	0	25	0	40
HoCP09-804	L12-201	152	0	12	0	17	0	25	0	40
Ho16-617	L12-201	114	0	12	0	17	0	25	0	40
HoCP16-670	Ho12-630	352	1	26	1	39	0	25	0	40
Ho08-730	Ho12-630	316	7	54	3	65	2	70	0	40
HoCP16-685	Ho11-532	143	0	12	0	17	0	25	0	40
CR94-1006	CP14-1649	384	9	56	1	36	1	56	0	40
Ho08-730	L12-201	416	11	60	4	67	2	64	0	40

			1st Line		2nd Line		Increases		Assignments	
Female	Male	Survive	No.	Rank Percentile	No.	Rank Percentile	No.	Rank Percentile	No.	Rank Percentile
Ho11-532	HoL15-993	209	13	81	9	91	3	85	2	98
Ho16-600	Ho15-930	202	18	91	10	94	5	95	1	92
L15-312	Ho15-930	201	0	12	0	17	0	25	0	40
HoCP14-885	HoL15-508	205	0	12	0	17	0	25	0	40
HoCP14-885	HoL15-501	444	30	82	9	80	5	79	0	40
Ho13-739	Ho13-708	551	5	38	4	59	2	60	1	82
Ho13-739	HoCP14-885	119	0	12	0	17	0	25	0	40
HoCP13-737	Ho11-573	353	18	74	11	86	6	88	2	94
Ho16-666	Poly18-4	195	3	46	1	48	0	25	0	40
Ho11-532	Ho12-630	147	3	52	1	57	0	25	0	40
CP14-1490	CP06-2897	249	19	88	8	87	3	81	1	89
L99-226	L12-201	812	42	75	9	70	7	75	1	80
Ho16-622	L12-201	615	11	50	0	17	0	25	0	40
L11-183	L12-201	575	0	12	0	17	0	25	0	40
Ho13-739	L14-282	203	1	29	1	48	1	66	0	40
L16-380	Ho11-532	399	8	51	3	60	1	55	0	40
HoCP14-855	Ho11-532	126	1	34	0	17	0	25	0	40
Ho08-730	HoCP14-855	166	4	57	1	53	0	25	0	40
HoL15-501	Ho11-532	441	1	25	0	17	0	25	0	40
H08-9504	Ho11-532	226	16	85	4	77	2	76	0	40
L16-380	HoCP 04-838	102	1	39	0	17	0	25	0	40
LCP85-384	Ho12-630	424	54	97	27	98	8	90	4	97
L16-375	Ho12-630	412	5	44	0	17	0	25	0	40
Ho08-730	Ho12-630	180	0	12	0	17	0	25	0	40
L16-375	HoCP96-540	84	6	85	1	72	1	80	0	40
H08-9504	HoCP96-540	295	5	48	2	56	1	59	0	40
Ho12-630	HoL15-993	90	2	55	1	71	1	78	0	40
Ho15-972	Ho12-630	320	50	99	13	90	5	87	0	40
Ho17-724	Ho12-630	233	13	78	7	85	4	89	0	40
Ho16-600	Ho12-630	416	9	53	3	58	3	72	1	87
Ho13-739	HoCP04-852	248	9	68	1	42	0	25	0	40
Ho16-601	Ho11-512	208	0	12	0	17	0	25	0	40
HoCP13-737	Ho16-600	220	9	69	1	46	0	25	0	40
Ho15-963	Ho16-600	380	6	47	0	17	0	25	0	40
Ho16-608	HoCP14-826	219	0	12	0	17	0	25	0	40
HoCP14-867	Ho12-630	285	9	64	5	76	3	78	0	40

			1st Line		2nd Line		Increases		Assignments	
Female	Male	Survive	No.	Rank Percentile	No.	Rank Percentile	No.	Rank Percentile	No.	Rank Percentile
HoCP16-670	Ho16-635	229	13	79	2	64	0	25	0	40
Ho11-573	Ho16-635	248	3	43	2	61	1	61	0	40
HoCP96-540	Ho16-635	197	21	94	9	93	4	93	1	93
Ho12-630	L12-218	469	25	76	16	88	8	89	2	89
Ho16-678	Ho11-573	613	0	12	0	17	0	25	0	40
Ho11-573	HoCP09-857	400	18	70	8	80	6	85	1	87
HoCP13-737	HoCP09-857	445	33	87	15	87	9	92	1	85
L16-353	HoCP09-857	209	6	62	5	82	4	91	0	40
HoL15-508	HoCP14-826	410	13	65	2	47	1	55	0	40
Ho15-963	HoCP14-826	673	22	66	7	69	4	68	1	81
Ho16-680	HoCP14-826	962	79	89	20	81	7	72	2	83
Ho15-964	Ho12-630	217	25	95	13	97	8	97	1	91
Ho15-963	Ho12-630	614	0	12	0	17	0	25	0	40
Ho16-627	Ho12-630	62	0	12	0	17	0	25	0	40
CP11-2412	CP12-1753	562	19	67	9	76	5	76	1	82
Ho15-960	Ho11-573	166	13	89	10	97	2	81	0	40
Ho11-512	Ho11-573	239	7	63	1	43	0	25	0	40
HoL15-511	Ho15-930	171	2	42	1	51	1	68	1	95
Ho05-961	Ho11-573	157	0	12	0	17	0	25	0	40
HoCP13-737	Ho11-573	458	2	27	2	44	0	25	0	40
Ho15-972	Ho11-573	228	1	28	1	44	1	62	0	40
HoCP91-555	Ho11-573	420	22	76	4	66	3	71	0	40
HoCP14-885	Ho11-573	408	10	59	3	59	2	65	0	40
HoCP05-920	Ho11-573	173	0	12	0	17	0	25	0	40
L16-372	Ho11-573	158	0	12	0	17	0	25	0	40
HoCP05-920	HoCP14-826	358	11	63	2	51	1	57	0	40
Ho11-573	HoCP14-826	455	32	84	12	84	7	86	0	40
L15-306	HoCP14-826	141	21	98	8	96	6	98	1	96
Ho11-512	Ho15-960	381	4	40	3	61	3	74	1	88
Ho11-573	HoCP14-830	430	38	91	22	95	12	96	1	85
Ho13-739	HoL15-993	289	0	12	0	17	0	25	0	40
Ho17-9512	Ho12-630	395	57	97	15	89	10	95	2	93
HoCP17-728	Ho11-573	151	11	87	2	74	2	82	0	40
Ho08-730	Ho15-930	191	1	31	1	49	0	25	0	40
CP13-4028	CP09-1822	209	26	96	18	99	11	99	0	40
L16-353	Ho11-573	188	0	12	0	17	0	25	0	40

			1st Line		2nd Line		Increases		Assignments	
				Rank		Rank		Rank		Rank
Female	Male	Survive	No.	Percentile	No.	Percentile	No.	Percentile	No.	Percentile
HoCP14-885	Ho13-708	455	49	95	25	95	11	94	3	95
Ho15-930	Ho13-708	356	22	80	9	83	6	87	0	40
L15-306	Ho13-708	192	0	12	0	17	0	25	0	40
H08-9507	Ho11-573	366	17	71	1	37	0	25	0	40
Ho15-972	HoCP14-885	467	11	57	3	55	1	53	1	84
Ho16-627	HoCP14-885	307	7	55	0	17	0	25	0	40
HoCP14-885	Ho13-739	206	5	58	2	68	0	25	0	40
Ho13-739	HoCP14-885	230	16	83	3	73	1	61	0	40
Ho15-960	Poly19-7 (HoCP96-540, L09-112, HoCP09-814, Ho15-960, Ho07-753)	198	0	12	0	17	0	25	0	40
L12-201	Poly19-9	288	2	33	1	41	0	25	0	40
Ho11-573	Poly19-9	690	2	27	2	40	2	58	0	40
L16-353	Poly19-10	204	11	77	4	79	1	65	0	40
Ho12-630	Ho18-878	902	36	68	13	74	5	67	1	80
HoCP17-702	Ho18-878	357	38	93	16	92	10	97	5	99
Ho09-840	Ho18-878	395	19	73	6	75	3	73	0	40
Ho18-878	Ho12-630	208	15	86	5	82	4	91	1	91
Ho09-840	Ho12-630	235	21	92	10	91	2	74	0	40
Ho12-630	Ho18-877	711	0	12	0	17	0	25	0	40
CP14-4430	CP11-1314	312	6	51	3	67	3	77	0	40
Ho14-722	Ho13-739	504	3	31	3	52	1	53	0	40
L11-183	Ho13-739	231	3	45	2	63	0	25	0	40
HoCP18-857	Ho13-739	862	1	24	0	17	0	25	0	40
L14-282	HoCP18-847	556	4	34	1	35	1	52	0	40
Ho14-722	HoCP18-847	644	11	48	7	70	0	25	0	40
HoCP18-857	HoCP18-847	1090	9	36	1	34	0	25	0	40
Ho11-556	HoCP18-847	294	0	12	0	17	0	25	0	40
Ho12-630	HoCP17-714	449	2	29	2	45	2	63	0	40
L14-282	HoCP17-714	426	12	61	4	65	2	63	1	86
HoCP18-852	HoCP17-714	171	3	49	2	72	0	25	0	40
HoCP18-857	HoCP17-714	963	11	42	2	36	1	51	0	40
L14-282	Ho17-722	365	3	35	1	38	1	57	0	40
L16-386	Ho17-722	117	0	12	0	17	0	25	0	40
L17-434	Ho17-722	159	10	82	1	54	1	70	0	40
L17-410	HoCP18-847	247	7	61	2	62	0	25	0	40
Ho17-9513	HoCP18-847	374	1	25	0	17	0	25	0	40
L11-183	HoCP18-847	165	8	74	1	53	1	69	0	40

Female	Male	Survive	1st Line No.	1st Line Rank Percentile	2nd Line No.	2nd Line Rank Percentile	Increases No.	Increases Rank Percentile	Assignments No.	Assignments Rank Percentile
L14-282	HoCP18-857	191	2	40	0	17	0	25	0	40
HoCP09-804	HoCP17-714	385	0	12	0	17	0	25	0	40
L11-183	HoCP17-714	463	19	70	4	63	1	54	0	40
L17-426	Ho17-722	191	0	12	0	17	0	25	0	40
Ho15-971	HoCP17-714	141	14	93	5	89	2	84	1	96
Ho08-730	HoCP17-714	61	0	12	0	17	0	25	0	40
HoCP18-827	HoCP17-714	357	21	80	10	85	5	83	0	40
L17-424	HoCP17-714	629	4	32	1	34	1	51	0	40
L17-398	HoCP17-714	324	8	59	6	78	1	59	0	40
L17-424	HoCP18-866	718	9	44	2	38	0	25	0	40
Ho12-630	HoCP18-866	219	18	90	10	93	5	93	0	40
L17-405	Ho11-532	202	0	12	0	17	0	25	0	40
Ho05-961	HoCP14-885	218	7	65	4	78	3	82	1	90
HoL15-508	HoCP14-885	386	2	30	0	17	0	25	0	40
CPCL05-1201	CG04-09694	335	3	36	1	40	0	25	0	40
CP08-1968	Poly 20-15 (NA01640,NA052748)	62	0	12	0	17	0	25	0	40
Ho16-627	Ho15-945	.	.	.	1	.	0	.	0	.
Misc1	Misc2	.	.	.	1	.	0	.	0	.
L09-123	L99-233	192	0	12	0	17	0	25	0	40
HOCP91-552	HOCP91-552	641	0	12	0	17	0	25	0	40
L05-457	L15-320	221	2	37	0	17	0	25	0	40
L09-123	L15-337	352	0	12	0	17	0	25	0	40
HO09-9401	L99-233	434	4	38	3	57	0	25	0	40
L09-123	L15-337	155	0	12	0	17	0	25	0	40
L11-187	L12-202	164	0	12	0	17	0	25	0	40
2021 Series										
L05-457	HOCP14-802	591	3	8	3	32	3	38	.	.
L07-057	HOCP14-802	218	21	90	3	61	2	71	.	.
HO09-9401	HOCP14-802	197	17	87	1	32	1	38	.	.
HO09-9401	HOCP14-802	141	19	98	5	90	4	94	.	.
L09-123	L99-233	376	13	57	1	18	1	16	.	.
HO09-9401	HOCP14-802	138	1	19	.	.	.	.	.	.
L09-123	HO08-730	211	3	37	.	.	.	.	.	.
L05-457	HO08-730	429	3	18	.	.	.	.	.	.
HOCP91-552	L05-448	266	3	31	2	44	1	30	.	.

Female	Male	Survive	No.	1st Line Rank Percentile	No.	2nd Line Rank Percentile	No.	Increases Rank Percentile	No.	Assignments Rank Percentile
HOCP91-552	L05-448	455	.	.	.	.	.	.	.	.
HOCP91-552	21P7	945	.	.	.	.	.	.	.	.
L13-251	21P9	372	8	44	1	20	.	.	.	.
L13-251	21P10	417	13	53	5	58	.	.	.	.
HOCP91-552	21P11	944	2	2	2	10	1	6	.	.
L05-448	21P12	169	.	.	.	.	.	.	.	.
HO09-9401	HOCP14-802	263	17	78	3	54	2	57	.	.
L10-147	L12-227	367	16	66	4	52	1	20	.	.
L10-147	LCP81-030	187	6	55	.	.	.	.	.	.
HOCP92-624	L12-202	779	40	69	17	78	11	86	.	.
HO14-835	L99-226	229	.	.	.	.	.	.	.	.
L10-147	L99-226	655	2	5	.	.	.	.	.	.
HOCP92-624	L99-226	427	1	3	.	.	.	.	.	.
L15-320	HO11-532	194	1	9	1	34	1	40	.	.
L10-147	L08-090	285	6	43	1	22	1	27	.	.
LCP81-010	21P15	432	7	40	1	13	1	13	.	.
HOCP95-951	21P16	121	.	.	.	.	.	.	.	.
L15-320	L01-299	222	.	.	.	.	.	.	.	.
L05-457	L01-299	666	88	97	32	94	16	91	.	.
HO09-9401	L99-226	242	22	88	7	88	3	79	.	.
L15-320	L12-227	1010	59	73	25	84	14	84	.	.
HOCP92-624	L12-227	733	25	56	11	65	4	44	.	.
L15-320	L98-207	859	.	.	.	.	.	.	.	.
HOCP92-624	L99-233	1730	11	14	2	2	1	1	.	.
HOCP95-951	21P19	243	.	.	.	.	.	.	.	.
LCP81-010	21P20	461	5	28	2	25	1	10	.	.
L11-183	LCP85-384	67	.	.	.	.	.	.	.	.
HO09-9401	LCP85-384	245	10	62	3	60	2	61	.	.
HOCP92-624	L98-207	1757	29	41	8	29	5	23	.	.
HOCP92-624	LCP81-010	703	2	4	.	.	.	.	.	.
L14-273	L09-099	178	1	10	.	.	.	.	.	.
L14-282	L15-337	205	.	.	.	.	.	.	.	.
L14-282	L06-001	363	4	30	3	46	3	64	.	.

			1st Line		2nd Line		Increases		Assignments	
Female	Male	Survive	No.	Rank Percentile	No.	Rank Percentile	No.	Rank Percentile	No.	Rank Percentile
HOCP96-561	L99-226	160	11	80	3	74	3	88	.	.
L15-298	L01-299	224	22	91	1	28	.	.	.	.
HOCP92-624	L12-202	388	5	35	1	16	.	.	.	.
L05-457	HOCP92-618	660	.	.	.	.	.	.	.	.
HOCP91-552	HOCP92-618	118	2	42	.	.	.	.	.	.
HOCP04-838	HO11-532	79	4	68	.	.	.	.	.	.
L11-187	L99-233	212	.	.	.	.	.	.	.	.
L15-298	L99-233	104	6	71	.	.	.	.	.	.
HOCP04-838	L15-337	180	7	61	.	.	.	.	.	.
L10-147	L15-337	1353	9	16	1	1	.	.	.	.
HO13-739	HO08-730	175	1	11	.	.	.	.	.	.
HOCP14-867	HO08-730	214	.	.	.	.	.	.	.	.
L10-147	HO08-730	582	6	26	1	8	.	.	.	.
HO08-717	L99-226	418	5	33	1	14	.	.	.	.
L11-187	L99-226	229	2	24	1	26	.	.	.	.
L12-218	L99-226	234	2	23	1	24	1	32	.	.
L15-320	L15-337	54	.	.	.	.	.	.	.	.
HOCP14-867	L15-337	320	17	70	6	74	4	81	.	.
L11-183	L06-001	322	35	94	2	38	.	.	.	.
L11-183	HOCP14-885	1163	70	76	17	64	9	59	.	.
L01-283	HOCP14-885	1281	13	25	4	21	1	5	.	.
L11-183	HOCP09-804	419	12	51	.	.	.	.	.	.
L15-320	HOCP09-804	352	25	81	3	48	3	66	.	.
L14-276	HOCP09-804	394	33	86	14	92	8	89	.	.
HOCP09-814	HOCP09-804	201	19	89	8	93	2	74	.	.
L11-187	L13-251	209	6	52	1	30	.	.	.	.
L14-276	L13-251	789	3	6	1	4	.	.	.	.
HOCP96-561	L13-251	364	26	82	4	53	1	22	.	.
HO09-840	L09-099	226	5	45	.	.	.	.	.	.
HOCP96-561	L09-099	282	14	67	2	40	1	28	.	.
L06-040	L09-099	418	16	60	5	57	3	55	.	.
HOCP92-624	L09-099	1471	12	22	2	5	1	3	.	.
L06-040	L99-226	195	.	.	.	.	.	.	.	.
LCP81-010	L99-233	185	.	.	.	.	.	.	.	.

			1st Line		2nd Line		Increases		Assignments	
Female	Male	Survive	No.	Rank Percentile	No.	Rank Percentile	No.	Rank Percentile	No.	Rank Percentile
HOCP92-624	HOCP85-845	1377	32	46	10	42	3	11	.	.
L15-320	HOCP14-885	829	9	29	8	49	5	45	.	.
L12-218	HOCP14-885	163	2	34	1	37	1	48	.	.
HO13-739	L14-267	967	40	64	19	76	10	76	.	.
L15-320	L14-267	1096	17	38	13	56	7	54	.	.
HO19-739	L09-112	1112	13	32	6	36	3	18	.	.
L15-320	L09-112	95	1	27	.	.	.	.	.	.
L01-283	L09-112	869	5	12	2	12	.	.	.	.
L01-283	HOCP09-804	409	49	96	21	97	16	98	.	.
L10-147	HOCP09-804	421	15	58	3	41	1	15	.	.
HOCP09-814	L99-226	518	30	72	9	69	5	72	.	.
L14-265	L99-226	436	46	93	13	89	5	77	.	.
L14-276	L99-226	803	60	84	15	72	7	69	.	.
L10-146	HOCP96-540	94	.	.	.	.	.	.	.	.
L14-276		108	7	79	3	86	.	.	.	.
L15-306	HOCP14-885	217	13	75	5	80	3	83	.	.
HO16-600	HOCP14-885	1447	52	59	21	62	9	50	.	.
L12-201	HOCP14-885	310	.	.	.	.	.	.	.	.
L10-146	HOCP14-885	542	4	20	1	9	.	.	.	.
L12-201	L14-266	405	.	.	.	.	.	.	.	.
L12-201	L09-099	489	2	7	.	.	.	.	.	.
L12-218	L09-099	346	15	65	8	81	1	25	.	.
L15-298	L99-226	253	7	50	.	.	.	.	.	.
L14-265	L99-226	755	5	15	2	17	.	.	.	.
L09-840	HOCP96-540	383	.	.	.	.	.	.	.	.
HOCP96-561	L05-448	597	14	47	6	50	3	35	.	.
L11-187	L05-448	156	4	49	.	.	.	.	.	.
HOCP18-801	L14-267	381	3	21	.	.	.	.	.	.
L11-183	L14-267	635	26	63	11	68	4	52	.	.
L12-218	L14-267	220	7	54	4	70	1	33	.	.
HO09-832	HOCP09-804	163	10	77	4	82	1	48	.	.
HOCP96-561	HO11-532	82	6	83	4	96	2	93	.	.
L07-057	HO11-532	231	.	.	.	.	.	.	.	.
L14-265	HO13-705	147	1	17	.	.	.	.	.	.
L14-265	L01-299	316	2	13	.	.	.	.	.	.
HOCP85-845	21P31	126	2	39	.	.	.	.	.	.
HOCP96-540	21P36	210	.	.	.	.	.	.	.	.

Female	Male	Survive	1st Line No.	1st Line Rank Percentile	2nd Line No.	2nd Line Rank Percentile	Increases No.	Increases Rank Percentile	Assignments No.	Assignments Rank Percentile
LCP85-384	21P38	122	3	48	1	45	1	62	.	.
HO08-717	HOCP14-885	623	1	1	1	6	1	8	.	.
LCP85-384	21P40	120	9	85	3	85	.	.	.	.
HOCP96-540	21P41	119	.	.	.	.	.	.	.	.
L14-282	L14-267	91	9	92	5	98	3	96	.	.
L94-433	HO11-532	125	.	.	.	.	.	.	.	.
L11-183	HOL15-508	399	.	.	.	.	.	.	.	.
HOCP00-950	HO11-573	75	1	36	.	.	.	.	.	.
HOCP96-561	HO11-573	117	13	95	2	66	1	67	.	.
L11-183	HO11-573	211	.	.	.	.	.	.	.	.
L11-187	HOCP97-609	384	23	74	8	77	2	42	.	.
2022 Series										
HoCP04-838	L12-201	136	0	11	0	17	.	.	.	.
Ho16-617	HoCP09-804	214	22	84	4	70	.	.	.	.
Ho16-617	Ho11-532	54	2	51	0	17	.	.	.	.
L14-282	L12-201	224	13	62	4	68	.	.	.	.
Ho11-532	Ho12-630	166	2	34	1	50	.	.	.	.
Ho16-608	L12-201	392	17	54	4	57	.	.	.	.
Ho15-964	L12-201	790	5	28	0	17	.	.	.	.
Ho16-600	HoL15-993	322	5	35	3	56	.	.	.	.
L03-371	HoH15-926	181	13	72	2	58	.	.	.	.
HoCP13-737	HoCP14-885	198	13	69	5	74	.	.	.	.
Ho13-708	HoCP14-885	645	41	67	12	70	.	.	.	.
L11-183	Ho12-630	233	17	73	8	84	.	.	.	.
Ho15-960	L12-201	307	11	49	4	60	.	.	.	.
L16-360	HoCP96-540	230	26	86	4	67	.	.	.	.
L14-282	HoCP96-540	192	16	76	8	86	.	.	.	.
LCP85-384	Ho11-532	182	0	11	0	17	.	.	.	.
L15-312	Ho11-532	66	9	94	1	65	.	.	.	.
HoCP14-867	HoCP96-540	635	20	45	5	53	.	.	.	.
Ho17-725	HoCP96-540	250	31	88	15	94	.	.	.	.
L11-183	Ho15-930	418	25	64	6	64	.	.	.	.
HoL08-718	Ho15-930	70	7	82	3	87	.	.	.	.
L03-371	Ho12-630	242	29	87	13	92	.	.	.	.
Ho11-573	Ho16-600	45	10	98	6	98	.	.	.	.
Ho16-680	Ho15-930	343	1	25	0	17	.	.	.	.

			1st Line		2nd Line		Increases		Assignments	
Female	Male	Survive	No.	Rank Percentile	No.	Rank Percentile	No.	Rank Percentile	No.	Rank Percentile
Ho14-836	Ho12-630	446	15	47	5	58	.	.	.	.
US16-2013	CP12-1753	163	5	44	4	74	.	.	.	.
L15-306	Ho15-930	104	23	98	5	90	.	.	.	.
Ho16-635	Ho11-573	47	3	68	0	17	.	.	.	.
Ho13-708	HoCP09-857	81	3	51	3	84	.	.	.	.
Ho16-635	HoCP09-857	86	0	11	0	17	.	.	.	.
HoL15-511	Ho12-630	369	14	52	2	48	.	.	.	.
Ho15-945	Ho12-630	318	5	36	0	17	.	.	.	.
Ho13-739	Ho11-573	448	39	80	18	85	.	.	.	.
Ho15-963	Ho15-930	175	22	90	6	83	.	.	.	.
Ho16-666	Ho15-930	136	0	11	0	17	.	.	.	.
HoL15-511	HoCP14-826	439	31	72	4	55	.	.	.	.
Ho15-930	Ho11-573	192	0	11	0	17	.	.	.	.
Ho16-609	Ho11-573	173	0	11	0	17	.	.	.	.
Ho16-657	HoCP09-857	111	0	11	0	17	.	.	.	.
Ho16-680	Ho11-573	220	0	11	0	17	.	.	.	.
Ho17-732	Ho11-573	180	0	11	0	17	.	.	.	.
HoL15-511	Ho11-573	49	8	97	1	72	.	.	.	.
Ho16-653	Ho11-573	232	34	94	10	88	.	.	.	.
HoCP91-555	HoCP14-826	160	0	11	0	17	.	.	.	.
HoCP91-555	Ho15-960	313	0	11	0	17	.	.	.	.
Ho15-972	HoCP14-830	174	0	11	0	17	.	.	.	.
HoL15-508	HoL15-993	225	14	65	1	43	.	.	.	.
HoCP15-519	HoL15-993	206	5	41	0	17	.	.	.	.
HoCP14-897	Ho11-573	239	0	11	0	17	.	.	.	.
Ho15-963	Ho11-573	233	2	31	0	17	.	.	.	.
HoL15-501	Ho11-573	462	24	58	13	76	.	.	.	.
Ho16-678	Ho15-945	189	0	11	0	17	.	.	.	.
HoL15-501	HoCP14-885	386	22	61	7	69	.	.	.	.
HoCP15-996	HoCP14-885	216	0	11	0	17	.	.	.	.
HoCP91-555	Ho13-739	130	11	78	7	92	.	.	.	.
HoL15-511	Ho16-647	196	17	79	8	86	.	.	.	.
Ho07-613	Poly19-8 (Ho15-945, Ho07-613, Ho16-626)	221	0	11	0	17	.	.	.	.
HoCP13-758	Poly19-9	92	10	85	6	95	.	.	.	.
Ho16-647	Poly19-9	179	0	11	0	17	.	.	.	.

			1st Line		2nd Line		Increases		Assignments	
Female	Male	Survive	No.	Rank Percentile	No.	Rank Percentile	No.	Rank Percentile	No.	Rank Percentile
Ho11-556	HoCP18-857	118	12	83	7	93	.	.	.	.
HoCP17-707	HoCP09-804	381	5	35	2	47	.	.	.	.
L10-147	HO08-730	848	6	29	0	17	.	.	.	.
L11-183	L06-001	121	58	99	27	99	.	.	.	.
L01-283	HOCP14-885	647	43	70	19	78	.	.	.	.
L06-040	L09-099	77	6	75	2	75	.	.	.	.
HO13-739	L14-267	190	13	71	6	80	.	.	.	.
HO19-739	L09-112	422	2	27	1	38	.	.	.	.
L15-320	L09-112	108	1	32	0	17	.	.	.	.
L10-147	HOCP09-804	70	0	11	0	17	.	.	.	.
HOCP09-814	L99-226	324	0	11	0	17	.	.	.	.
HOCP96-561	HO11-532	62	10	96	4	94	.	.	.	.
L14-265	HO13-705	226	5	37	2	54	.	.	.	.
L05-448	21P33	87	0	11	0	17	.	.	.	.
L12-227	21P35	912	4	27	2	37	.	.	.	.
L05-448	21P37	133	0	11	0	17	.	.	.	.
LCP85-384	21P38	967	2	24	1	35	.	.	.	.
L12-201	L09-112	338	3	31	1	40	.	.	.	.
L14-282	L14-267	1656	17	33	5	41	.	.	.	.
L12-201	L14-267	792	0	11	0	17	.	.	.	.
HOCP04-847	L09-099	437	0	11	0	17	.	.	.	.
L94-433	HO11-532	1017	69	70	12	59	.	.	.	.
L11-183	HO11-573	817	3	26	0	17	.	.	.	.
L11-183	HOCP09-804	76	4	58	1	62	.	.	.	.
L07-057	L19-006	224	30	93	12	91	.	.	.	.
L05-457	L99-233	349	22	66	5	63	.	.	.	.
L11-183	HO18-878	176	0	11	0	17	.	.	.	.
HO09-9401	L99-233	130	4	45	1	52	.	.	.	.
HO09-9401	L99-233	164	5	43	0	17	.	.	.	.
L11-183	L99-233	378	0	11	0	17	.	.	.	.
L09-123	L99-233	140	6	53	0	17	.	.	.	.
L11-183	HOCP91-552	142	13	81	3	73	.	.	.	.
L19-021	L99-226	370	31	77	2	47	.	.	.	.
L10-147	HO06-563	2504	59	39	7	39	.	.	.	.
L09-123	HO06-563	840	9	33	0	17	.	.	.	.
L10-147	L99-233	1265	31	41	7	49	.	.	.	.
HOCP92-624	L99-233	70	6	78	2	77	.	.	.	.

			1st Line		2nd Line		Increases		Assignments	
Female	Male	Survive	No.	Rank Percentile	No.	Rank Percentile	No.	Rank Percentile	No.	Rank Percentile
L05-457	L99-233	540	1	23	1	36	.	.	.	.
L09-123	L99-233	70	4	62	2	77	.	.	.	.
HOCP04-838	L99-233	211	0	11	0	17	.	.	.	.
L11-183	L09-099	196	7	49	2	57	.	.	.	.
HO09-840	L99-226	223	28	89	17	97	.	.	.	.
L10-147	L99-226	1679	86	56	34	72	.	.	.	.
L05-457	HO06-563	227	12	59	7	80	.	.	.	.
L11-183	HO06-563	340	1	25	0	17	.	.	.	.
HOCP92-624	L06-001	773	0	11	0	17	.	.	.	.
HO09-9401	HOCP97-609	193	25	92	1	46	.	.	.	.
L09-099	22P3	714	19	42	3	42	.	.	.	.
HOCP91-552	22P4	852	20	39	3	41	.	.	.	.
HOCP92-624	L99-226	219	8	50	0	17	.	.	.	.
L11-187	L99-226	215	0	11	0	17	.	.	.	.
L15-305	L13-251	202	21	84	0	17	.	.	.	.
L19-486	L09-099	132	0	11	0	17	.	.	.	.
HO09-840	L06-001	163	25	96	16	98	.	.	.	.
HOCP04-838	HOCP09-804	230	29	90	7	79	.	.	.	.
L09-123	L99-226	102	0	11	0	17	.	.	.	.
L07-057	L06-001	229	21	82	4	68	.	.	.	.
L01-299	L99-233	191	25	92	13	96	.	.	.	.
HO09-827	L99-226	200	10	56	1	45	.	.	.	.
HOCP92-624	L98-207	434	66	95	19	89	.	.	.	.
HO16-600	HO11-532	558	41	74	18	81	.	.	.	.
L15-320	HO11-532	530	42	76	7	62	.	.	.	.
L07-057	L14-267	181	23	91	12	96	.	.	.	.
L05-457	L99-233	460	34	74	15	82	.	.	.	.
HOCP96-561	22P10	124	3	40	0	17	.	.	.	.
L13-251	22P11	132	3	38	1	52	.	.	.	.
L99-233	L99-226	190	23	88	9	90	.	.	.	.
HOCP09-814	HOCP14-885	270	0	11	0	17	.	.	.	.
HOCP04-838	L06-001	160	0	11	0	17	.	.	.	.
HOCP96-561	L06-001	473	15	46	1	37	.	.	.	.
HOCP01-517	HO11-532	1338	43	47	2	35	.	.	.	.

			1st Line		2nd Line		Increases		Assignments	
Female	Male	Survive	No.	Rank Percentile	No.	Rank Percentile	No.	Rank Percentile	No.	Rank Percentile
L14-282	HO11-532	62	3	55	2	81	.	.	.	.
L19-486	HOCP14-885	361	21	63	2	49	.	.	.	.
L14-282	L14-267	208	11	60	1	45	.	.	.	.
L12-201	L09-099	216	25	86	6	76	.	.	.	.
L14-282	HO11-532	475	30	66	3	51	.	.	.	.
L12-218	L17-428	430	12	43	2	44	.	.	.	.
L14-276	HOCP97-609	205	18	80	3	64	.	.	.	.
HOCP01-517	L06-001	579	30	57	9	66	.	.	.	.
HOCP01-517	L99-226	803	38	54	5	50	.	.	.	.
L14-282	HOCP18-803	1023	0	11	0	17	.	.	.	.
L11-183	HO11-532	461	26	60	6	60	.	.	.	.
L10-146	HOCP14-885	690	41	64	9	61	.	.	.	.
HOCP96-561	HOCP14-885	724	25	48	6	54	.	.	.	.
L13-251	HO11-532	229	15	68	10	88	.	.	.	.
L09-123	HOCP96-540	264	6	38	5	71	.	.	.	.
L15-306	HO11-532	123	0	11	0	17	.	.	.	.
L98-209	HO11-532	329	14	52	5	66	.	.	.	.
L15-298	HOCP14-885	684	5	29	2	39	.	.	.	.
HOCP09-814	L14-267	932	7	30	4	43	.	.	.	.
HOCP14-885	SELF	131	0	11	0	17	.	.	.	.
2023 Series										
Ho17-9512	HoCP96-540	282	18	93	.	.	.	.	.	.
Ho17-9514	Ho12-630	202	11	90	.	.	.	.	.	.
Ho17-9512	Ho15-945	297	4	36	.	.	.	.	.	.
Ho17-9513	HoCP18-847	924	12	35	.	.	.	.	.	.
CP10-1208	CPCL02-8147	120	4	72	.	.	.	.	.	.
Ho17-9512	Poly 20-3	749	37	88	.	.	.	.	.	.
Ho17-9512	Poly 20-5	160	4	56	.	.	.	.	.	.
Ho17-9512	L14-267	363	27	96	.	.	.	.	.	.
Ho17-9512	Poly 20-18 (L09-112)	92	2	53	.	.	.	.	.	.
Ho17-9511	HoCP04-838	425	19	83	.	.	.	.	.	.
Ho17-9512	Ho12-630	523	5	25	.	.	.	.	.	.
Ho17-9512	HoCP18-859	465	16	73	.	.	.	.	.	.
Ho17-9512	Ho11-573	444	27	92	.	.	.	.	.	.
Ho17-9511	L14-267	395	6	41	.	.	.	.	.	.
L01-299	CP08-1183	377	15	80	.	.	.	.	.	.

			1st Line		2nd Line		Increases		Assignments	
Female	Male	Survive	No.	Rank Percentile	No.	Rank Percentile	No.	Rank Percentile	No.	Rank Percentile
L01-299	HoCP14-885	553	46	98	.	.	.	.	.	.
L17-428	HoCP14-885	233	15	94	.	.	.	.	.	.
HoCP20-523	HoCP20-541	570	4	19	.	.	.	.	.	.
L01-299	HoCP19-929	185	7	79	.	.	.	.	.	.
L17-428	HoCP17-714	198	4	50	.	.	.	.	.	.
L01-299	HoCP18-846	839	8	24	.	.	.	.	.	.
HoCP20-571	HoCP14-885	766	3	11	.	.	.	.	.	.
Ho15-964	HoCP14-885	1105	34	66	.	.	.	.	.	.
L14-282	HoCP20-529	979	37	78	.	.	.	.	.	.
L17-428	HoCP20-529	912	28	65	.	.	.	.	.	.
L11-183	HoCP20-529	728	5	18	.	.	.	.	.	.
HoCP96-540	L17-410	1387	10	21	.	.	.	.	.	.
Ho12-630	L17-410	896	33	76	.	.	.	.	.	.
L01-299	L17-410	393	2	16	.	.	.	.	.	.
L14-282	HoCP19-929	851	6	20	.	.	.	.	.	.
L11-183	HoCP19-929	814	2	8	.	.	.	.	.	.
L12-218	Ho11-532	221	3	37	.	.	.	.	.	.
Ho18-878	Ho11-532	518	13	57	.	.	.	.	.	.
Ho15-971	Ho11-532	539	14	59	.	.	.	.	.	.
L17-428	HoCP18-846	1217	40	70	.	.	.	.	.	.
L01-299	HoCP18-846	391	11	61	.	.	.	.	.	.
L11-183	HoCP18-846	464	16	74	.	.	.	.	.	.
HoCP04-852	HoCP18-846	963	10	30	.	.	.	.	.	.
L14-282	HoCP19-905	302	3	29	.	.	.	.	.	.
HoCP20-538	HoCP19-905	330	4	34	.	.	.	.	.	.
HoCP20-548	HoCP19-905	271	3	32	.	.	.	.	.	.
L14-282	HoCP14-885	675	0	4	.	.	.	.	.	.
HoCP20-541	HoCP14-885	1333	20	40	.	.	.	.	.	.
L14-282	HoL15-993	473	15	68	.	.	.	.	.	.
HoCP04-852	Ho11-532	992	8	22	.	.	.	.	.	.
L12-201	Ho11-532	245	1	12	.	.	.	.	.	.
L17-424	HoCP20-529	905	5	17	.	.	.	.	.	.
L17-428	HoCP20-529	1421	62	82	.	.	.	.	.	.
L01-299	HoCP17-714	683	20	62	.	.	.	.	.	.
L17-424	HoCP17-714	639	9	39	.	.	.	.	.	.
L17-424	HoCP19-960	712	7	27	.	.	.	.	.	.

			1st Line		2nd Line		Increases		Assignments	
Female	Male	Survive	No.	Rank Percentile	No.	Rank Percentile	No.	Rank Percentile	No.	Rank Percentile
HoCP19-903	Ho12-630	737	22	63	.	.	.	.	.	.
Ho07-613	Ho12-630	445	0	4	.	.	.	.	.	.
HoCP09-804	Ho12-630	397	7	46	.	.	.	.	.	.
L11-183	Ho12-630	199	10	89	.	.	.	.	.	.
Ho15-971	Ho12-630	482	4	23	.	.	.	.	.	.
Ho18-878	Ho12-630	231	11	86	.	.	.	.	.	.
HoCP20-538	Ho12-630	454	15	71	.	.	.	.	.	.
L17-424	Ho12-630	1415	25	47	.	.	.	.	.	.
Ho15-971	Ho13-739	155	3	49	.	.	.	.	.	.
L15-312	Ho15-930	183	0	4	.	.	.	.	.	.
L15-312	Ho11-532	345	9	60	.	.	.	.	.	.
HoCP20-553	Ho11-532	862	27	67	.	.	.	.	.	.
Ho18-878	Ho11-532	489	15	64	.	.	.	.	.	.
L17-424	Ho11-532	507	11	52	.	.	.	.	.	.
HO09-827	HOCP97-609	403	7	45	.	.	.	.	.	.
L15-320	L12-227	280	17	91	.	.	.	.	.	.
LCP81-010	23P1	121	9	96	.	.	.	.	.	.
L19-006	23P3	101	2	50	.	.	.	.	.	.
L05-457	L06-001	410	4	26	.	.	.	.	.	.
L10-147	L06-001	428	7	43	.	.	.	.	.	.
L10-147	HOCP97-609	304	0	4	.	.	.	.	.	.
L14-276	L12-227	219	7	69	.	.	.	.	.	.
HO16-600	L12-227	383	4	31	.	.	.	.	.	.
HO16-600	L99-233	365	1	9	.	.	.	.	.	.
L05-457	L99-233	147	10	95	.	.	.	.	.	.
L10-147	L99-233	416	2	15	.	.	.	.	.	.
HOCP92-624	L21-075	164	6	75	.	.	.	.	.	.
HOCP92-624	HOCP14-885	167	4	54	.	.	.	.	.	.
L19-486	L99-233	127	18	99	.	.	.	.	.	.
HOCP92-624	L01-299	215	3	38	.	.	.	.	.	.
L05-448	23P7	223	1	14	.	.	.	.	.	.
LCP81-010	23P8	307	0	4	.	.	.	.	.	.
LCP81-010	23P9	290	13	84	.	.	.	.	.	.
HO95-988	23P12	623	16	58	.	.	.	.	.	.
L14-276	L06-001	203	2	28	.	.	.	.	.	.
L10-147	L06-001	747	28	77	.	.	.	.	.	.
HO09-840	L99-226	692	12	44	.	.	.	.	.	.

			1st Line		2nd Line		Increases		Assignments	
Female	Male	Survive	No.	Rank Percentile	No.	Rank Percentile	No.	Rank Percentile	No.	Rank Percentile
L10-147	L99-226	932	4	13	.	.	.	.	.	.
HOCP04-838	LCP85-384	208	0	4	.	.	.	.	.	.
L10-147	LCP85-384	617	0	4	.	.	.	.	.	.
LCP81-010	LCP81-010	557	2	10	.	.	.	.	.	.
HOCP92-624	L99-233	427	5	33	.	.	.	.	.	.
L14-276	HOCP09-804	124	3	55	.	.	.	.	.	.
L10-147	HOCP09-804	599	26	81	.	.	.	.	.	.
HO09-827	L06-001	89	4	85	.	.	.	.	.	.
L14-276	HO06-563	207	4	48	.	.	.	.	.	.
L15-306	HO06-563	145	7	87	.	.	.	.	.	.
HOCP92-624	HOCP14-885	424	9	51	.	.	.	.	.	.
L14-265	HOCP14-885	367	6	42	.	.	.	.	.	.
HOCP14-885	HOCP14-885	817	0	4	.	.	.	.	.	.

2025 LOUISIANA SUGARCANE VARIETY DEVELOPMENT PROGRAM NURSERY AND INFIELD VARIETY TRIALS

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Five years after the initial hybridization of parents, clones that have met or exceeded criteria for desired characteristics at previous selection stages are assigned permanent numbers by each of the Louisiana Sugarcane Variety Development Programs. The LSU program assigns variety designations of "L," and the USDA program assigns variety designations of "Ho" and "HoCP." These varieties are planted in replicated nursery and infield tests at locations across the southern Louisiana sugarcane-growing areas.

One objective of the nursery and infield stages is to identify and select varieties that will perform well across the range of environments a commercial variety will encounter in Louisiana. Nursery tests are initially planted at three on-station locations (USDA-ARS - Ardoyne Farm, Iberia Research Station, and Sugar Research Station) during the year of assignment, and four to five additional and different off-station locations are planted the year after assignment. The off-station nurseries are Newton Cane, Inc. (Bunkie), Michael Melancon (Cecilia), Landry Farms (Paincourtville), LaCour Farm (Batchelor) along with the three infield trial locations at Blackberry Farms (Vacherie), Circle A Farms (Maurice) Iberia Research Station (Jeanerette). Both the LSU and USDA varieties were planted at each location. The locations, soil types, dates of planting and dates of harvest are listed in Table 1.

The on-station nursery trials were planted in single row (6-foot centers), 16-foot-long plots with 4-foot alleys. The off-station nurseries were planted in single row, 20-foot plots with 4-foot alleys. The infield tests were planted in two-row, 25-foot-long plots with 5-foot alleys. The experimental design for both nursery and infield tests was a randomized complete block with two replications per location. Commercial check varieties, L01-299, Ho 12-615, HoCP 14-885, L 15-306, and HoL 15-508 were planted in all nursery and infield tests for comparison.

Millable stalk counts for both nursery and infield tests were made in late July and August. A combine harvester and weigh wagon system was used to cut and weigh plots, respectively, for the infield tests. At harvest, 10-stalk samples were harvested by hand and stripped of leaves. A bundle weight was recorded to obtain a stalk weight (lb) estimate. Samples were then analyzed for sucrose content and fiber content. At the USDA-ARS laboratory, the pre-breaker press method was used to estimate fiber content. A juice sample was sent to the laboratory to obtain Brix and pol readings, which were used to estimate theoretical recoverable sugar per ton as estimated by the Winter-Carp formula as reported by Gravois and Milligan (1992). Samples sent to the Sugar Research Station sucrose laboratory were analyzed with a NIR Spectra Cane system to estimate sucrose and fiber content. Cane yield for the nursery tests was estimated as the product of stalk weight and stalk number. Cane yield for the infield tests was determined from the plot weights and reduced 14 percent to account for extraneous trash. Sugar per acre was calculated as the product of sugar per ton and cane yield.

The 2025 sugarcane growing season started with a historic snowstorm and freeze at the beginning of January that consisted of more than 10 inches of snow, and temperatures that fell into the single digits along the sugarcane belt of south Louisiana. This was followed by a later freeze in late February and early March. The harvest season benefited from relatively dry conditions in November and December, which facilitated field operations and contributed to the overall positive outcome of the 2025 crop. Baton Rouge and Lafayette recorded 63.3 and 72.4 inches of rainfall respectfully, which is above both cities average annual precipitation. The final off-station nursery trial was harvested on November 13, 2025. The most widely grown varieties in Louisiana were L 01-299, HoCP 14-885, Ho 12-615, and HoCP 09-804 occupying 54%, 15.6%, 15.9% and 6.1 % of the state's acreage, respectively. Recommended cultural practices were followed at all test locations. In the data analysis, L01-299 was used as the check variety and is highlighted in the tables. A linear mixed model was fit for each trait and adjusted for missing data using estimated marginal means (EMMs) calculated using the 'emmeans' package in R. Pairwise comparisons were performed using Dunnett's test, with L01-299 serving as the reference variety. Varieties that are significantly higher or lower than L01-299 are denoted by a plus (+) or minus (-), respectively, next to the value for each trait. This approach enables the identification of significant differences between the experimental varieties compared to the check variety.

References:
Gravois, K.A. and S.B. Milligan. 1992. Genetic relationships between fiber and sugarcane yield components. Crop Sci. 32: 62-66.

Table 1. 2025 Location, soil texture, and planting and harvest dates for the nursery and infield tests

Series	Location†	Stage	Soil Texture	Planting Date	2025 Harvest Date	Varieties Planted	Varieties Harvested
2020	Blackberry Farms	Infield	Commerce silt loam	09/27/21	Not Harvested	34	0
2020	Circle A Farm	Infield	Coteau-Patoutville-Frost silt loam	08/19/21	Not Harvested	34	0
2020	Newton Cane, Inc	Nursery	Norwood silt loam	08/17/21	Not Harvested	52	0
2020	Michael Melancon	Nursery	Loreauville silt loam	09/28/21	Not Harvested	52	0
2020	Landry Farms	Nursery	Sharkey silty clay loam	08/24/21	Not Harvested	52	0
2021	Sugar Research Station	Nursery	Commerce silt loam	11/09/21	Not Harvested	29	0
2021	Ardoyne Farm—U.S.D.A	Nursery	Commerce silt loam	11/15/21	Not Harvested	29	0
2021	Iberia Research Station	Nursery	Baldwin silty clay	11/11/21	Not Harvested	29	0
2021	Blackberry Farms	Infield	Commerce silt loam	09/16/22	Not Harvested	24	0
2021	Circle A Farm	Infield	Coteau-Patoutville-Frost silt loam	08/18/22	Not Harvested	24	0
2021	Newton Cane, Inc	Nursery	Norwood silt loam	09/07/22	11/12/25	46	1
2021	Michael Melancon	Nursery	Loreauville silt loam	09/20/22	Not Harvested	46	0
2021	Landry Farms	Nursery	Sharkey silty clay loam	09/14/22	11/13/25	46	1
2022	Sugar Research Station	Nursery	Commerce silt loam	10/27/22	11/17/25	31	1
2022	Ardoyne Farm—U.S.D.A	Nursery	Commerce silt loam	11/09/22	11/12/25	31	1
2022	Iberia Research Station	Nursery	Baldwin silty clay	11/01/22	11/05/25	31	1
2022	Blackberry Farms	Infield	Commerce silt loam	08/25/23	10/28/25	26	2
2022	Circle A Farm	Infield	Coteau-Patoutville-Frost silt loam	08/17/23	12/03/25	26	2
2022	Newton Cane, Inc	Nursery	Norwood silt loam	08/23/23	11/12/25	46	6
2022	Michael Melancon	Nursery	Loreauville silt loam	08/15/23	Not Harvested	46	0
2022	Landry Farms	Nursery	Sharkey silty clay loam	09/01/23	11/13/25	46	6
2023	Sugar Research Station	Nursery	Commerce silt loam	10/25/23	12/05/25	31	7
2023	Ardoyne Farm—U.S.D.A	Nursery	Commerce silt loam	10/30/23	11/12/25	31	7
2023	Iberia Research Station	Nursery	Baldwin silty clay	11/01/23	11/05/25	31	7
2023	Blackberry Farms	Infield	Commerce silt loam	09/19/24	10/13/25	30	12
2023	Circle A Farm	Infield	Coteau-Patoutville-Frost silt loam	08/21/24	12/03/25	30	12
2023	Iberia Research Station	Infield	Baldwin silty clay	08/16/24	11/18/25	30	12
2024	LaCour Farm	Nursery	Commerce silt loam	8/27/24	10/15/25	49	17
2024	Landry Farms	Nursery	Sharkey silty clay loam	09/03/24	11/13/25	49	17
2024	Sugar Research Station	Nursery	Commerce silt loam	10/23/24	11/20/25	24	16
2024	Ardoyne Farm—U.S.D.A	Nursery	Commerce silt loam	11/05/24	11/12/25	24	16
2024	Iberia Research Station	Nursery	Baldwin silty clay	10/29/24	11/19/25	24	16
2024	Blackberry Farms	Infield	Commerce silt loam	08/20/25		25	
2024	Circle A Farm	Infield	Coteau-Patoutville-Frost silt loam	08/13/25		25	
2024	Iberia Research Station	Infield	Baldwin silty clay	09/03/25		25	
2024	LaCour Farm	Infield	Commerce silt loam	08/22/25		15	
2025	Sugar Research Station	Nursery	Commerce silt loam	11/05/25		32	
2025	Ardoyne Farm—U.S.D.A	Nursery	Commerce silt loam	11/11/25		32	
2025	Iberia Research Station	Nursery	Baldwin silty clay	11/04/25		32	

† Ardoyne-U.S.D.A. Ardoyne Farm (Chacahoula), Blackberry Farms (Vacherie), Iberia Research Station (Jeanerette), Newton Cane, Inc. (Bunkie), Sugar Research Station (St. Gabriel), Michael Melancon (Cecilia), LaCour Farm (Bachelor), Landry Farms (Paincourtville), and Circle A Farm (Maurice)

Table 1. Off-station nursery second-stubble means of the 2021 “HoCP” assignment series on a Commerce silt loam soil at Newton Cane, Inc. in Bunkie, Louisiana in 2025.

Variety	Sugar Per Acre	Cane Yield	Sugar Per Ton	Stalk Weight	Stalk Number	Fiber
	(lbs./A)	(tons/A)	(lbs/ton)	(lbs)	(stalks/A)	(%)
L01-299	10859	35.2	308	2.12	33578	13.06
Ho12-615	14178	45.7	312	2.10	43560	11.95
L14-267	8157	25.2	322	1.74	29258	10.85
HoCP14-885	7692	24.6	315	2.01	23740	10.67
L15-306	11705	36.2	323	1.97	36300	11.75
HoL15-508	8935	27.5	326	1.59	34848	10.41
HoCP21-647	10599	31.1	341	1.74	35756	10.38

Table 2. Off-station nursery second-stubble means of the 2021 “HoCP” assignment series on a Commerce silt loam soil at Landry Farms in Paincourtville, Louisiana in 2025.

Variety	Sugar Per Acre	Cane Yield	Sugar Per Ton	Stalk Weight	Stalk Number	Fiber
	(lbs./A)	(tons/A)	(lbs/ton)	(lbs)	(stalks/A)	(%)
L01-299	13896	50.8	274	1.53	66974	13.47
Ho12-615	18830+	69.3+	272	2.22+	62981	13.64
HoCP14-885	17523	63.8	275	1.87	68426	8.92-
L15-306	13654	46.9	291	1.84	51002	10.77-
HoL15-508	19075+	61.3	311+	1.91	64433	10.48-
HoCP21-647	16413	54.8	299	1.76	62436	10.21-

Table 3. Off-station nursery second-stubble means of the 2021 “HoCP” assignment series across 2 locations (Newton and Landry) in 2025.

Variety	Sugar Per Acre	Cane Yield	Sugar Per Ton	Stalk Weight	Stalk Number	Fiber
	(lbs./A)	(tons/A)	(lbs/ton)	(lbs)	(stalks/A)	(%)
L01-299	12378	43.0	291	1.82	50276	13.27
Ho12-615	16504	57.5	292	2.16	53270	12.80
L14-267	10717	35.9	305	1.72	41636	10.95
HoCP14-885	13393	47.2	294	1.92	49404	9.47-
L15-306	12679	41.5	307	1.90	43651	11.26-
HoL15-508	14005	44.4	318+	1.75	49640	10.44-
HoCP21-647	13506	42.9	320+	1.75	49096	10.29-

Table 4. Off-station nursery first-stubble means of the 2022 “L” and “HoCP” assignment series on a Commerce silt loam soil at Newton Cane, Inc. in Bunkie, Louisiana in 2025.

Variety	Sugar Per Acre	Cane Yield	Sugar Per Ton	Stalk Weight	Stalk Number	Fiber
	(lbs./A)	(tons/A)	(lbs/ton)	(lbs)	(stalks/A)	(%)
L01-299	12503	43.0	291	1.78	48279	13.07
Ho12-615	13061	47.8	274	1.77	54087	12.88
HoCP14-885	15323	48.4	316	2.15	45556	11.38
L15-306	13094	43.6	303	2.05	41745	11.60
HoL15-508	14622	48.3	304	1.78	53906	9.81-
L22-114	11239	41.6	271	2.12	39386	13.60
HoCP22-709	7898	25.8	306	1.53	33940	11.75
HoCP22-737	10285	32.9	313	1.59	41382	9.91-
HoCP22-743	10144	33.5	303	1.93	36663	12.03
HoCP22-746	12072	40.9	296	1.54	52817	11.64
HoCP22-748	12615	42.7	295	2.13	40112	12.14

Table 5. Off-station nursery first-stubble means of the 2022 “L” and “HoCP” assignment series on a Commerce silt loam soil at Landry Farms in Paincourtville, Louisiana in 2025.

Variety	Sugar Per Acre	Cane Yield	Sugar Per Ton	Stalk Weight	Stalk Number	Fiber
	(lbs./A)	(tons/A)	(lbs/ton)	(lbs)	(stalks/A)	(%)
L01-299	14810	52.9	280	1.74	60439	13.31
Ho12-615	11193	40.2	279	1.49	53724	12.39
HoCP14-885	15415	49.8	306	2.39	41019-	9.85-
L15-306	10376	35.8	290	1.66	43560	10.45-
HoL15-508	13663	46.8	292	1.74	54268	9.62-
L22-114	11724	42.0	278	1.76	47734	12.68
HoCP22-709	14517	48.6	299	1.92	51183	11.77
HoCP22-737	11397	39.5	284	1.65	47734	9.36-
HoCP22-743	13046	44.0	296	1.87	47371	11.84
HoCP22-746	13429	44.3	304	1.89	47190	11.53-
HoCP22-748	10909	38.5	284	1.55	49912	11.41-

Table 6. Off-station nursery first-stubble means of the 2022 “L” and “HoCP” assignment series on a Baldwin silty clay soil at Melancon Farms in Henderson, Louisiana in 2025.

Variety	Sugar Per Acre	Cane Yield	Sugar Per Ton	Stalk Weight	Stalk Number
	(lbs./A)	(tons/A)	(lbs/ton)	(lbs)	(stalks/A)
L01-299	9917	30.7	323	1.65	37207
Ho12-615	6812	22.3	307	1.30	33396
HoCP14-885	10097	32.4	311	1.68	38296
L15-306	8987	28.7	312	1.45	39204
HoL15-508	7336	23.3	315	1.45	31944
L22-114	7045	23.4	301-	1.44	33033
HoCP22-709	8499	26.7	319	1.72	31036
HoCP22-737	10515	32.6	323	1.50	43378
HoCP22-743	9763	31.2	314	1.92	32307
HoCP22-746	7781	26.0	302-	1.40	36118
HoCP22-748	8641	28.2	307	1.38	40656

Table 7. Off-station nursery first-stubble means of the 2022 “L” and “HoCP” assignment series across 3 locations (Newton, Landry, and Melancon) in 2025.

Variety	Sugar Per Acre	Cane Yield	Sugar Per Ton	Stalk Weight	Stalk Number	Fiber
	(lbs./A)	(tons/A)	(lbs/ton)	(lbs)	(stalks/A)	(%)
L01-299	12410	42.2	298	1.72	48642	13.19
Ho12-615	10355	36.8	287	1.52	47069	12.64
HoCP14-885	13612	43.5	311	2.08	41624	10.62-
L15-306	10819	36.0	302	1.72	41503	11.02-
HoL15-508	11873	39.5	304	1.66	46706	9.72-
L22-114	10003	35.7	283	1.77	40051	13.14
HoCP22-709	10305	33.7	308	1.72	38720	11.76-
HoCP22-737	10732	35.0	307	1.58	44165	9.64-
HoCP22-743	10984	36.2	305	1.91	38780	11.93-
HoCP22-746	11094	37.1	301	1.61	45375	11.59-
HoCP22-748	10722	36.5	295	1.69	43560	11.78-

Table 8. Off-station nursery plantcane means of the 2023 “L” and “HoCP” assignment series on a Baldwin silty clay soil at LaCour Farm in ???, Louisiana in 2025.

Variety	Sugar Per Acre	Cane Yield	Sugar Per Ton	Stalk Weight	Stalk Number	Fiber
	(lbs./A)	(tons/A)	(lbs/ton)	(lbs)	(stalks/A)	(%)
L01-299	12298	41.1	299	2.03	40475	11.28
Ho12-615	11824	42.6	277	1.87	45556	12.71
HoCP14-885	15405	51.5	299	2.08	49549	9.38-
L15-306	15900	51.4	310	2.34	44104	11.05
HoL15-508	15646	49.7	316	2.12	47008	9.52
L 23-140	11774	37.3	316	1.56	47916	9.32-
L 23-142	8398	27.7	304	1.71	32488	8.75-
L 23-146	11299	37.9	298	2.05	37389	12.71
L 23-156	10753	40.1	268	1.86	43015	13.36+
L 23-163	6858	24.1	284	1.32-	36481	12.90
L 23-164	14681	51.5	284	2.23	46101	9.12-
L 23-165	10663	34.1	312	1.88	36300	12.11
HoCP23-801	11587	37.5	309	1.85	41200	12.02
HoCP23-806	11963	38.7	309	2.00	38659	12.62
HoCP23-807	15404	48.8	317	2.05	47553	9.09-
HoCP23-828	12927	37.6	343	2.18	34666	12.52
HoCP23-834	14616	46.6	311	2.23	41745	11.38
HoCP23-835	11090	35.8	311	1.76	41019	9.76
HoCP23-842	11356	39.5	283	1.58	50094	12.88
HoCP23-846	12650	42.2	301	1.91	44286	10.49
HoCP23-853	14831	47.5	313	2.28	41563	10.60
HoCP23-854	11929	36.5	327	1.90	38659	10.19

Table 9. Off-station nursery plantcane means of the 2023 "L" and "HoCP" assignment series on a Commerce silt loam soil at Landry Farms in Paincourtville, Louisiana in 2025

Variety	Sugar Per Acre	Cane Yield	Sugar Per Ton	Stalk Weight	Stalk Number	Fiber
	(lbs./A)	(tons/A)	(lbs/ton)	(lbs)	(stalks/A)	(%)
L01-299	14034	48.9	287	2.34	41564	12.64
Ho12-615	16251	58.0	280	2.11	54994	13.48
HoCP14-885	14473	48.1	302	2.14	45194	9.86-
L15-306	12715	40.2	316	1.91	42108	9.56-
HoL15-508	12511	45.6	275	1.95	47372	9.65-
L 23-140	12098	43.8	277	1.76	49731	10.55-
L 23-142	11634	38.2	305	1.93	40112	8.65-
L 23-146	10430	39.2	268	1.82	42834	13.09
2023156	13053	50.2	261	1.99	50094	14.67+
L 23-163	12179	45.7	267	1.90	48098	14.03
L 23-164	10524	37.0	283	2.07	35937	9.17-
L 23-165	6423	27.4	234-	1.42	38660	11.15
HoCP23-801	13188	47.9	275	1.96	49368	11.89
HoCP23-806	14856	53.9	275	2.33	46283	13.29
HoCP23-807	16421	55.9	289	2.03	54813	9.99-
HoCP23-828	14149	45.7	307	2.36	38660	11.82
HoCP23-834	10637	40.2	263	1.85	43379	10.31-
HoCP23-835	14517	50.8	286	2.13	47916	10.59-
HoCP23-842	13540	50.1	271	1.61	61166+	13.50
HoCP23-846	12600	45.4	278	1.98	46101	11.62
HoCP23-853	15053	50.2	301	2.38	43560	11.02-
HoCP23-854	15276	49.4	308	1.94	51365	9.97-

Table 10. Off-station nursery plantcane means of the 2023 “L” and “HoCP” assignment series 2 locations, Lacour and Landry, in 2025.

Variety	Sugar Per Acre	Cane Yield	Sugar Per Ton	Stalk Weight	Stalk Number	Fiber
	(lbs./A)	(tons/A)	(lbs/ton)	(lbs)	(stalks/A)	(%)
L01-299	13166	45.0	293	2.19	41019	11.96
Ho12-615	14037	50.3	279	1.99	50275	13.09
HoCP14-885	14939	49.8	301	2.11	47371	9.62-
L15-306	14308	45.8	313	2.12	43106	10.30-
HoL15-508	14079	47.6	295	2.03	47190	9.59-
L 23-140	11936	40.5	296	1.66	48823	9.94-
L 23-142	10016	32.9	305	1.82	36300	8.70-
L 23-146	10865	38.6	283	1.94	40111	12.90
L 23-156	11903	45.1	265	1.93	46555	14.02+
L 23-163	9519	34.9	276	1.61-	42289	13.46+
L 23-164	12603	44.3	283	2.15	41019	9.14-
L 23-165	8543	30.8	273	1.65	37480	11.63
HoCP23-801	12387	42.7	292	1.90	45284	11.96
HoCP23-806	13409	46.3	292	2.16	42471	12.95
HoCP23-807	15912	52.3	303	2.04	51183	9.54-
HoCP23-828	13538	41.7	325	2.27	36663	12.17
HoCP23-834	12626	43.4	287	2.04	42562	10.84
HoCP23-835	12804	43.3	298	1.95	44467	10.17-
HoCP23-842	12448	44.8	277	1.59-	55630+	13.19
HoCP23-846	12625	43.8	289	1.94	45193	11.05
HoCP23-853	14942	48.8	307	2.33	42562	10.81
HoCP23-854	13603	43.0	318	1.92	45012	10.08-

Table 11. On-station nursery second stubble means of the 2022 “L” assignment series on a Commerce silt loam soil at U.S.D.A-Ardoyne Farm in Chacahoula, Louisiana in 2025.

Variety	Sugar Per Acre	Cane Yield	Sugar Per Ton	Stalk Weight	Stalk Number	Fiber
	(lbs./A)	(tons/A)	(lbs/ton)	(lbs)	(stalks/A)	(%)
L01-299	13166	46.7	284	1.99	46056	13.95
L14-267	10740	33.3	320+	2.18	33804	12.23
HoCP14-885	14513	47.3	307	2.25	41972	10.33-
L15-306	12572	42.8	295	2.25	37434	12.04
L22-114	10631	36.8	289	1.73	42426	14.39

Table 12. On-station nursery second stubble means of the 2022 “L” assignment series on a Baldwin silty clay soil at Iberia Research Station in Jeanerette, Louisiana in 2025.

Variety	Sugar Per Acre	Cane Yield	Sugar Per Ton	Stalk Weight	Stalk Number	Fiber
	(lbs./A)	(tons/A)	(lbs/ton)	(lbs)	(stalks/A)	(%)
L01-299	14695	52.4	280	2.22	47190	14.15
L14-267	15591	49.0	318+	2.65	37208	10.87-
HoCP14-885	14098	49.1	287	2.35	42199	10.59-
L15-306	15922	49.6	320+	2.10	47417	10.97-
L22-114	12358	44.4	278	1.91	46509	14.19

Table 13. On-station nursery second stubble means of the 2022 “L” assignment series on a Commerce silt loam soil at Sugar Research Station in St. Gabriel, Louisiana in 2025.

Variety	Sugar Per Acre	Cane Yield	Sugar Per Ton	Stalk Weight	Stalk Number	Fiber
	(lbs./A)	(tons/A)	(lbs/ton)	(lbs)	(stalks/A)	(%)
L01-299	15662	54.3	289	1.83	59441	13.98
L14-267	14374	48.3	297	2.05	46963	12.34-
HoCP14-885	11792	38.4	307	1.80	42426	10.45-
L15-306	17784	57.0	312+	2.08	55131	11.57-
L22-114	11456	41.2	277	1.80	45602	13.49

Table 14. On-station nursery second stubble means of the 2022 “L” assignment series across 3 locations (St. Gabriel, Iberia, and U.S.D.A. -Ardoyne Farm) in 2025.

Variety	Sugar Per Acre	Cane Yield	Sugar Per Ton	Stalk Weight	Stalk Number	Fiber
	(lbs./A)	(tons/A)	(lbs/ton)	(lbs)	(stalks/A)	(%)
L01-299	14508	51.1	284	2.01	50896	14.03
L14-267	13934	44.9	311+	2.29	39593-	11.81-
HoCP14-885	13468	44.9	300	2.14	42199	10.45-
L15-306	15426	49.8	309+	2.14	46661	11.53-
L22-114	11482	40.8	281	1.81	44846	14.02

Table 15. On-station nursery first stubble means of the 2023 "L" assignment series on a Commerce silt loam soil at U.S.D.A-Ardoyne Farm in Chacahoula, Louisiana in 2025.

Variety	Sugar Per Acre	Cane Yield	Sugar Per Ton	Stalk Weight	Stalk Number	Fiber
	(lbs./A)	(tons/A)	(lbs/ton)	(lbs)	(stalks/A)	(%)
L01-299	15142	53.1	286	2.15	49912	14.30
HoCP09-804	11835	39.9	297	1.81	44014	13.15
L14-267	15524	53.1	293	2.46	43106	12.29-
HoCP14-885	17223	54.6	317	2.32	46509	10.70-
L 23-140	13520	44.2	306	2.18	40611	12.03-
L 23-142	13150	41.5	317	2.26	36754	10.23-
L 23-146	13861	50.9	273	2.43	41745	13.72
L 23-156	9580	37.7	254	1.88	40157	16.55+
L 23-163	11561	42.8	268	1.53	55811	15.38
L 23-164	13331	43.6	305	1.93	45375	10.83-
L 23-165	13100	43.5	302	1.78	49232	12.27-

Table 16. On-station nursery first stubble means of the 2023 "L" assignment series on a Baldwin silty clay soil at Iberia Research Station in Jeanerette, Louisiana in 2025.

Variety	Sugar Per Acre	Cane Yield	Sugar Per Ton	Stalk Weight	Stalk Number	Fiber
	(lbs./A)	(tons/A)	(lbs/ton)	(lbs)	(stalks/A)	(%)
L01-299	11500	41.0	281	1.68	48778	12.91
HoCP09-804	10630	37.2	288	1.69	43560	13.60
L14-267	18395	59.4	307	2.75	42879	10.17
HoCP14-885	19012	63.7	299	2.72	46963	10.44
L 23-140	10262	35.1	293	1.90	36981	9.98
L 23-142	15510	56.0	277	2.81+	40157	9.52-
L 23-146	11300	44.0	257	2.10	41972	11.65
L 23-156	11368	46.5	244	2.07	44921	13.63
L 23-163	10427	39.5	268	1.49	52408	13.89
L 23-164	14776	50.6	292	2.15	47190	9.92
L 23-165	10060	35.8	281	1.67	43106	11.48

Table 17. On-station nursery first stubble means of the 2023 "L" assignment series on a Commerce silt loam soil at Sugar Research Station in St. Gabriel, Louisiana in 2025.

Variety	Sugar Per Acre	Cane Yield	Sugar Per Ton	Stalk Weight	Stalk Number	Fiber
	(lbs./A)	(tons/A)	(lbs/ton)	(lbs)	(stalks/A)	(%)
L01-299	10535	37.6	280	2.22	34258	13.25
HoCP09-804	9189	32.1	286	1.39	46282	15.68
L14-267	10569	32.7	323	2.39	27452	11.33
HoCP14-885	7399	28.1	261	1.83	30855	10.28-
L 23-140	15969	54.1	295	2.10	51047	11.00
L 23-142	9000	30.4	296	2.11	28586	10.94
L 23-146	9445	35.1	268	1.72	41972	12.90
L 23-156	14356	59.5	242	2.07	57399+	15.65
L 23-163	14927	56.3	268	1.62	69651+	13.99
L 23-164	14845	53.5	277	2.35	45602	11.95
L 23-165	10592	37.9	284	1.87	39703	13.39

Table 18. On-station nursery first stubble means of the 2023 "L" assignment series across 3 locations (St. Gabriel, Iberia, and U.S.D.A. -Ardoyne Farm) in 2025.

Variety	Sugar Per Acre	Cane Yield	Sugar Per Ton	Stalk Weight	Stalk Number	Fiber
	(lbs./A)	(tons/A)	(lbs/ton)	(lbs)	(stalks/A)	(%)
L01-299	12393	43.9	282	2.01	44316	13.49
HoCP09-804	10552	36.4	290	1.63	44619	14.14
L14-267	14829	48.4	308	2.53	37813	11.26-
HoCP14-885	14544	48.8	292	2.29	41443	10.48-
L 23-140	13250	44.5	298	2.06	42879	11.00-
L 23-142	12553	42.6	297	2.39	35166	10.23-
L 23-146	11535	43.3	266	2.08	41896	12.76
L 23-156	11768	47.9	247-	2.01	47493	15.28+
L 23-163	12305	46.2	268	1.55	59290+	14.42
L 23-164	14318	49.2	292	2.14	46056	10.90-
L 23-165	11251	39.0	289	1.77	44014	12.38

Table 19. On-station nursery plantcane means of the 2024 “L” assignment series on a Baldwin silty clay soil at Iberia Research Station in Jeanerette, Louisiana in 2025.

Variety	Sugar Per Acre	Cane Yield	Sugar Per Ton	Stalk Weight	Stalk Number	Fiber
	(lbs./A)	(tons/A)	(lbs/ton)	(lbs)	(stalks/A)	(%)
L01-299	14682	56.7	258	2.36	48098	13.30
HoCP14-885	21096	68.6	308	3.05	45829	9.48-
L15-306	16211	60.9	266	3.09	39476	10.77
HoL15-508	15799	55.0	286	2.33	47190	9.73-
L24-172	10186	37.8	266	1.95	39476	10.59
L24-173	8780	36.0	244	2.28	31536	11.82
LCP24-174	14338	57.0	252	3.47	32897	13.25
L24-175	10644	37.3	287	2.18	34258	11.77
L24-176	10507	43.9	239	2.77	31763	12.34
L24-177	13569	54.7	246	2.99	36527	13.43
L24-178	10914	44.9	242	2.66	33578	10.94
L24-179	11370	42.7	267	2.51	34031	12.12
L24-182	12983	52.4	246	2.27	46509	13.04
L24-184	10613	46.1	231	2.07	46963	13.78
L24-185	8391	37.4	224	2.01	37208	10.70
L24-186	9500	38.5	247	2.69	28586-	10.35
L24-188	7373-	29.6-	249	1.43	41518	15.37
L24-189	11798	49.6	241	3.21	30855-	15.44
L24-190	12815	48.9	264	2.60	36754	11.30
L24-191	9405	34.8	271	2.48	28359-	12.23

Table 20. On-station nursery plantcane means of the 2024 "L" assignment series on a Commerce silt loam soil at Sugar Research Station in St. Gabriel, Louisiana in 2025.

Variety	Sugar Per Acre	Cane Yield	Sugar Per Ton	Stalk Weight	Stalk Number	Fiber
	(lbs./A)	(tons/A)	(lbs/ton)	(lbs)	(stalks/A)	(%)
L01-299	12859	45.7	284	1.98	45148	13.60
HoCP14-885	16680	53.0	314	2.78+	38342	10.04-
L15-306	11923	44.5	270	2.16	40384	11.71
HoL15-508	18130	58.8	308	2.36	49912	9.58-
L24-172	10309	36.4	283	1.66	43787	12.60
L24-173	8245	29.5	279	1.73	34258	12.50
LCP24-174	14036	50.2	279	2.68	37434	13.60
L24-175	10617	36.8	288	2.08	35619	11.95
L24-176	9882	34.8	283	1.89	36754	13.27
L24-177	12983	46.1	281	2.13	43106	13.78
L24-178	10140	40.0	253	2.08	39930	11.05-
L24-179	12130	39.8	305	2.10	37888	11.91
L24-182	10826	40.9	265	2.14	38115	12.69
L24-184	11525	45.0	256	1.84	48778	13.93
L24-185	9812	36.1	272	1.47	48778	13.75
L24-186	13209	45.5	290	2.62	34712	11.69
L24-188	8875	32.3	275	1.65	39703	15.64+
L24-189	12174	50.6	241-	2.93+	34712	14.63
L24-190	11028	37.8	288	2.38	31536	10.89-
L24-191	10634	34.5	308	1.98	34712	11.18-

Table 21. On-station nursery plantcane means of the 2024 “L” assignment series on a Commerce silt loam soil at U.S.D.A-Ardoyne Farm in Chacahoula, Louisiana in 2025.

Variety	Sugar Per Acre	Cane Yield	Sugar Per Ton	Stalk Weight	Stalk Number	Fiber
	(lbs./A)	(tons/A)	(lbs/ton)	(lbs)	(stalks/A)	(%)
L01-299	11846	47.5	251	2.11	45148	13.36
HoCP14-885	14096	47.2	299+	2.18	44241	9.69-
L15-306	13667	46.7	295	2.45	37888	11.16-
HoL15-508	14776	51.9	284	2.95	35166	9.44-
L24-172	11614	42.3	275	2.04	41518	12.26
L24-173	10258	36.6	280	2.11	34712	11.84
LCP24-174	14515	54.6	263	3.13	34939	12.89
L24-175	10800	39.8	273	1.92	41518	11.84
L24-176	11162	39.2	285	2.80	28132-	12.31
L24-177	11594	48.2	241	2.47	39022	13.53
L24-178	11389	43.7	260	2.70	32216-	11.11-
L24-179	10330	34.6	298+	2.21	31309-	11.22-
L24-182	13587	47.8	284	2.54	37661	12.92
L24-184	9596	38.0	252	2.28	33124	14.76
L24-185	9547	39.6	241	1.98	40611	12.52
L24-186	10584	39.7	268	2.62	29947-	11.20-
L24-188	8044	32.7	246	1.78	36754	14.82
L24-189	10131	39.0	260	2.66	29267-	14.44
L24-190	10739	38.2	282	2.58	29494-	10.56-
L24-191	11707	39.6	297	2.62	30174-	11.38

Table 22. On-station nursery plantcane means of the 2024 “L” assignment series across 3 locations (St. Gabriel, Iberia, and U.S.D.A. -Ardoyne Farm) in 2025.

Variety	Sugar Per Acre	Cane Yield	Sugar Per Ton	Stalk Weight	Stalk Number	Fiber
	(lbs./A)	(tons/A)	(lbs/ton)	(lbs)	(stalks/A)	(%)
L01-299	13129	50.0	264	2.15	46131	13.42
HoCP14-885	17291+	56.3	307+	2.67	42804	9.74-
L15-306	13933	50.7	277	2.57	39249	11.21-
HoL15-508	16235	55.2	293+	2.55	44089	9.58-
L24-172	10703	38.8	275	1.88	41594	11.82-
L24-173	9094-	34.1-	268	2.04	33502-	12.06-
LCP24-174	14296	53.9	265	3.09+	35090-	13.25
L24-175	10687	38.0	283	2.06	37132	11.85-
L24-176	10517	39.3	269	2.49	32216-	12.64
L24-177	12716	49.6	256	2.53	39552	13.58
L24-178	10814	42.8	252	2.48	35241-	11.03-
L24-179	11277	39.1	290	2.27	34409-	11.75-
L24-182	12465	47.0	265	2.32	40762	12.88
L24-184	10578	43.0	246	2.06	42955	14.15
L24-185	9250-	37.7-	246	1.82	42199	12.32
L24-186	11098	41.2	268	2.65	31082-	11.08-
L24-188	8097-	31.5-	257	1.62	39325	15.28+
L24-189	11368	46.4	248	2.93+	31611-	14.83+
L24-190	11528	41.6	278	2.52	32594-	10.92-
L24-191	10582	36.3-	292+	2.36	31082-	11.60-

2025 LOUISIANA "Ho" and "HoCP" NURSERY VARIETY TRIALS

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In the USDA Sugarcane Research Unit's sugarcane variety program, promising experimental varieties are assigned permanent numbers three years after selection in the seedling stage. These varieties are planted in replicated yield trials (randomized complete block design with two replications) in the same year permanent variety numbers are assigned. Because assignments take place later in the year when most farmers have finished their plantings, these nursery trials are planted on research stations. In 2025, trials were planted on light soil at USDA's Ardoyne Farm in Schriever, heavy soil at LSU AgCenter's Iberia Research Station in Jeanerette and light soil at the Sugar Research Station in St. Gabriel. Plots in these trials are 16 feet long by six feet (one row) wide with a four-foot alley between plots. A minimum of 3 commercial varieties are planted in each test for comparison purposes. The following year, experimental varieties advanced for further testing are planted in replicated nursery yield trials on commercial farms that represent the different regions of the sugarcane industry.

In the spring and summer, team members rate nursery test plots for yield traits such as population, stalk height, stalk diameter, erectness, etc. During the rating process, varieties are carefully inspected for the presence of any diseases, insect damage or other pest. If present, notes are taken indicating the amount and severity of each. Mature, millable stalks are counted in each plot in late July or early August. A 10-stalk sample is hand-cut from plots of active varieties during the harvest season. Samples from USDA nurseries are analyzed at the Juice Quality Laboratory at the USDA Ardoyne Farm, where they are weighed to determine stalk weight and processed for sucrose analysis. Estimates of theoretical recoverable sugar (TRS) per ton of cane are calculated based on Brix (% w/w) and pol reading (Z°) values, while estimated yields of cane per acre, sugar per acre, and number of stalks per acre are calculated based on results from juice analyses, stalk counts, and mean stalk weight. Varieties with yields equal to or higher than the control varieties and not susceptible to diseases are advanced for further testing.

Table 1 lists the planting and harvest dates of USDA nursery evaluations. A nursery trial was planted on heavy soil at Ardoyne Farm in 2021, but because of soil conditions, there was very poor germination, and it was decided not to collect data from this test. Results of trials harvested in 2025 are in tables 2 to 15. Varieties where both the cross and selection were done in Houma were assigned a prefix of "Ho". Varieties where a cross was made at the USDA Sugarcane Field Station in Canal Point, FL and selection was done in Houma have a "HoCP" prefix. Varieties having a "HoL" prefix are derived from a cross made at the LSU Sugar Research Station and selected from the USDA Ardoyne farm. Statistical analyses were run for each test and for each crop combined across locations using PROC MIXED procedures in SAS (version 9.4). Even though L 01-299 occupies more acreage; HoCP 14-885 is the 2nd leading variety, and its rapid expansion is expected to continue. For this report, HoCP 14-885 is highlighted in each table, and all other varieties are compared to it. Yield values that are significantly higher or lower ($P<0.05$) than values for HoCP 14-885 are noted with a '+' or '–', respectively.

Table 1. Planting and harvest dates of “Ho” nursery tests in 2025.

Series	Location[1/]	Soil Series [2/]	Planting Date	2022 Harvest	2023 Harvest	2024 Harvest	2025 Harvest
2021	IRS	Bscl	11/08/21	10/25	11/20	10/29	11/24
2021	STG	Csl	11/10/21	11/21	11/17	11/04	12/08
2022	AFH	ShA	10/27/22		11/30	12/19	10/30
2022	IRS	Bscl	11/01/22		11/20	10/29	11/24
2022	STG	Csl	11/02/22		11/28	11/04	12/08
2023	AFH	ShA	11/03/23			12/20	10/30
2023	IRS	Bscl	11/07/23			12/13	11/24
2023	STG	Csl	11/17/23			11/25	12/08
2024	AFL	CbA	11/05/24				11/24
2024	IRS	Bscl	11/07/24				11/25
2025	STG	Csl	11/05/25				
2025	IRS	Bscl	11/06/25				
2025	AFL	CbA	11/18/25				

[1]AFH = Ardoyne Farm heavy soil in Schriever, AFL = Ardoyne Farm light soil in Schriever, IRS= Iberia Research Station in Jeanerette, STG = Sugar Research Station in St. Gabriel

[2]Bscl = Baldwin silty clay loam, CbA = Cancienne silt loam, Csl = Commerce silt loam, ShA = Schriever clay

Table 2. Nursery third stubble means of the 2021 “HoCP” assignment series on Baldwin silty clay loam soil at the Iberia Research Station in Jeanerette, LA in 2025.

Variety	Sugar/ acre	Tons/ acre	Sugar/ ton	Weight stalk	Stalks/ acre
	(lbs.)	(tons)	(lbs.)	(lbs.)	(no.)
HoCP 14-885	13738	46.8	293	1.69	55584
L 01-299	13782	45.8	301	1.68	54790
Ho 13-739	11871	38.6	308	1.74	44808
HoCP 21-647	17048	56.0	304	2.13	52408
Means	14110	46.8	301	1.81	51898

Table 3. Nursery third stubble means of the 2021 “HoCP” assignment series on a Commerce silt loam soil at the Sugar Research Station in St. Gabriel, LA in 2025.

Variety	Sugar/ acre	Tons/ acre	Sugar/ ton	Weight stalk	Stalks/ acre
	(lbs.)	(tons)	(lbs.)	(lbs.)	(no.)
HoCP 14-885	17202	57.1	302	1.95	58307
L 01-299	17820	60.3	296	2.05	58988
Ho 13-739	13060	44.3	295	1.92	45829
HoCP 21-647	13029	43.9	297	2.09	42652
Means	15278	51.4	298	2.00	51444

Table 4. Nursery third stubble means of the 2021 “HoCP” assignment series across locations (Sugar Research Station and Iberia Research Station) in 2025.

Variety	Sugar/ acre	Tons/ acre	Sugar/ ton	Weight stalk	Stalks/ acre
	(lbs.)	(tons)	(lbs.)	(lbs.)	(no.)
HoCP 14-885	15470	52.0	298	1.82	56946
L 01-299	15801	53.0	298	1.86	56889
Ho 13-739	12466	41.4	301	1.83	45318
HoCP 21-647	15038	49.9	301	2.11	47530
Means	14694	49.1	299	1.90	51671

Table 5. Nursery second stubble means of the 2022 “HoCP” assignment series on a Schriever clay soil at the Ardoyne Farm in Schriever, LA in 2025.

Variety	Sugar/ acre	Tons/ acre	Sugar/ ton	Weight stalk	Stalks/ acre
	(lbs.)	(tons)	(lbs.)	(lbs.)	(no.)
HoCP 14-885	12231	41.0	294	1.75	44354
L 01-299	10647	37.0	288	1.79	41291
Ho 12-615	9300	32.6	286	1.38	47417
L 15-306	9778	35.6	275	1.59	44921
HoL 15-508	10539	35.2	292	1.62	42653
HoCP 22-709	11542	38.5	299	1.77	43447
HoCP 22-737	11125	38.9	286	1.58	49345
HoCP 22-743	11802	41.2	287	1.95	41972
HoCP 22-746	10807	36.7	294	1.53	47644
HoCP 22-748	6843	26.2	260	1.66	31536
Means	10461	36.3	286	1.66	43458

Table 6. Nursery second stubble means of the 2022 “HoCP” assignment series on a Baldwin silty clay loam soil at the Iberia Research Station in Jeanerette, LA in 2025.

Variety	Sugar/ acre	Tons/ acre	Sugar/ ton	Weight stalk	Stalks/ acre
	(lbs.)	(tons)	(lbs.)	(lbs.)	(no.)
HoCP 14-885	14516	49.8	292	1.84	54450
L 01-299	17451	59.7	293	1.98	59441
Ho 12-615	18919	63.3	299	2.07	61370
L 15-306	15593	50.9	307	2.01	50707
HoL 15-508	17806	59.0	302	2.32	51047
HoCP 22-709	17961	58.4	307	2.18	53656
HoCP 22-737	17371	56.2	310	2.06	54223
HoCP 22-743	20367	69.7	292	2.77	50253
HoCP 22-746	22885	77.9	294	2.42	65567
HoCP 22-748	17572	60.2	292	2.15	56038
Means	18044	60.5	299	2.18	55675

Table 7. Nursery second stubble means of the 2022 “HoCP” assignment series on a Commerce silt loam soil at the Sugar Research Station in St. Gabriel, LA in 2025.

Variety	Sugar/ acre	Tons/ acre	Sugar/ ton	Weight stalk	Stalks/ acre
	(lbs.)	(tons)	(lbs.)	(lbs.)	(no.)
HoCP 14-885	17444	57.5	304	2.10	55584
L 01-299	17726	58.2	306	2.24	50593
Ho 12-615	15525	50.9	305	1.78	57399
L 15-306	15077	51.8	291	2.09	49686
HoL 15-508	20584	69.6	295	2.24	62164
HoCP 22-709	13282	42.8	311	2.03	41518 -
HoCP 22-737	16824	54.7	307	2.06	52408
HoCP 22-743	16331	56.1	290	2.69	41745 -
HoCP 22-746	13160	44.7	294	1.74	51501
HoCP 22-748	17200	56.8	302	2.16	52408
Means	16315	54.3	301	2.11	51501

Table 8. Nursery second stubble means of the 2022 “HoCP” assignment series across locations (Ardoyne Farm, Iberia Research Station and Sugar Research Station) in 2025.

Variety	Sugar/ acre	Tons/ acre	Sugar/ ton	Weight stalk		Stalks/ acre
	(lbs.)	(tons)	(lbs.)	(lbs.)		(no.)
HoCP 14-885	14755	49.6	297	1.91		51372
L 01-299	15275	51.6	295	2.00		50442
Ho 12-615	14606	49.1	297	1.76		55304
L 15-306	13482	46.1	291	1.89		48438
HoL 15-508	16310	54.6	296	2.06		51954
HoCP 22-709	14262	46.6	306	1.99		46207
HoCP 22-737	15107	49.9	301	1.90		51992
HoCP 22-743	16172	55.8	290	2.47	+	44717
HoCP 22-746	15617	53.1	294	1.90		54904
HoCP 22-748	13872	47.7	285	1.99		46661
Means	14946	50.4	295	1.99		50199

Table 9. Nursery first stubble means of the 2023 “HoCP” assignment series on a Schriever clay soil at the Ardoyne Farm in Schriever, LA in 2025.

Variety	Sugar/ acre	Tons/ acre	Sugar/ ton	Weight stalk	Stalks/ acre
	(lbs.)	(tons)	(lbs.)	(lbs.)	(no.)
HoCP 14-885	12051	42.8	282	2.06	41745
L 01-299	9400	32.0	293	1.70	38909
Ho 12-615	11771	43.8	271	1.66	52635
L 15-306	13808	47.4	292	1.81	52522
HoL 15-508	15333	51.7	297	2.17	47757
HoCP 23-801	12596	44.0	288	1.73	51047
HoCP 23-806	12131	43.3	281	1.70	50933
HoCP 23-807	11969	38.4	312	1.47	52181
HoCP 23-828	11371	41.8	294	1.79	46736
HoCP 23-834	13809	47.5	291	1.89	50366
HoCP 23-835	13197	44.1	274	1.50	47644
HoCP 23-842	10027	33.8	297	1.52	44581
HoCP 23-846	12556	39.6	316	1.85	42766
HoCP 23-853	13743	47.6	288	2.08	46169
HoCP 23-854	11620	39.7	291	1.88	42879
Means	12359	42.5	291	1.78	47258

Table 10. Nursery first stubble means of the 2023 "HoCP" assignment series on a Baldwin silty clay loam soil at the Iberia Research Station in Jeanerette, LA in 2025.

Variety	Sugar/ acre		Tons/ acre		Sugar/ ton		Weight stalk		Stalks/ acre	
	(lbs.)		(tons)		(lbs.)		(lbs.)		(no.)	
HoCP 14-885	16098		55.8		289		2.36		47190	
L 01-299	16180		54.4		297		2.00		54563	
Ho 12-615	18002		61.5		292		2.11		57626	
L 15-306	11158		40.4		276		2.13		38002	
HoL 15-508	17206		64.6		265	-	2.84	+	45488	
HoCP 23-801	17512		59.4		295		2.31		51501	
HoCP 23-806	14767		49.5		298		2.31		42879	
HoCP 23-807	11389		44.3		257	-	2.22		42539	
HoCP 23-828	15053		55.1		274		2.29		48438	
HoCP 23-834	16792		60.1		281		2.31		51954	
HoCP 23-835	15163		55.8		272		2.48		44694	
HoCP 23-842	10695		43.9		244	-	1.52	-	57626	
HoCP 23-846	12754		45.1		282		2.07		43673	
HoCP 23-853	18173		70.5		259	-	3.04	+	46169	
HoCP 23-854	12976		46.0		282		2.41		38909	
Means	14928		53.8		278		2.29		47417	

Table 11. Nursery first stubble means of the 2023 "HoCP" assignment series on a Commerce silt loam soil at the Sugar Research Station in St. Gabriel, LA in 2025.

Variety	Sugar/ acre		Tons/ acre		Sugar/ ton		Weight stalk		Stalks/ acre	
	(lbs.)		(tons)		(lbs.)		(lbs.)		(no.)	
HoCP 14-885	24262		82.3		295		2.50		66021	
L 01-299	13150	-	44.0	-	299		1.76	-	50139	-
Ho 12-615	16434	-	55.3	-	297		1.84	-	60349	
L 15-306	15822	-	56.5	-	281		2.29		49459	-
HoL 15-508	16846	-	56.3	-	299		2.05	-	55358	-
HoCP 23-801	13556	-	46.5	-	289		2.14		50820	-
HoCP 23-806	15506	-	51.7	-	300		1.80	-	57626	
HoCP 23-807	15464	-	51.2	-	302		1.82	-	56265	-
HoCP 23-828	15928	-	51.8	-	308		2.15		48324	-
HoCP 23-834	17138	-	58.4	-	293		2.08	-	56038	-
HoCP 23-835	14226	-	48.2	-	295		2.14		45148	-
HoCP 23-842	15130	-	50.7	-	298		1.50	-	67609	
HoCP 23-846	13654	-	44.1	-	309		1.96	-	45148	-
HoCP 23-853	14333	-	47.1	-	305		2.34		40384	-
HoCP 23-854	15960	-	51.3	-	311		2.20		46736	-
Means	15827		53.0		299		2.03		53028	

Table 12. Nursery first stubble means of the 2023 “HoCP” assignment series across locations (Ardoyne Farm, Iberia Research Station and Sugar Research Station) in 2025.

Variety	Sugar/ acre	Tons/ acre	Sugar/ ton	Weight stalk	Stalks/ acre
	(lbs.)	(tons)	(lbs.)	(lbs.)	(no.)
HoCP 14-885	17471	60.3	289	2.30	51652
L 01-299	12910	43.4	296	1.82 -	47871
Ho 12-615	15402	53.6	287	1.87 -	56870
L 15-306	13596	48.1	283	2.07	46661
HoL 15-508	16462	57.5	287	2.35	49534
HoCP 23-801	14877	50.9	290	2.06	51641
HoCP 23-806	14135	48.1	293	1.93 -	50480
HoCP 23-807	13226	45.2	293	1.81 -	50328
HoCP 23-828	14236	49.6	292	2.08	47833
HoCP 23-834	15913	55.3	288	2.09	52786
HoCP 23-835	14075	49.1	280	2.04	45306
HoCP 23-842	11951	42.8	280	1.51 -	56605
HoCP 23-846	12988	43.0	302	1.96 -	43862
HoCP 23-853	15416	55.1	284	2.49	44241
HoCP 23-854	13519	45.7	295	2.16	42842
Means	14412	49.8	289	2.04	49234

Table 13. Nursery plant cane means of the 2024 “HoCP” assignment series on a Cancienne silt loam soil at the Ardoyne Farm in Schriever, LA in 2025.

Variety	Sugar/ acre	Tons/ acre	Sugar/ ton	Weight stalk	Stalks/ acre
	(lbs.)	(tons)	(lbs.)	(lbs.)	(no.)
HoCP 14-885	23245	88.5	262	3.50	50593
L 01-299	15180 -	55.5 -	274	2.98	37208 -
L 15-306	15726 -	63.0 -	249	3.22	39249 -
HoL 15-508	15975 -	59.3 -	269	3.22	36527 -
HoCP 24-902	11119 -	44.3 -	251	2.17 -	40838 -
HoCP 24-905	15761 -	67.0 -	235 -	3.05	44014 -
HoCP 24-906	12530 -	49.5 -	254	3.35	29494 -
HoCP 24-907	21146	71.5 -	296 +	3.20	44694 -
HoCP 24-908	16566 -	59.9 -	277	2.89 -	41745 -
Means	16361	62.1	263	3.06	40485

Table 14. Nursery plant cane means of the 2024 "HoCP" assignment series on a Baldwin silty clay loam soil at the Iberia Research Station in Jeanerette, LA in 2025.

Variety	Sugar/ acre (lbs.)		Tons/ acre (tons)		Sugar/ ton (lbs.)		Weight stalk (lbs.)		Stalks/ acre (no.)	
HoCP 14-885	23886		84.4		283		3.59		47077	
L 01-299	11059	-	43.8	-	252	-	2.76		31763	-
L 15-306	15208	-	57.7	-	264		2.96		39023	
HoL 15-508	16397	-	58.7	-	279		3.25		36073	-
HoCP 24-902	11593	-	49.6	-	234	-	2.11		47190	
HoCP 24-905	13218	-	53.6	-	247	-	2.66		41745	
HoCP 24-906	17343	-	68.2		253	-	3.36		40270	
HoCP 24-907	15442	-	56.0	-	276		3.05		36867	-
HoCP 24-908	13444	-	48.6	-	277		2.45		39703	
Means	15288		57.8		263		2.91		39968	

Table 15. Nursery plant cane means of the 2024 "HoCP" assignment series across locations (Ardoyne Farm and Iberia Research Station) in 2025.

Variety	Sugar/ acre (lbs.)		Tons/ acre (tons)		Sugar/ ton (lbs.)		Weight stalk (lbs.)		Stalks/ acre (no.)
HoCP 14-885	23565		86.5		273		3.55		48835
L 01-299	13120	-	49.7	-	263		2.87	-	34485
L 15-306	15467	-	60.3	-	256		3.09	-	39136
HoL 15-508	16186	-	59.0	-	274		3.23		36300
HoCP 24-902	11356	-	46.9	-	242	-	2.14	-	44014
HoCP 24-905	14490	-	60.3	-	241	-	2.85	-	42879
HoCP 24-906	14936	-	58.9	-	253		3.35		34882
HoCP 24-907	18294	-	63.7	-	286		3.12		40781
HoCP 24-908	15005	-	54.3	-	277		2.67	-	40724
Means	15824		59.9		263		2.99		40226

2025 LOUISIANA VARIETY DEVELOPMENT PROGRAM INFIELD TRIALS

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The infield stage of the variety development program is the first stage in which yield data is based on plot weights instead of estimated yields derived from stalk counts and stalk weight. Varieties from the LSU AgCenter program (L' s) are planted in infield tests the year after assignment while varieties from the USDA program (Ho's) are included two years after assignment. Infield trials are generally planted at three locations. In 2023, tests were planted at USDA's Ardoyne Farm in Schriever (HoCP varieties only) and commercial farms located in Vacherie and Maurice, LA, representing three distinct regions and soil types of the Louisiana sugarcane industry. In 2024, tests were planted at the LSU New Iberia Research Station and commercial farms located in Vacherie and Maurice, LA.

Personnel from the variety programs at the USDA and LSU AgCenter work cooperatively to plant, evaluate, and harvest infield tests on commercial farms. The test at Ardoyne Farm in Schriever is conducted by the USDA personnel only. Infield tests are planted in a randomized complete block design with two replications and at least three commercial varieties as controls. The plot size in infield tests are two rows wide by 24 feet long with a four-foot alley between plots. A 10-stalk sample is hand-cut from each plot just prior to combine harvesting and sent to the Juice Quality Laboratory at the Ardoyne Farm or St. Gabriel, where it is weighed to determine stalk weight and processed through the pre-breaker/press for a determination of sucrose content and fiber content. Brix (% w/w) and pol reading (Z°) values are then used to calculate the yield of theoretical recoverable sugar (TRS) per ton of cane. Plots are weighed with a tractor-pulled weigh-wagon equipped with electronic load cells mounted in the axle and hitch. The weight of harvested cane in each plot, stalk weight, and TRS are used to estimate sugar per acre, tons of cane per acre, sugar per ton of cane, and number of stalks per acre.

Table 1 lists planting and harvest dates of infield evaluations. Results of infield trials are presented in Tables 2 to 9. No samples were taken from any second stubble tests, because there were no experimental varieties left in the tests. Statistical analyses were done for each test and for each series across locations using PROC MIXED procedures in SAS (version 9.4). Even though L 01-299 occupies more acreage; HoCP 14-885 is the 2nd leading variety, and its rapid expansion is expected to continue, so it is highlighted in each table, and all other varieties are compared to it. Yield values that are significantly higher or lower (P<0.05) than values for L 01-299 are noted with a '+' or '- ', respectively.

Table 1. Planting and harvest dates of infield tests in 2025.

'Ho' Series	'L' Series	Location[1/]	Soil Series [2/]	Planting Date	2024 Harvest	2025 Harvest
2021		AFH	ShA	9/22/2023	12/20	12/22
2021	2022	BLK	CmA	8/25/2023	12/18	10/28
2021	2022	CAF	Co	8/7/2023	11/12	12/3
2022	2023	BLK	CmA	9/19/2024		10/13
2022	2023	CAF	Co	8/21/2024		12/3
2022	2023	IRS	Bscl	8/15/2024		11/18

[1]AFH = Ardoyne Farm heavy soil in Schriever, BLK = Blackberry Farm in Vacherie, CAF = Circle A Farm in Maurice, IRS = Iberia Research Station in Jeanerette.

[2] Bscl = Baldwin silty clay loam, Co = Coteau-Patoutville-Frost silt loam, CmA = Cancienne silt loam, ShA = Schriever clay.

Table 2. Infield first stubble means of the 2021 "Ho" assignment series on a Schriever clay soil at Ardoyne Farm in Schriever, LA in 2025.

Variety	Sugar/ acre	Tons/ acre	Sugar/ ton	Weight/ stalk	Stalks/ acre	Fiber
	(lbs.)	(tons)	(lbs.)	(lbs.)	(no.)	(%)
HoCP 14-885	5648	19.9	284	1.75	21489	10.5
L 01-299	5095	20.8	245 –	1.98	20052	13.0 +
Ho 12-615	3892	16.0	244 –	1.51	19885	13.3 +
L 15-306	4731	17.1	276	1.57	20509	11.3 +
HoL 15-508	6539	21.8	300	1.80	23041	10.0
HoCP 21-647	5524	19.2	289	1.76	20902	10.2
Means	5238	19.1	273	1.73	20980	11.4

Table 3. Infield first stubble means of the 2021 "Ho" and 2022 "L" assignment series on a Cancienne silt loam soil at Blackberry Farm in Vacherie, LA in 2025.

Variety	Sugar/ acre		Tons/ acre	Sugar/ ton		Weight/ stalk	Stalks/ acre	Fiber	
	(lbs.)		(tons)	(lbs.)		(lbs.)	(no.)	(%)	
HoCP 14-885	14950		44.3	329		2.04	42725	9.2	
L 01-299	11598	−	39.8	292	−	1.86	41600	10.9	
Ho 12-615	11859		40.4	293	−	1.88	41880	12.4	+
L 15-306	12101		39.5	306		1.96	39355	11.0	
HoL 15-508	13042		43.5	303		1.75	49227	8.4	
HoCP 21-647	14183		42.9	331		2.00	41990	9.0	
LCP 22-114	10796	−	36.6	295	−	1.97	36072	12.4	+
Means	12715		41.2	307		1.92	41836	10.5	

Table 4. Infield first stubble means of the 2021 "Ho" and 2022 "L" assignment series on a Coteau-Patoutville-Frost silt loam soil at Circle A Farm in Maurice, LA in 2025.

Variety	Sugar/ acre	Tons/ acre	Sugar/ ton		Weight/ stalk	Stalks/ acre	Fiber	
	(lbs.)	(tons)	(lbs.)		(lbs.)	(no.)	(%)	
HoCP 14-885	13979	43.6	321		2.17	39139	13.1	
L 01-299	12557	41.5	303		1.67	48384	15.0	+
Ho 12-615	10212	36.7	278	−	1.95	36810	16.3	+
L 15-306	11224	37.0	305		1.85	39386	12.9	
HoL 15-508	10596	36.4	289	−	2.17	32126	12.2	
HoCP 21-647	10790	35.3	305		1.96	37326	12.4	
LCP 22-114	9939	35.2	283	−	2.05	32957	15.5	+
Means	11328	37.9	298		1.97	38018	13.9	

Table 5. Infield first stubble means of the 2021 “Ho” and 2022 “L” assignment series across three locations (Ardoyne Farm, Blackberry Farm and Circle A Farm) in 2025.

Variety	Sugar/ acre		Tons/ acre		Sugar/ ton		Weight/ stalk	Stalks/ acre		Fiber	
	(lbs.)		(tons)		(lbs.)		(lbs.)	(no.)		(%)	
HoCP 14-885	11427		35.9		312		1.98	34339		10.9	
L 01-299	9750		34.0		280	−	1.84	36678		13.0	+
Ho 12-615	8654	−	31.0	−	272	−	1.78	32858		14.0	+
L 15-306	9352	−	31.2	−	296		1.79	33083		11.7	
HoL 15-508	9842		32.9		298		1.95	33515		10.3	
HoCP 21-647	10165		32.5		308		1.91	33406		10.5	
LCP 22-114†	8326	−	29.8	−	279	−	1.95	28154	−	13.8	+
Means	9649		32.5		292		1.88	33156		12.0	

†not tested at Ardoyne Farm

Table 6. Infield plant cane means of the 2022 “Ho” and 2023 “L” assignment series on a Cancienne silt loam soil at Blackberry Farm in Vacherie, LA in 2025.

Variety	Sugar/ acre		Tons/ acre		Sugar/ ton		Weight/ stalk		Stalks/ acre	Fiber	
	(lbs.)		(tons)		(lbs.)		(lbs.)		(no.)	(%)	
HoCP 14-885	15666		45.4		345		2.05		43115	9.5	
L 01-299	11766	−	36.8	−	320		1.58	−	45612	12.0	+
Ho 12-615	11866	−	35.8	−	332		1.93		35850	11.8	+
L 15-306	12366	−	38.5		321		1.93		38793	10.0	
HoL 15-508	13108		39.5		333		2.38		31968	8.5	
HoCP 22-709	12610	−	38.5		328		1.86		40324	11.2	
HoCP 22-737	10620	−	33.7	−	316	−	2.01		32314	8.6	
HoCP 22-743	11159	−	34.8	−	321		2.23		30235	10.9	
HoCP 22-746	13260		42.4		313	−	1.97		43450	10.0	
HoCP 22-748	13418		41.2		319		2.18		35655	10.7	
LCP 23-140	10518	−	32.0	−	329		1.86		33246	10.0	
L 23-142	11957	−	35.4	−	338		2.12		32328	8.2	
L 23-146	11085	−	34.9	−	318		2.03		33360	10.4	
L 23-156	12282	−	42.4		287	−	1.60	−	52155	13.6	+
L 23-163	7434	−	23.1	−	323		1.44	−	30865	13.4	+
L 23-164	11734	−	36.7	−	320		1.71		42474	11.9	+
L 23-165	9821	−	28.8	−	341		1.60	−	35009	10.7	
Means	11804		36.4		324		1.91		37456	10.7	

Table 7. Infield plant cane means of the 2022 "Ho" and 2023 "L" assignment series on a Coteau-Patoutville-Frost silt loam soil at Circle A Farm in Maurice, LA in 2025.

Variety	Sugar/ acre	Tons/ acre	Sugar/ ton		Weight/ stalk		Stalks/ acre	Fiber	
	(lbs.)	(tons)	(lbs.)		(lbs.)		(no.)	(%)	
HoCP 14-885	11623	36.6	318		1.98		35531	12.2	
L 01-299	9904	33.9	292	–	2.08		31416	15.1	+
Ho 12-615	13655	47.9	285	–	2.10		44458	15.3	+
L 15-306	12937	44.2	293	–	2.64	+	32260	13.7	+
HoL 15-508	8845	29.2	303		2.08		26849	11.8	
HoCP 22-709	13285	44.4	299	–	2.07		41714	14.8	+
HoCP 22-737	11499	36.2	318		2.15		32441	12.4	
HoCP 22-743	11345	38.0	300	–	2.62	+	28813	13.4	+
HoCP 22-746	8716	30.1	291	–	2.15		25876	13.5	+
HoCP 22-748	12533	45.5	276	–	2.18		41085	14.0	+
LCP 23-140	11063	37.8	292	–	1.86		39238	12.7	
L 23-142	9989	32.0	313		2.11		28977	12.2	
L 23-146	9338	32.8	284	–	1.98		32141	15.7	+
L 23-156	8123	31.1	262	–	2.00		29812	16.5	+
L 23-163	10910	36.1	305		1.75		39669	14.9	+
L 23-164	12156	41.2	295	–	2.27		35086	13.7	+
L 23-165	9772	33.6	291	–	1.93		33606	15.2	+
Means	10923	37.1	295		2.11		34057	13.9	

Table 8. Infield plant cane means of the 2022 "Ho" and 2023 "L" assignment series on a Baldwin silty clay loam soil at New Iberia Research Station in Jeanerette, LA in 2025.

Variety	Sugar/ acre (lbs.)	Tons/ acre (tons)	Sugar/ ton (lbs.)	Weight/ stalk (lbs.)	Stalks/ acre (no.)	Fiber (%)
HoCP 14-885	11218	35.0	318	2.83	22985	9.9
L 01-299	12442	44.6	280 –	2.74	31128	11.1
Ho 12-615	14079	51.5	272 –	2.70	38623	12.9 +
L 15-306	12347	41.0	300	2.31	34252	10.4
HoL 15-508	10986	31.5	351 +	2.36	25654	7.9 –
HoCP 22-709	14499	47.9	303	2.06 –	45215 +	11.9 +
HoCP 22-737	14814	45.0	328	2.21	39497	9.1
HoCP 22-743	11731	39.6	298	3.06	24455	11.1
HoCP 22-746	12637	38.7	315	2.01 –	40123	10.3
HoCP 22-748	13415	47.0	285 –	2.33	39562 –	10.8
LCP 23-140	7392	25.4	287	1.70 –	28278	10.0
L 23-142	11837	39.5	300	2.26	34208	8.4
L 23-146	11358	43.0	264 –	2.38	34974	12.4 +
L 23-156	10651	41.0	260 –	2.04 –	39014	13.0 +
L 23-163	12620	47.7	265 –	2.02 –	46738 +	13.6 +
L 23-164	5394	19.0	283 –	2.53	14113	9.4
L 23-165	9793	35.1	279 –	1.91 –	35541	13.0 +
Means	11601	39.5	293	2.32	33786	10.9

Table 9. Infield plant cane means of the 2022 “Ho” and 2023 “L” assignment series across three locations (Blackberry Farm, Circle A Farm, and New Iberia Research station) in 2025.

Variety	Sugar/ acre (lbs.)		Tons/ acre (tons)	Sugar/ ton (lbs.)		Weight/ stalk (lbs.)		Stalks/ acre (no.)	Fiber (%)	
HoCP 14-885	12836		39.0	327		2.29		33877	10.5	
L 01-299	11371		38.4	297	–	2.13		36052	12.7	+
Ho 12-615	13200		45.0	296	–	2.24		39644	13.3	+
L 15-306	12550		41.2	305	–	2.29		35101	11.4	
HoL 15-508	10980		33.4	329		2.27		28157	9.4	–
HoCP 22-709	13465		43.6	310		1.99		42417	12.6	+
HoCP 22-737	12311		38.3	321		2.12		34750	10.0	
HoCP 22-743	11411		37.4	306		2.63		27834	11.8	+
HoCP 22-746	11537		37.1	306		2.04		36483	11.2	
HoCP 22-748	13074		44.9	293	–	2.20		39465	11.8	+
LCP 23-140	9658	–	31.7	303	–	1.81	–	33587	10.9	
L 23-142	11261		35.6	317		2.16		31838	9.6	
L 23-146	10593		36.9	289	–	2.13		33491	12.8	+
L 23-156	10352		38.1	270	–	1.88	–	40327	14.4	+
L 23-163	10321		35.6	298	–	1.74	–	39090	14.0	+
L 23-164	9761	–	32.3	299	–	2.17		30557	11.6	
L 23-165	9795		32.5	304	–	1.81	–	34719	12.9	+
Means	11440		37.7	304		2.11		35141	11.8	

2025 LOUISIANA SUGARCANE VARIETY DEVELOPMENT PROGRAM: OUTFIELD VARIETY TRIALS

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The Outfield Variety Trials represent the final testing stage of experimental varieties for their potential for commercial production in Louisiana. Conducted through a collaborative effort between the LSU AgCenter, USDA-ARS, and the American Sugar Cane League in accordance with the provisions of the “Three-way Agreement of 2007”, these trials contribute to variety selection for commercial production as well for parents used in crossing decisions. To capture the diverse soil types in the Louisiana sugarcane belt, the trials take place across up to 12 distinct locations.

For an experimental variety to be considered for release, it must match or surpass the performance of commercial varieties in terms of yield and harvestability across different locations, crops, and years. Comprehensive varietal evaluation necessitates both overall yield performance data and performance data under challenging harvest conditions. This report aims to deliver overall yield data, specific location yield data by crop, and multi-year yield analyses for relevant experimental varieties from the 2025 Outfield trials.

Each outfield location employed a randomized complete block design with three replications. Test plots consisted of two rows, each 50 feet long, with a 5-foot alley separating them. All locations utilized a combine harvester for harvesting, and a weigh wagon equipped with load cells mounted on each axle and hitch for weighing each plot. A 10-stalk, whole-stalk sample, topped but unstripped of leaves, was collected from each plot and sent to the USDA-ARS sucrose laboratory for analysis. The samples were hand-cut, weighed, milled, and the juice was evaluated for Brix and pol levels. The final data reported the pounds of theoretical recoverable sugar per ton of cane. Cane Yield for each plot was estimated by plot weight, reduced by 14% to adjust for leaf trash and 10% for harvester efficiency. Stalk number was calculated by dividing adjusted cane yield by stalk weight. Adjustments made to cane yield resulted in lower estimated stalk numbers than those achieved by growers.

Interpreting yield data from a single year can be misleading, as the relative performance of varieties may fluctuate from year to year and between crops within a year. . Similarly, relying solely on across-location means can be deceptive since a variety, whether experimental or commercial, may exhibit inconsistent performance across different locations. Multi-year and multi-location testing help mitigate these issues by averaging out the variable performances. Additionally, relying on mean values alone can be deceiving, as they may not fully capture the variability and the true nature of the data. Mean values are sensitive to extreme values or outliers, which can distort the overall representation of the data. Furthermore, the means do not provide information about the distribution of data points or the presence of potential patterns or trends. To gain a more comprehensive understanding of the performance of experimental and commercial varieties, it is essential to consider other statistical measures, such as the median, range, and standard deviation, along with graphical representations like box plots and scatter plots. By incorporating these additional metrics and visualization techniques, a more accurate and nuanced assessment of the data can be achieved.

The most widely grown varieties in Louisiana (listed with % of total acreage in the industry) in 2024 were L 01-299, grown on 54 percent of the production acres, followed by HoCP 14-885 (15.6%), Ho 12-615 (5.9%), HoCP 09-804 (6.1%), and HoCP 96-540 (5.4).

In the data analysis, L01-299 was used as the check variety and is highlighted in the tables. A linear mixed model was fit for each trait, and adjsuted for missing data using estimated marginal means (EMMs) calculated using the 'emmeans' package in R. Pairwise comparisons were performed using Dunnett's test, with L01-299 serving as the reference variety. Varieties that are significantly higher or lower than L01-299 are denoted by a plus (+) or minus (-), respectively, next to the value for each trait. This approach enables the identification of significant differences between the experimental varieties compared to the check variety.

The 2025 sugarcane industry started with a historic snowstorm and freeze at the beginning of January that consisted of more than 10 inches of snow, and temperatures that fell into the single digits along the sugarcane belt of south Louisiana. This was followed by a later freeze in late February and early March. With a thirty-year average considered Baton Rouge and Lafayette finished above average on annual rainfall likely due to the flood risks in July and heavy winter rains, while New Orleans and Alexandria finished right above or at average. Most of this moisture came in the winter and summer months, turning to a dry spell which left some areas in a drought once harvest came along. It was a busy storm season in the Atlantic producing 13 named storms, fortunately Louisiana did not receive any of these storms. The Outfield harvest began on September 29, 2025 and ended on December 15, 2025.

Experimental varieties evaluated for yield in 2025 included: HoCP21-647 (eligible for release in 2028) in plant cane.

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Table 1. Commercial and experimental varieties planted in the outfield in 2025.

Commercial Varieties		Experimental Varieties		Experimental Varieties Introduced to the Outfield		
L01-299	HoCP14-885	HoCP 21-647	LCP 22-114	L 23-140	HoCP23-801	HoCP23-835
Ho 09-804	L15-306	HoCP 22-709	HoCP 22-737	L 23-142	HoCP23-806	HoCP23-842
HoL15-508	HoCP18-803	HoCP 22-743	HoCP 22-746	L 23-146	HoCP23-807	HoCP23-846
		HoCP 22-748		L 23-163	HoCP23-828	HoCP23-853
				L 23-164	HoCP23-834	HoCP23-854
HoCP96-540*	HoCP04-838*			L 23-165		
*Only planted in 2 locations						

* Heavy soil † Light soil

Table 2. Harvest and planting dates for all Outfield locations harvested in 2025.

			Plant Cane		First Ratoon		Second Ratoon		Third Ratoon	
Location	Parish	2025 Planting Date	2025 Harvest Date	2024 Planting Date	2025 Harvest Date	2023 Planting Date	2025 Harvest Date	2022 Planting Date	2025 Harvest Date	2021 Planting Date
Heavy Soil										
Al Landry*	Iberville	8/14		8/29	10/30	8/24	10/30	9/08	**	9/08
Allains*	St. Mary*	9/3	11/3	9/30	11/3	8/30	11/3	9/28	**	10/22
Mary*	Lafourche	8/29	9/29	8/27	9/29	9/15	9/29	9/27	9/29	9/27
Vincent	Vermillion	9/05	12/10	8/29						
Light Soil										
Brunswick†	Pt. Coupee	9/16	12/2	9/17	12/2	9/19	11/5	9/12	11/5	9/12
Glenwood†	Assumption	9/17	11/6	9/24	11/6	9/18	10/6	9/15	10/6	9/15
Harper†	Rapides	9/9	12/15	8/28	11/12	9/13	11/12	9/13	11/12	9/13
Lanaux†	St.John† †	8/13	11/18	8/22	11/18	8/29	10/17	8/16	10/17	8/16
St.John† †	St. Martin	8/25	11/19	8/14	10/22	9/6	10/22	9/18	**	9/19
R. Hebert†	Iberia	8/28	12/1	8/23	12/1	8/23	10/20	9/26	10/20	9/29

*No test planted at this location.   ** No test harvested at this location.

Table 3. Plant cane sugar per acre (lbs./A) for eight commercial and two experimental varieties at nine outfield locations in 2025.

Variety	Allains*	Mary*	Vincent*	Brunswick†	Glenwood†	Harper†	Lanaux†	R. Hebert†	St.John†	Overall Mean
L01-299	9063	8040	7288	8207	8260	10301	6505	8060	8095	8205
HoCP96-540				8973		8074 -				8523
HoCP04-838				9360		11021				10191 +
Ho12-615	8851	5611 -	10582 +	11415 +	9453	11081	10536 +	9481	8855	9540 +
HoCP14-802				10784 +		13713 +				12248 +
HoCP14-885	11501 +	10616 +	10261 +	12529 +	9970	16800 +	10447 +	13693 +	12270 +	12010 +
L15-306	9486	7774	9353	11310 +	9918	12819 +	10533 +	10516 +	8710	10047 +
HoL15-508	9887	10080	10150 +	10022	9856	11412	11094 +	9664	10395	10284 +
HoCP18-803	11502 +	11827 +	10193 +	10430 +	12632 +	13852 +	15629 +	12410 +	10595 +	12119 +
HoCP21-647	8837	7590	10207 +	9057	9912	12590 +	11659 +	9741	9109	9856 +

* Heavy soil   † Light soil

Table 4. Plant cane cane yield (tons/A) for eight commercial and two experimental varieties at nine outfield locations in 2025.

Variety	Allains*	Mary*	Vincent*	Brunswick†	Glenwood†	Harper†	Lanaux†	R. Hebert†	St.John†	Overall Mean
L01-299	34.3	34.2	25.3	30.9	31.4	38.6	21.5	29.0	25.9	30.1
HoCP96-540				32.8		29.5 -				31.2
HoCP04-838				32.8		41.9				37.4 +
Ho12-615	37.5	25.1 -	37.2 +	40.2 +	35.6	42.7	34.9 +	36.7 +	29.1	35.4 +
HoCP14-802				38.9 +		47.9 +				43.4 +
HoCP14-885	36.1	40.5	33.0 +	40.0 +	36.9	53.0 +	31.8 +	42.8 +	35.8 +	38.9 +
L15-306	31.6	32.4	32.5 +	38.7 +	37.0	47.9 +	33.3 +	36.3 +	27.5	35.2 +
HoL15-508	34.6	36.9	33.4 +	34.7	35.0	38.2	33.2 +	35.1	30.3	34.6 +
HoCP18-803	38.6	49.0 +	36.0 +	37.4	45.4 +	48.7 +	47.8 +	41.1 +	34.1 +	42.0 +
HoCP21-647	29.3	29.8	35.2 +	30.5	34.2	45.5	36.7 +	33.8	27.9	33.7

* Heavy soil † Light soil

Table 5. Plant cane sucrose content (lbs./tons) for eight commercial and two experimental varieties at nine outfield locations in 2025.

Variety	Allains*	Mary*	Vincent*	Brunswick†	Glenwood†	Harper†	Lanaux†	R. Hebert†	St.John†	Overall Mean
L01-299	264	237	288	264	265	266	303	278	294	272
HoCP96-540				274		271				272
HoCP04-838				283		263				273
Ho12-615	235 -	224	284	283	265	260	302	260	302	268
HoCP14-802				277		286				281
HoCP14-885	318 +	262	310	314 +	271	317 +	328	320 +	342 +	309 +
L15-306	300 +	238	288	293 +	267	267	317	290	317	286
HoL15-508	285	271 +	304	290	282	298 +	334 +	275	343 +	298 +
HoCP18-803	299 +	241	283	279	278	283	328	300	311	289 +
HoCP21-647	302 +	255	291	298 +	290	278	318	288	326 +	294 +

* Heavy soil † Light soil

Table 6. Plant cane stalk weight (lbs) for eight commercial and two experimental varieties at nine outfield locations in 2025.

Variety	Allains*	Mary*	Vincent*	Brunswick†	Glenwood†	Harper†	Lanaux†	R. Hebert†	St.John†	Overall Mean
L01-299	2.40	1.90	1.94	2.24	2.02	1.88	2.26	2.40	1.84	2.10
HoCP96-540				2.75 +		2.09				2.42 +
HoCP04-838				2.05		1.97				2.01
Ho12-615	2.37	1.95	1.70	2.18	1.90	1.65	1.99	2.24	1.82	1.98
HoCP14-802				2.04		1.69				1.86
HoCP14-885	2.61	1.85	2.33	2.47	2.21	1.81	2.62	2.65	2.32 +	2.32 +
L15-306	2.44	2.12	1.75	2.45	2.20	1.96	2.05	2.42	2.33 +	2.19
HoL15-508	2.50	2.01	1.78	2.46	1.99	1.73	2.06	2.53	2.09	2.13
HoCP18-803	2.34	2.61 +	1.93	2.36	2.75 +	2.08	2.42	2.61	2.30 +	2.38 +
HoCP21-647	2.40	2.16	1.88	2.53	2.32	1.87	2.46	2.22	2.09	2.21

* Heavy soil † Light soil

Table 7. Plant cane stalk number(stalks/A) for seven commercial and four experimental varieties at nine outfield locations in 2025.

Variety	Allains*	Mary*	Vincent*	Brunswick†	Glenwood†	Harper†	Lanaux†	R. Hebert†	St.John†	Overall Mean
L01-299	28817	36399	25976	23903	31524	41160	19421	24673	28407	28920
HoCP96-540				32877		28406 -				30642
HoCP04-838				24366		42550				35296
Ho12-615	32643	25679	43869 +	29816	38295	52320	35358 +	32897	32138	35890 +
HoCP14-802				32914		57215 +				45065 +
HoCP14-885	27765	43518	28537	44324 +	33724	58954 +	24950	33119	31205	36233 +
L15-306	25867	30722	37586 +	35285	34830	48928	34227 +	30284	23564	33477
HoL15-508	27812	36788	37631 +	31242	35266	44346	32167 +	28955	29220	33714
HoCP18-803	33102	37627	38046 +	31543	33530	47139	40171 +	31638	29946	35860 +
HoCP21-647	24549	27590	38435 +	26840	29533	48711	29896	30870	27157	31509

* Heavy soil † Light soil

Table 8. First ratoon sugar per acre (lbs./A) in eight commercial and one experimental variety at nine outfield locations in 2025.

Variety	Allains*	Landry*	Mary*	Brunswick†	Glenwood†	Harper†	Lanaux†	R. Hebert†	St.John†	Overall Mean
L01-299	7310	8027	7359	10470	9338	12549	10557	11887	8035	9387
HoCP96-540				7487 -		8634 -				8060
HoCP04-838				9043		11616				10329
Ho12-615	6785	8145	6366	11054	8695	11996	10653	9789	7464	8994
HoCP14-885	8102	12868 +	9828 +	11204	10589	18202 +	9911	11681	10463 +	11428 +
L15-306	6807	11215 +	8419	11881	8259	13006	9609	9332 -	6791	9480
HoL15-508	7808	10273 +	9606 +	11022	10424	14043	9830	9572 -	9775	10261
HoCP18-803	8416	11978 +	9185	11292	10985	14542	10121	9358 -	9310	10576 +
L20-065				10350						10350

* Heavy soil † Light soil

Table 9. First ratoon cane yield (tons/A) in eight commercial and one experimental variety at nine outfield locations in 2025.

Variety	Allains*	Landry*	Mary*	Brunswick†	Glenwood†	Harper†	Lanaux†	R. Hebert†	St.John†	Overall Mean
L01-299	27.9	29.5	24.7	35.7	34.2	48.3	33.0	40.5	27.2	33.4
HoCP96-540				29.8		32.7 -				31.2
HoCP04-838				31.9		41.6				36.7
Ho12-615	26.2	28.6	24.5	37.9	30.3	43.9	34.5	33.5	26.2	31.7
HoCP14-885	26.6	42.3 +	31.7	36.3	35.7	58.9 +	31.4	36.1	32.3	36.8
L15-306	24.5	36.6 +	29.7	39.2	29.8	46.1	31.3	32.2 -	22.8	32.5
HoL15-508	27.7	34.1	31.6	36.2	34.9	46.6	30.9	32.0 -	31.9	34.0
HoCP18-803	28.8	40.7 +	32.8 +	41.3	37.2	50.9	33.2	31.6 -	31.1	36.4
L20-065				29.8						29.8

* Heavy soil † Light soil

Table 10. First ratoon sucrose content (lbs./tons) in eight commercial and one experimental variety at nine outfield locations in 2025.

					Locations					Overall
Variety	Allains*	Landry*	Mary*	Brunswick†	Glenwood†	Harper†	Lanaux†	R. Hebert†	St.John†	Mean
L01-299	263	272	301	294	273	262	320	293	296	287
HoCP96-540				252 -		264				258 -
HoCP04-838				285		280				282
Ho12-615	259	284	259 -	292	288	274	308	293	285	282
HoCP14-885	305 +	304 +	311	307	297	308 +	313	323 +	325 +	310 +
L15-306	279	306 +	284	303	277	282	306	289	299	292
HoL15-508	284	302 +	304	305	299	301 +	315	300	307	302 +
HoCP18-803	291 +	294	280	273	294	282	306	296	299	291
L20-065				348 +						348 +

* Heavy soil † Light soil

Table 11. First ratoon stalk weight (lbs) in eight commercial and one experimental variety at nine outfield locations in 2025.

Variety	Allains*	Landry*	Mary*	Brunswick†	Glenwood†	Harper†	Lanaux†	R. Hebert†	St.John†	Overall Mean
L01-299	2.01	2.17	1.53	1.88	1.82	2.10	1.71	1.75	1.87	1.87
HoCP96-540				2.41 +		2.47				2.44 +
HoCP04-838				2.25		2.13				2.19 +
Ho12-615	1.64	1.61 -	1.59	1.95	1.92	1.82	2.03	1.96	1.73	1.81
HoCP14-885	2.02	1.99	1.83	2.68 +	2.12	2.39	2.08	2.53 +	2.10	2.19 +
L15-306	1.88	2.08	1.75	2.45 +	2.18	2.27	2.29 +	2.10	2.23	2.14 +
HoL15-508	1.65	1.83	1.63	2.13	1.82	1.89	1.96	2.09	1.92	1.88
HoCP18-803	1.95	2.30	2.07 +	2.26	2.24	2.27	2.26 +	2.34 +	2.35 +	2.23 +
L20-065				2.12						2.12

* Heavy soil † Light soil

Table 12. First ratoon stalk number (stalks/A) for eight commercial and one experimental variety at nine outfield locations in 2025.

Variety	Allains*	Landry*	Mary*	Brunswick†	Glenwood†	Harper†	Lanaux†	R. Hebert†	St.John†	Overall Mean
L01-299	28110	27231	32610	37937	38229	45869	40185	46991	29343	36278
HoCP96-540				24584 -		26403 -				25494 -
HoCP04-838				26911		39017				32964
Ho12-615	32339	35526	31194	38925	31572	48367	34887	33878 -	31480	35352
HoCP14-885	27603	42459 +	34720	27379	33571	49437	30744	28781 -	30774	33941
L15-306	26957	35581	33952	31994	27663	40836	28079 -	31437 -	21078	30842 -
HoL15-508	34008	37502	38991	33934	38761	49862	32223	30984 -	33468	36637
HoCP18-803	29557	35437	31755	36649	33577	46143	29354	28931 -	26834	33138
L20-065				28320						28320

* Heavy soil † Light soil

Table 13. Second ratoon sugar per acre (lbs./A) for ten commercial varieties at nine outfield locations in 2025.

Variety	Allains*	Landry*	Mary*	Brunswick†	Glenwood†	Harper†	Lanaux†	R. Hebert†	St.John†	Overall Mean
L01-299	6978	10363	7450	11331	8167	12618	7073	9803	8255	9116
HoCP96-540				8735 -		3763 -				6249 -
HoCP04-838				9026 -		9726 -				9376
HoCP09-804	6461	7437 -	8876	8187 -	7411	12118	8459	8566	7597	8351
Ho12-615	6725	9738	6999	10045	8173	9688 -	8093	8907	5963 -	8258
Ho13-739	7296	8994	7422	8070 -	9042	10833	8279	10017	6216	8463
HoCP14-885	8272	8430	7533	11560	8981	14343	11137 +	10213	9084	9950
L15-306	7172	10703	8390	10085	8594	11747	6698	8655	6880	8769
HoL15-508	7588	9867	9054	10533	8866	9457 -	5355	9331	8107	8684
HoCP18-803	6839	8853	7623	13167	11966 +	10596	6457	10805	7703	9335

* Heavy soil † Light soil

Table 14. Second ratoon cane yield (tons/A) for ten commercial varieties at nine outfield locations in 2025.

Variety	Allains*	Landry*	Mary*	Brunswick†	Glenwood†	Harper†	Lanaux†	R. Hebert†	St.John†	Overall Mean
L01-299	24.5	35.8	25.6	39.4	39.9	43.2	29.1	37.2	25.2	33.3
HoCP96-540				33.0		14.8 -				23.9 -
HoCP04-838				32.6		34.4 -				33.5
HoCP09-804	22.8	25.5 -	29.2	28.3 -	33.3	42.4	31.2	31.8	23.2	29.7
Ho12-615	25.0	36.1	23.6	36.2	42.1	36.2	34.8	34.2	18.7	31.9
Ho13-739	24.1	29.5	23.6	28.4 -	39.1	39.4	32.2	35.6	19.8	30.2
HoCP14-885	26.9	27.8 -	30.1	37.0	39.3	45.1	37.6 +	33.8	26.4	33.8
L15-306	24.6	35.3	29.3	34.9	41.1	40.8	26.1	31.1	22.1	31.7
HoL15-508	25.5	32.9	29.2	35.3	33.9	33.0 -	18.2 -	32.5	28.7	29.9
HoCP18-803	22.9	30.9	27.0	44.8	51.7 +	39.2	29.5	38.1	24.6	34.3

* Heavy soil † Light soil

Table 15. Second ratoon sucrose content (lbs./tons) for ten commercial varieties at nine outfield locations in 2025.

Variety	Allains*	Landry*	Mary*	Brunswick†	Glenwood†	Harper†	Lanaux†	R. Hebert†	St.John†	Overall Mean
L01-299	285	289	297	287	206	292	244	264	327	277
HoCP96-540				264		249 -				257
HoCP04-838				278		283				281
HoCP09-804	285	293	304	282	221	285	270	270	327	282
Ho12-615	270	269	296	278	194	268	231	261	313	264
Ho13-739	303	305	315	283	232	275	257	282	314	285
HoCP14-885	307	303	254 -	313	228	318	296 +	302 +	344	296 +
L15-306	291	303	283	289	209	286	257	277	312	279
HoL15-508	298	300	312	298	261 +	289	292 +	288	282 -	291
HoCP18-803	299	287	282	294	230	270	218	285	313	275

* Heavy soil † Light soil

Table 16. Second ratoon stalk weight(lbs) for ten commercial varieties at nine outfield locations in 2025.

Variety	Allains*	Landry*	Mary*	Brunswick†	Glenwood†	Harper†	Lanaux†	R. Hebert†	St.John†	Overall Mean
L01-299	1.70	1.86	1.79	1.96	1.47	1.94	1.54	1.98	1.34	1.73
HoCP96-540				2.58 +		2.32				2.45 +
HoCP04-838				1.75		1.59				1.67
HoCP09-804	1.43	1.68	1.33 -	2.05	1.67	1.44 -	1.78	1.60	1.33	1.57
Ho12-615	1.66	1.80	1.36	1.80	1.55	1.53	1.59	1.73	1.39	1.60
Ho13-739	1.97	1.91	1.84	1.95	1.83	2.31	2.14 +	2.48 +	1.62	2.01 +
HoCP14-885	1.84	1.96	1.82	2.04	2.29 +	2.12	2.00 +	2.18	1.65	1.99 +
L15-306	1.78	1.99	1.83	2.17	1.69	2.24	1.53	2.05	1.79 +	1.90
HoL15-508	1.76	1.91	1.65	1.97	1.84	2.07	1.96	1.85	1.48	1.83
HoCP18-803	2.00	2.28	1.91	2.33	2.28 +	2.25	2.05 +	2.31	1.64	2.12 +

* Heavy soil † Light soil

Table 17. Second ratoon stalk number (stalks/A) for ten commercial varieties at nine outfield locations in 2025.

Variety	Allains*	Landry*	Mary*	Brunswick†	Glenwood †	Harper†	Lanaux†	R. Hebert†	St.John†	Overall Mean
L01-299	28827	39749	28452	40848	56797	45903	41341	37581	37581	39667
HoCP96-540				25817 -		13753 -				19785 -
HoCP04-838				37670		43952				40811
HoCP09-804	31983	30586	44142 +	29108	42213 -	58747 +	36216	39647	35067	39005
Ho12-615	30616	40821	35216	41017	57868	47410	44737	39601	26978	40482
Ho13-739	24617	31085	25941	29238 -	44851 -	34697	30195	29128	24613 -	30485 -
HoCP14-885	29979	28370	33676	36708	34308 -	42784	38041	31394	32333	34177 -
L15-306	27833	35436	32299	32831	51648	36992	33926	30374	24769 -	34012 -
HoL15-508	28832	34967	35341	35804	37939 -	32293 -	18543 -	36275	38713	33190 -
HoCP18-803	23089	27390 -	28885	38871	45772	35534	28508 -	33065	30684	32422 -

* Heavy soil † Light soil

Table 18. Third Ratoon sugar per acre (lbs./A) for eleven commercial varieties at six outfield locations in 2025

Variety	Mary*	Brunswick†	Glenwood†	Harper†	Lanaux†	R. Hebert†	Overall Mean
L01-299	6656	10879	6844	10704	7774	7959	8469
HoCP04-838		7925 -		4428 -			6176 -
HoCP09-804	7217	8039 -	6380	9473	7964	9490	8094
L12-201	7260	9547	6578	3718 -	7926	9451	7413
Ho12-615	3883 -	8174 -	6418	1016 -	6508	8227	5704 -
Ho13-739	6686	8089 -	7060	3702 -	6187	10263 +	6934 -
L14-267	8492	9136	5066	6211 -	8144	9685	7789
HoCP14-885	6929	7239 -	9490 +	8118 -	7316	8305	7939
L15-306	8165	8837	7496	5254 -	6212	8091	7342
HoL15-508	8052	12121	8341	9707	4475 -	7560	8376
HoCP18-803	9525 +	8721	5635	3697 -	6677	9283	7256

* Heavy soil † Light soil

Table 19. Third Ratoon cane yield (tons/A) for eleven commercial varieties at six outfield locations in 2025

Variety	Mary*	Brunswick†	Glenwood†	Harper†	Lanaux†	R. Hebert†	Overall Mean
L01-299	29.0	37.3	36.5	38.4	31.1	32.0	34.1
HoCP04-838		28.2 -		17.7 -			22.9 -
HoCP09-804	29.8	28.2 -	26.9 -	35.5	30.5	34.9	30.9
L12-201	30.5	32.7	30.2	14.3 -	30.6	32.8	28.5 -
Ho12-615	18.3 -	29.7 -	31.7	4.5 -	27.0	33.6	24.1 -
Ho13-739	24.3	28.2 -	28.2 -	15.6 -	23.4 -	35.4	25.8 -
L14-267	33.5	29.7 -	22.7 -	24.0 -	29.2	35.3	29.1 -
HoCP14-885	27.3	25.2 -	39.3	28.9 -	27.7	30.2	29.8
L15-306	32.3	31.8	32.8	19.4 -	25.7	31.6	28.9 -
HoL15-508	30.2	39.3	34.6	33.4	16.0 -	31.8	30.9
HoCP18-803	36.8 +	33.9	26.9 -	13.9 -	27.2	35.6	29.0 -

* Heavy soil † Light soil

Table 20. Third Ratoon sucrose content (lbs./tons) for eleven commercial varieties at six outfield locations in 2025

Variety	Mary*	Brunswick†	Glenwood†	Harper†	Lanaux†	R. Hebert†	Overall Mean
L01-299	230	291	185	276	250	250	247
HoCP04-838		281		251			266
HoCP09-804	239	284	236 +	267	261	272	260
L12-201	238	292	218 +	259	259	288 +	259
Ho12-615	229	275	204	228 -	239	244	236
Ho13-739	277 +	273	251 +	234 -	264	290 +	264
L14-267	254	308	218 +	257	279 +	274	265 +
HoCP14-885	254	300	243 +	281	264	273	267 +
L15-306	252	278	227 +	266	242	255	253
HoL15-508	265 +	310	242 +	292	277	238	271 +
HoCP18-803	258 +	253 -	206	263	244	261	248

* Heavy soil † Light soil

Table 21. Third Ratoon stalk weight (lbs) for eleven commercial varieties at six outfield locations in 2025

Variety	Mary*	Brunswick†	Glenwood†	Harper†	Lanaux†	R. Hebert†	Overall Mean
L01-299	1.30	1.63	1.88	1.35	1.52	1.42	1.52
HoCP04-838		1.52		1.31			1.41
HoCP09-804	1.15	1.63	1.13 -	1.33	1.48	1.41	1.36
L12-201	1.82 +	2.29 +	2.20	1.40	2.46 +	2.25 +	2.07 +
Ho12-615	1.33	1.71	1.69	1.07	1.64	1.57	1.50
Ho13-739	1.99 +	2.23 +	1.86	1.39	1.86	1.87 +	1.87 +
L14-267	1.87 +	2.29 +	1.90	1.77	2.02 +	2.11 +	1.99 +
HoCP14-885	2.02 +	2.27 +	1.76	1.73	1.95 +	1.51	1.87 +
L15-306	1.76 +	2.24 +	1.87	1.65	1.72	1.93 +	1.86 +
HoL15-508	1.56	1.86	1.73	1.38	1.95	1.80	1.71
HoCP18-803	1.74 +	2.34 +	1.87	1.69	2.41 +	2.00 +	2.01 +

* Heavy soil † Light soil

Table 22. Third Ratoon stalk number (stalks/A) for eleven commercial varieties at six outfield locations in 2025

Variety	Mary*	Brunswick†	Glenwood†	Harper†	Lanaux†	R. Hebert†	Overall Mean
L01-299	44685	46361	40271	56919	42877	47891	46501
HoCP04-838		36989		27156 -			32073 -
HoCP09-804	52777	34675 -	47767	55461	42420	49434	47089
L12-201	33767	28658 -	27721 -	20066 -	25111 -	29173 -	27416 -
Ho12-615	26841 -	36187	37617	8493 -	33182	43196	30919 -
Ho13-739	24368 -	25319 -	30402	22818 -	26219 -	37912	27840 -
L14-267	35716	25950 -	23879 -	28824 -	29995 -	34605 -	29828 -
HoCP14-885	27654 -	22321 -	46357	34292 -	28456 -	40433	33252 -
L15-306	37140	28469 -	36897	23476 -	30219 -	33423 -	31604 -
HoL15-508	40157	45545	40632	54473	16810 -	35495 -	38852 -
HoCP18-803	42859	30304 -	28484 -	14680 -	22571 -	35713 -	29102 -

* Heavy soil † Light soil

Table 23. Plant cane means from nine outfield locations in 2025: Allains*Mary*, Vincent*, Brunswick† , Glenwood† , Harper† , Lanaux† , R.Hebert, St.John†

Variety	Sugar per Acre	Sugar per Ton	Cane Yield	Stalk Weight	Stalk Number
	(pounds/A)	(pounds/ton)	(tons/A)	(pounds)	(stalks/A)
L01-299	8205	272	30.1	2.10	28920
HoCP96-540	8523	272	31.2	2.42 +	30642
HoCP04-838	10191 +	273	37.4 +	2.01	35296
Ho12-615	9540 +	268	35.4 +	1.98	35890 +
HoCP14-802	12248 +	281	43.4 +	1.86	45065 +
HoCP14-885	12010 +	309 +	38.9 +	2.32 +	36233 +
L15-306	10047 +	286	35.2 +	2.19	33477
HoL15-508	10284 +	298 +	34.6 +	2.13	33714
HoCP18-803	12119 +	289 +	42.0 +	2.38 +	35860 +
HoCP21-647	9856 +	294 +	33.7	2.21	31509

* Heavy soil † Light soil

Table 24. First Ratoon means from nine outfield locations in 2025: Allains*, Landry*, Mary*, Brunswick† , Glenwood† , Harper† , Lanaux† , R.Hebert, St.John† .

Variety	Sugar per Acre (pounds/A)	Sugar per Ton (pounds/ton)	Cane Yield (tons/A)	Stalk Weight (pounds)	Stalk Number (stalks/A)
L01-299	9387	287	33.4	1.87	36278
HoCP96-540	8060	258 -	31.2	2.44 +	25494 -
HoCP04-838	10329	282	36.7	2.19 +	32964
Ho12-615	8994	282	31.7	1.81	35352
HoCP14-885	11428 +	310 +	36.8	2.19 +	33941
L15-306	9480	292	32.5	2.14 +	30842 -
HoL15-508	10261	302 +	34.0	1.88	36637
HoCP18-803	10576 +	291	36.4	2.23 +	33138
L20-065	10350	348 +	29.8	2.12	28320

* Heavy soil † Light soil

Table 25. Second Ratoon means from nine outfield locations in 2025: Allains*, Landry*, Mary*, Brunswick† , Glenwood† , Harper† , Lanaux† , R.Hebert, St.John† .

Variety	Sugar per Acre	Sugar per Ton	Cane Yield	Stalk Weight	Stalk Number
	(pounds/A)	(pounds/ton)	(tons/A)	(pounds)	(stalks/A)
L01-299	9116	277	33.3	1.73	39667
HoCP96-540	6249 -	257	23.9 -	2.45 +	19785 -
HoCP04-838	9376	281	33.5	1.67	40811
HoCP09-804	8351	282	29.7	1.57	39005
Ho12-615	8258	264	31.9	1.60	40482
Ho13-739	8463	285	30.2	2.01 +	30485 -
HoCP14-885	9950	296 +	33.8	1.99 +	34177 -
L15-306	8769	279	31.7	1.90	34012 -
HoL15-508	8684	291	29.9	1.83	33190 -
HoCP18-803	9335	275	34.3	2.12 +	32422 -

* Heavy soil † Light soil

Table 26. Third Ratoon means from six outfield locations in 2025: Mary*, Brunswick† , Glenwood† , Harper†, Lanaux† , and R. Hebert† .

Variety	Sugar per Acre	Sugar per Ton	Cane Yield	Stalk Weight	Stalk Number
	(pounds/A)	(pounds/ton)	(tons/A)	(pounds)	(stalks/A)
L01-299	8469	247	34.1	1.52	46501
HoCP04-838	6176 -	266	22.9 -	1.41	32073 -
HoCP09-804	8094	260	30.9	1.36	47089
L12-201	7413	259	28.5 -	2.07 +	27416 -
Ho12-615	5704 -	236	24.1 -	1.50	30919 -
Ho13-739	6934 -	264	25.8 -	1.87 +	27840 -
L14-267	7789	265 +	29.1 -	1.99 +	29828 -
HoCP14-885	7939	267 +	29.8	1.87 +	33252 -
L15-306	7342	253	28.9 -	1.86 +	31604 -
HoL15-508	8376	271 +	30.9	1.71	38852 -
HoCP18-803	7256	248	29.0 -	2.01 +	29102 -

* Heavy soil † Light soil

Table 27. Fixed effect estimates and ratoon index* of seven commercial varieties for Cane Yield.

Variety	Plant Cane	First Ratoon	Second Ratoon	Third Ratoon	Ratoon Index
L01-299	30.1	33.4	33.3	34.1	1.12
HoCP04-838	37.4	36.7	33.5	22.9	0.83
Ho12-615	35.4	31.7	31.9	24.1	0.83
HoCP14-885	38.9	36.8	33.8	29.8	0.86
L15-306	35.2	32.5	31.7	28.9	0.88
HoL15-508	34.6	34.0	29.9	30.9	0.91
HoCP18-803	42.0	36.4	34.3	29.0	0.79

*(Dlamini et al., 2024)

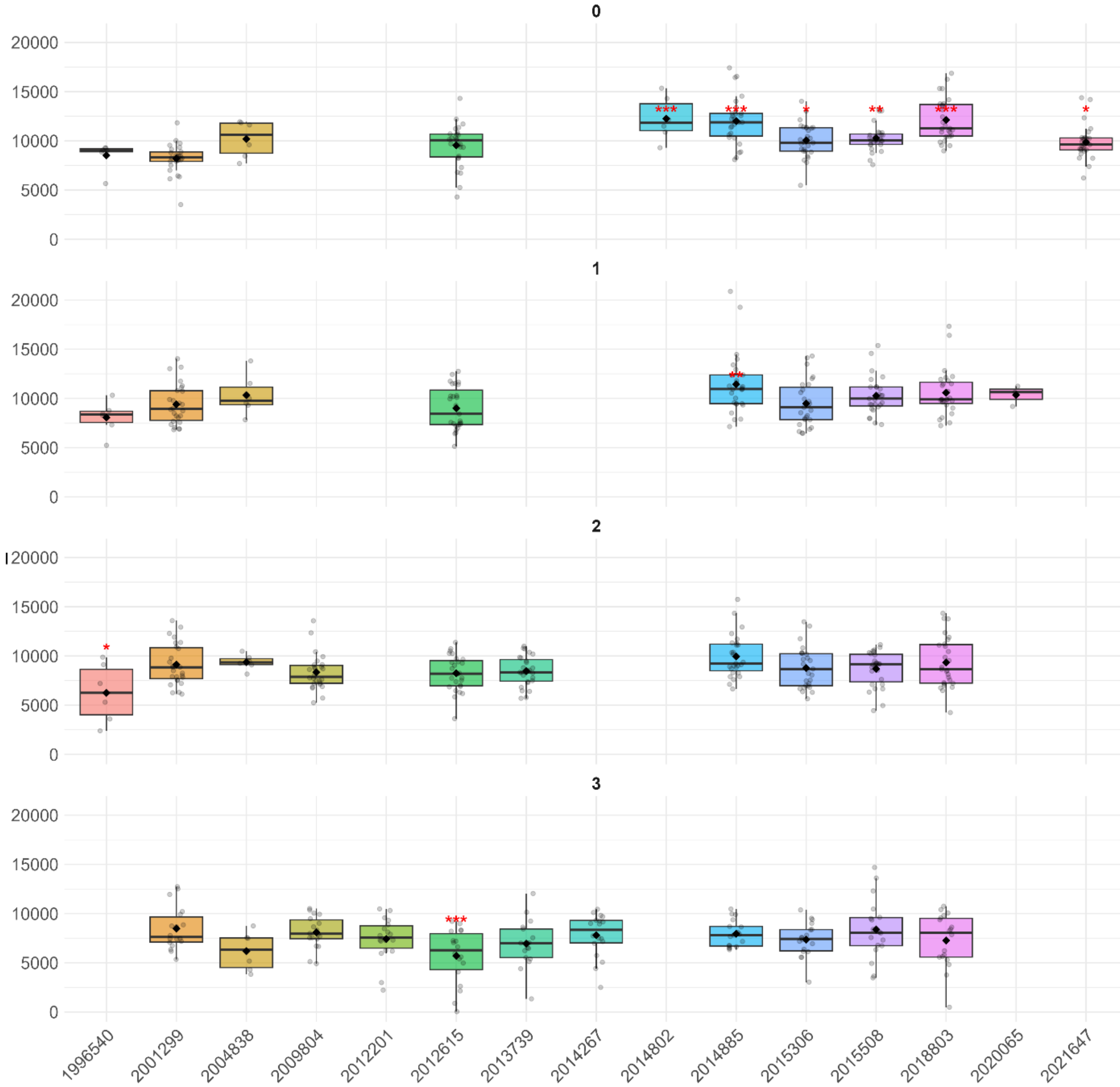

Figure 1. Box plots displaying sugar yield of experimental varieties in the plant, first, second and third ratoon cane crops. Individual points represent raw data points from each location and diamonds denote variety means.

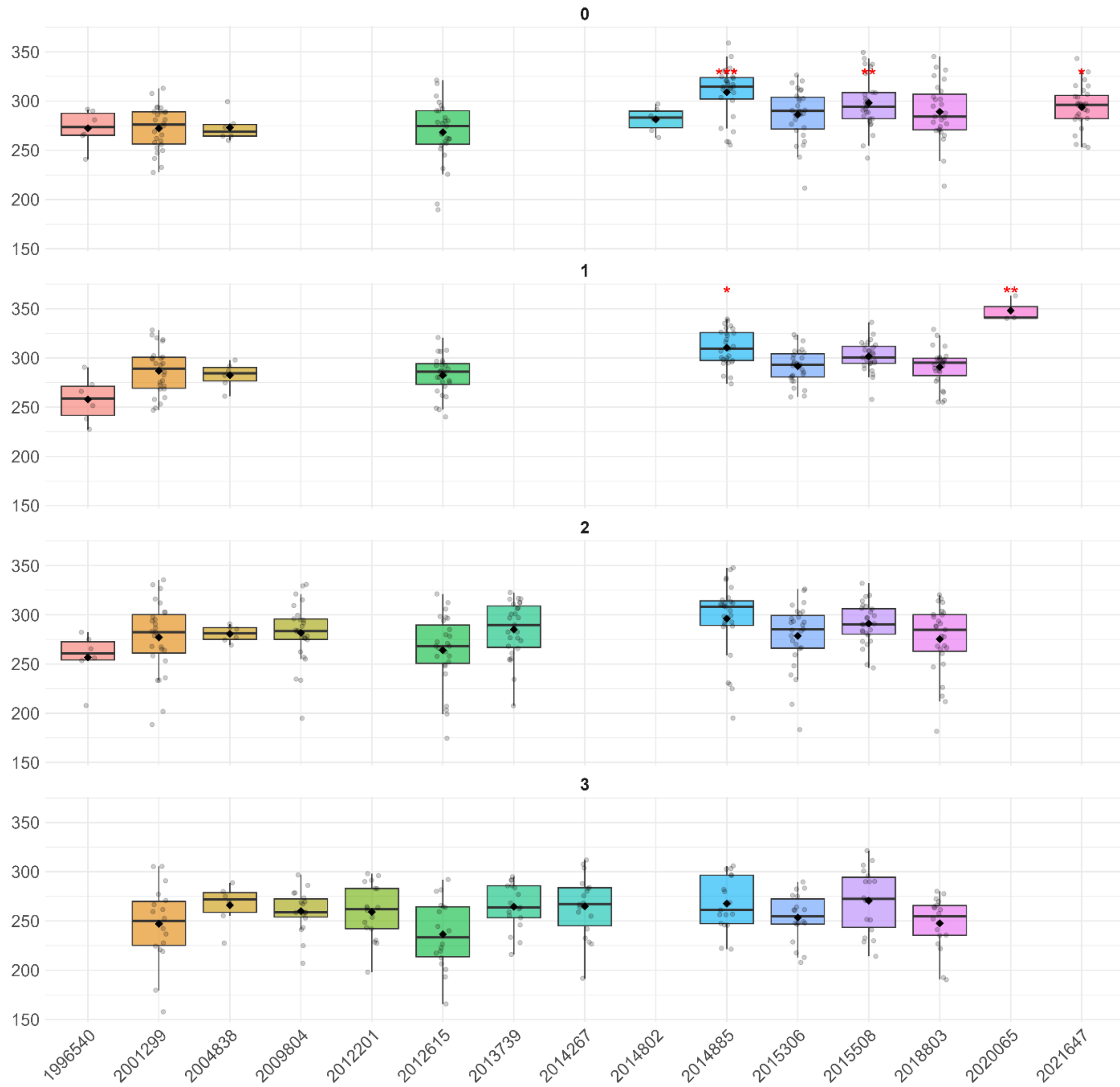

Figure 2. Box plots displaying sucrose content of experimental varieties in the plant, first, second and third ratoon cane crops. Individual points represent raw data points from each location and diamonds denote variety means.

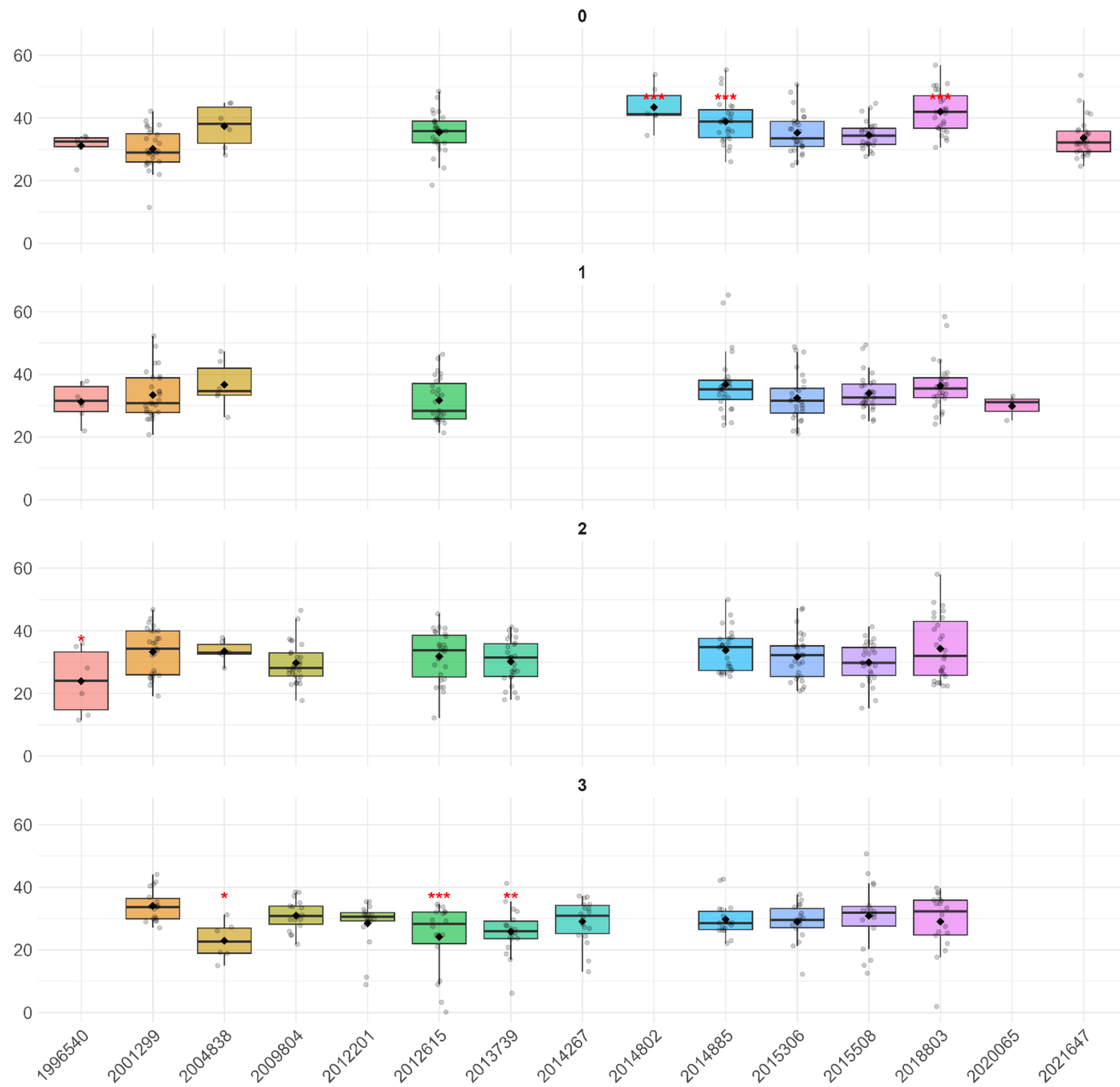

Figure 3. Box plots displaying cane yield of experimental varieties in the plant, first, second and third ratoon cane crops. Individual points represent raw data points from each location and diamonds denote variety means.

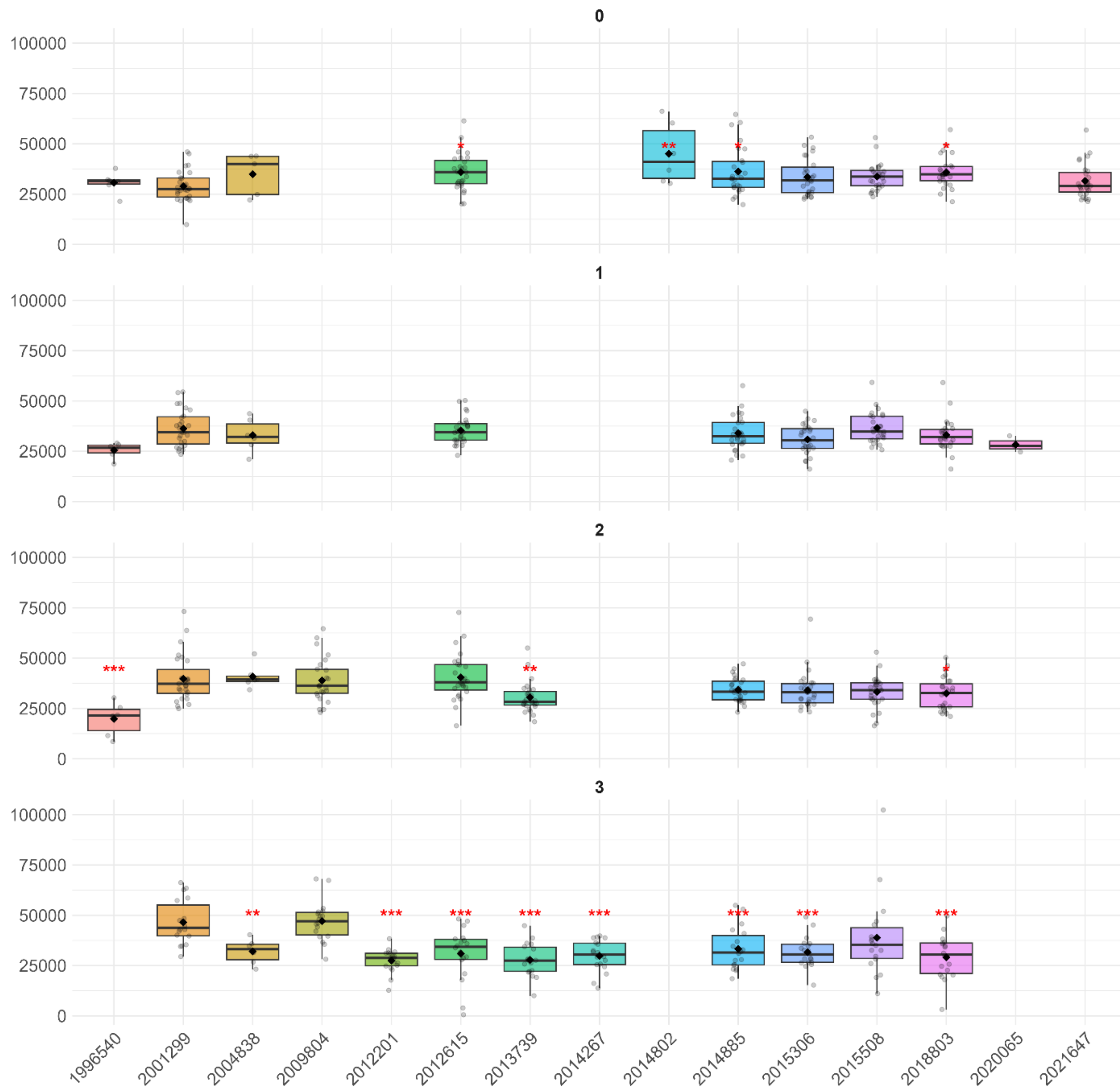

Figure 4. Box plots displaying stalk population of experimental varieties in the plant, first, second and third ratoon cane crops. Individual points represent raw data points from each location and diamonds denote variety means.

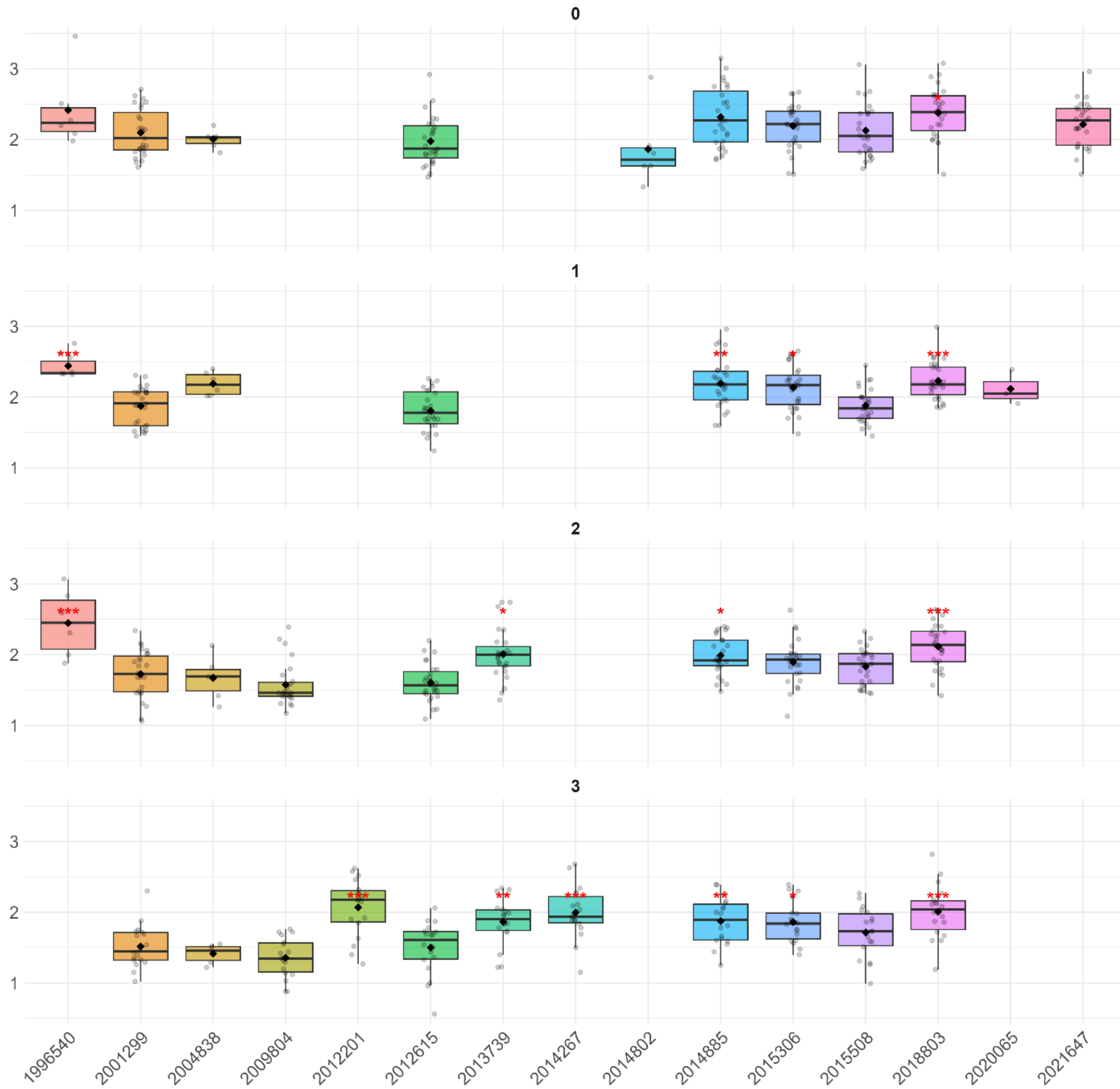

Figure 5. Box plots displaying stalk weight of experimental varieties in the plant, first, second and third ratoon cane crops. Individual points represent raw data points from each location and diamonds denote variety means.

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Dlamini, N. E., Franke, A. C., & Zhou, M. (2024). Indices for measuring ratooning ability of sugarcane varieties. *Crop Science*, *64*(2), 667-677. https://doi.org/10.1002/csc2.21191

SUCROSE LABORATORY AT THE SUGAR RESEARCH STATION

Mavis Daigle[1], Michael Pontif[1], and Collins Kimbeng[1]
Sugar Research Station

The Sugar Research Station Sucrose Laboratory processed 4,019 samples during the 2025 harvest season (Table 1).

A total of 4,019 samples were analyzed using a Spectracane FT-NIR instrument. The samples were shredded using a Dedini shredder then analyzed for Brix, pol, sucrose percent, fiber, moisture, purity, and theoretical recoverable sugar using Near InfaRed (NIR) spectroscopy technoloy.

Standard laboratory (wet chemistry) procedures were used to analyze 583 samples. The samples were shredded using a Dedini shredder and the juice was extracted using a Honiron sugarcane hydraulic press. Octapol® was used for juice clarification. Brix was measured with a refractometer and pol was measured using a saccharimeter (Autopol 880). Sucrose percent and theoretical recoverable sugar (lbs/ton of cane) were calculated based on the Brix and pol values. The sucrose laboratory processed samples from August 2025 to December 2025.

Table 1. Number of sugarcane samples processed at the Sugar Research Station sucrose laboratory during the 2025 harvest season

Unit/Project Area	Leader	Number of Samples
School of Plant, Environmental, and Soil Sciences	Graduate Research	366
	Brenda Tubana	830
Plant Pathology and Crop Physiology	Madison T. Flasco	30
	Andre Gama	108
	Tristan Watson	36
Entomology	Blake Wilson	32
LSU AgCenter Southeast Region	Albert Orgeron	93
LSU AgCenter Central Region	Saulo Castro	559
LSU AgCenter Southwest Region	Brayden Blanchard	241
	Matthew Foster	308
	Collins Kimbeng	98
Louisiana Cooperative Extension Service	Kenneth Gravois	184
Sugar Research Station/Variety Development	Line Trials	474
	Increase	125
	Nursery	372
Contract Services		163
TOTAL		4,019

LAES SUGARCANE TISSUE CULTURE LABORATORY

A. Parco[1], D. P. Fontenot[1], A. Holzapfel[1], C. Kimbeng[2], M. J. Pontif[2], and A. B. Gama[2]
[1]Certis Biologicals and [2]Sugar Research Station

During 2025-2026 production season, a total of 32,127 sugarcane plantlets that were propagated in the Louisiana Agricultural Experiment Station Tissue Culture Laboratory were turned over to Certis Biologicals, Kleentek Division for transplanting in the greenhouse at Houma, LA. The number of plantlets for each sugarcane cultivar is listed in Table 1.

Table 1. Number of tissue culture-derived plantlets of different sugarcane cultivars transplanted in the greenhouse.

Cultivar	Number of Plantlets
Ho 11-573	3,856
HoCP 09-804	2,880
HoCP 14-885	4,997
HoCP 18-803	5,731
HoCP 21-647	100
HoCP 96-540	239
HoL 15-508	4,070
L 01-299	6,522
L 15-306	3,732
Total	32,127

THE 2025 LOUISIANA SUGARCANE VARIETY SURVEY

Kenneth A. Gravois
Sugar Research Station

Each year a sugarcane variety survey is conducted by county agents in sugarcane-growing parishes of Louisiana to determine variety makeup and distribution. Surveys were obtained from 25 parishes. There was sugarcane grown in West Feliciana (Turnbull Island) and East Feliciana parishes The acreage for West Feliciana parish is reported in Pointe Coupee parish. According to USDA-Farm Service Agency (FSA) January 12, 2026 release date, there were 544,590.4 planted acres, 1,041.1 failed acres, and 543,549.3 total acres of sugarcane in Louisiana in 2025.

Agents collected acreage according to variety and crops. A total of 11 sugarcane varieties, HoCP 96-540, L 01-283, L 01-299, HoCP 09-804, L 12-201, Ho 12-615, Ho 13-739, L 14-267, HoCP 14-885, L 15-306, and HoL 15-508 were listed along with "Others" in the survey. The category of "Others" included, but was not limited to, small acreages of HoCP 85-845, HoCP 00-950, Ho 04-838, Ho 05-961, L 11-183, Ho 11-573, and potential new sugarcane varieties on primary and secondary seedcane increase stations or unreleased varieties. The crop was divided into four categories: plant-cane, first-stubble, second-stubble, and third-stubble and older crops.

Total State Acreage. Total sugarcane acreage for each parish, region and the statewide total is shown in Table 1. Statewide, the area planted to sugarcane in 2025 was 543,549.3 acres, representing an increase of 1.32 % compared to acreage in 2024.

Sugarcane Distribution by Variety. Statewide sugarcane acreage in percentage by variety and crops is shown in Table 2. The leading variety for 2025 was L 01-299, which occupied 54% of the Louisiana sugarcane acreage. This percentage was the same as the acreage of L 01-299 in 2024 (Gravois, 2025). HoCP 96-540, L 01-283, HoCP 09-804, Ho 12-615, and Ho 13-739 were next in total acreage, planted on 5%, 2%, 6%, 6%, and 3%, respectively, of the state's acreage. The remaining varieties occupied 2% or less of the state's acreage. Newly released HoCP 14-885 was planted on 16% of the Louisiana sugarcane acreage, which represented the largest increase in acreage of all varieties.

Sugarcane Distribution by Region and Crop. The total sugarcane acreage was highest for the Teche region (197,977 acres), followed by the Northern region (178,954), and the River-Bayou Lafourche region (166,618 acres), and [Table 3]. This is the first time that the northern region was the second largest sugarcane growing region in Louisiana.

In 2025, 28.2% of the state's acreage was grown as third and older stubble crops. This equaled the largest percentage of third and older crops in 2024. In 2025, 25.6%, 22.9%, and 23.3% of the state's sugarcane acreage was in plant-cane, first-stubble, and second-stubble crops, respectively.

For the current survey, the percentage of plant-cane was similar across all growing regions, ranging from 25.3 to 25.9 %. For the third and older stubble crops, the Northern region had the highest percentage at 29.7%, whereas the River-Bayou Lafourche region had the lowest acreage devoted to third and older stubble crops at 25.7%.

Sugarcane Distribution by Variety and Crop for the Three Regions. L 01-299 was the most widely grown variety in all three regions in all crop categories (Tables 4-6). One notable variety trend in sugarcane acreage was the continued planting of L 01-299 and increased older stubble crops devoted to L 01-299. The Northern region had a larger percentage of L 01-299 (62.7%) than the Bayou Teche and River-Bayou Lafourche regions, 45.7% and 54.1%, respectively. The other notable trend was the rapid increase in the acreage planted with HoCP 14-885.

Variety Trends

HoCP 96-540, released for commercial planting in 2003, occupied 5% of the state's 2025 acreage, a decrease of one percentage point from the previous year. The variety continues to perform well for some growers. The main reasons for decreasing acreage of HoCP 96-540 are lower yield potential in older stubble crops and susceptibility to brown rust. HoCP 96-540 is better adapted to sandier soils. HoCP 96-540 possesses superior cold tolerance.

L 01-283, released for commercial planting in 2008, occupied 2 percent of the Louisiana acreage in 2025. L 01-283 has excellent stubbling ability, good sugar yield, erectness, and cold tolerance. Naturally occurring, environmentally induced off-types have been increasing in L 01-283. The variety has performed best in well-drained sandier soils along with good fertility programs, all of which reduce stress. The variety is especially susceptible to late-season infections of brown rust disease, especially after mild winters. L 01-283 is being phased out on most farms.

L 01-299 was released in 2009. The variety has outstanding stubbling ability and is well suited to all soil types. The variety has an erect growth habit and is not the best shading variety. L 01-299 has difficulty establishing after planting in lighter sandier soils (sharp or cold sands). When cut for harvest, the variety stubbles extremely well. Early spring growth of L 01-299 plant-cane and seed-cane is susceptible to several stress factors, such as cool weather, wet soils, damage from herbicides, and poor fertility (especially high pH). Brown stripe is a disease that takes advantage of stress factors in L 01-299. Brown stripe disease can be reduced by burning/removing dead growth in plant-cane and seed-cane along with a good soil fertility program. L 01-299 responds well to ripening with glyphosate.

HoCP 09-804 was released to growers in 2016. This variety has a high population of small diameter stalks with excellent sugar yield potential. HoCP 09-804 is early maturing and performs well in stubble crops. HoCP 09-804 is sensitive to glyphosate applications, which show up as bleached (white) shoots in the spring. These stands recover as the growing season warms up.

L 12-201 was released in 2019. The new variety was derived from the cross HoCP 96-540 x L 97-128. It is characterized as having a moderate population of larger diameter stalks. The yield potential and disease package are good. L 12-201 has average stubbling ability and is being phased out on most farms.

Ho 12-615 was released in 2019. The new variety was derived from the cross HoCP 96-540 x

TucCP 77-42. This variety is characterized as having a high population of small diameter stalks. The yield potential and disease package are good. In sugarcane variety freeze trials, Ho 12-615 was rated as having poor cold tolerance. Stubble stands in the spring are erratic, sometimes due to glyphosate ripeners applied the previous fall. Erratic yield potential due to poor stands have caused growers to decrease acreage of this variety.

Ho 13-739 was released in 2020. The variety has good sugar yield potential and growers particularly like its early and high sugar content. Ho 13-739 is noted for a good disease package and early high sucrose content.

L 14-267 was released in 2021. L 14-267 has a good disease package and sugar yield. One of the parents of L 14-267 is L 01-283, which provided good stubbling ability. L 14-267 had very good sugar yield in third stubble outfield yield trials. This variety does not shade the row well, which has limited its increase in acreage in Louisiana.

HoCP 14-885 was released in 2021. HoCP 14-885 has been widely planted since its release. The new variety has very good sucrose content and excellent yield potential. HoCP 14-885 has low fiber content - hogs will be attracted to this variety. The main negative aspect of HoCP 14-885 is lodging, making for difficult harvesting. In outfield variety trials, the new variety had an excellent sugar yield in all crops including third stubble. The variety has a poor cold tolerance rating. HoCP 14-885 was widely planted in 2025 and should be widely planted again in 2026.

L 15-306 was released in 2022. The parentage of this variety is CP 83-644 x L 01-283. Sugar yield is excellent, which is derived more from cane yield than sucrose content. The disease package is good, and the cold tolerance is rated as moderate. The main issue for L 15-306 is managing susceptibility to the sugarcane borer and the Mexican rice borer. Stubbling ability is excellent.

HoL 15-508 was released in 2022 and has the same parentage as L 15-306. Sugar yield is excellent, which is derived more from sucrose content than cane yield. The disease package is good except for susceptibility to brown stripe and leaf scald. Cold tolerance is rated as susceptible. Stubbling ability is excellent.

Relying on a single variety can lead to changing disease reactions and insect infestations. Growers are cautioned to diversify their sugarcane variety choices. With the release of many new sugarcane varieties in recent years, growers have several good choices to diversify their sugarcane plantings in 2026.

ACKNOWLEDGMENTS
We acknowledge the assistance of the county agents who conducted the sugarcane variety survey in their parishes. We also thank the sugarcane growers and/or their consultants who took the time to respond to the survey. We also acknowledge the assistance of the USDA-FSA offices in the sugarcane parishes for certified acreages.

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Table 1. Total area planted to sugarcane in Louisiana by region and parish, 2025.[1]

Region	Parish	2025 Acreage
Bayou Teche	Acadia	6,106.1
Bayou Teche	Calcasieu	91.3
Bayou Teche	Iberia	56,441.6
Bayou Teche	Jefferson Davis	363.3
Bayou Teche	Lafayette	8,390.5
Bayou Teche	St. Martin	33,076.6
Bayou Teche	St. Mary	45,077.3
Bayou Teche	Vermilion	48,430.3
Northern	Avoyelles	25,628.4
Northern	Concordia	55.0
Northern	East Feliciana	62.9
Northern	Evangeline	1,775.8
Northern	Pointe Coupee	81,694.4
Northern	Rapides	22,637.7
Northern	St. Landry	31,370.2
Northern	West Baton Rouge	15,729.6
River-Bayou Lafourche	Ascension	18,963.0
River-Bayou Lafourche	Assumption	34,123.9
River-Bayou Lafourche	Iberville	41,102.3
River-Bayou Lafourche	Lafourche	28,555.5
River-Bayou Lafourche	St. Charles	1,196.1
River-Bayou Lafourche	St. James	27,118.1
River-Bayou Lafourche	St. John the Baptist	6,627.8
River-Bayou Lafourche	Terrebonne	8,931.7
	Total	543,549.3

[1]Acreage based on USDA-FSA January 12, 2026 data release date.

Table 2. Estimated statewide sugarcane percentage by variety and crop across all regions in 2025.[1]

Variety	Plant-Cane Acreage	First-stubble Acreage	Second-stubble Acreage	Third-stubble and older Acreage	Total %
HoCP96-540	5,252.3	6,629.1	8,526.2	9,033.6	5.4
L01-283	1,701.0	1,988.1	2,599.9	3,768.0	1.9
L01-299	68,401.9	60,426.5	66,008.0	97,525.5	53.8
HoCP09-804	9,983.1	6,210.4	5,498.9	11,262.5	6.1
L 12-201	734.7	375.8	1,340.6	2,620.2	0.9
Ho 12-615	2,881.6	7,146.1	11,271.6	10,976.0	5.9
Ho 13-739	4,780.0	3,539.8	5,180.1	3,493.8	3.1
L 14-267	411.2	428.0	389.4	448.5	0.3
HoCP 14-885	33,935.2	27,556.8	18,041.0	5,153.1	15.6
L 15-306	3,290.0	1,283.7	733.3	119.7	1.00
HoL 15-508	1,304.7	1,788.8	574.9	94.3	0.69
Others	6,711.1	6,879.7	6,727.5	8,523.2	5.3
% Crop	25.6	22.9	23.3	28.2	

[1] Based on information obtained in variety surveys by county agents.

Table 3. Estimated sugarcane distribution by region and crop in Louisiana, 2025.[1]

Crop	Bayou Teche	River-Bayou Lafourche	Northern	State Total
Plant-cane Acres Percent (%)	50,837 25.7	42,173 25.3	46,377 25.9	139,387 25.6
First-stubble Acres Percent (%)	48,954 24.7	42,185 25.3	33,114 18.5	124,253 22.9
Second-stubble Acres Percent (%)	41,333 20.9	39,298 23.6	46,260 25.9	126,892 23.3
Third-stubble and older Acres Percent (%)	56,853 28.7	42,963 25.8	53,202 29.7	153,019 28.2
Total acres Percent (%)	197,977 36.4	166,618 30.7	178,954 32.9	543,549

[1] Based on information obtained in variety surveys by county agents.

Table 4. Estimated area planted to sugarcane in percentage by variety and crop for the Bayou Teche region, 2025.[1]

Variety	Plant-cane crop (%)	First-stubble crop (%)	Second-stubble crop (%)	Third-stubble crop & older (%)	Total (%)
HoCP 96-540	8.6	10.6	16.7	12.9	12.0
L 01-283	2.4	3.0	4.0	2.5	2.9
L 01-299	39.1	43.5	50.9	48.9	45.4
HoCP 09-804	5.4	6.4	7.2	8.4	6.9
L 12-201	0.6	0.6	0.8	2.1	1.1
Ho 12-615	5.4	8.0	5.5	10.2	7.4
Ho 13-739	3.0	3.0	1.3	2.4	2.5
L 14-267	0.3	0.3	0.2	0.6	0.4
HoCP 14-885	26.8	16.8	7.1	4.3	13.7
L 15-306	1.6	0.7	0.0	0.0	0.6
HoL 15-508	1.0	0.6	0.0	0.0	0.4
Others	5.8	6.6	6.4	7.7	6.7

[1] Based on information obtained in variety surveys by county agents.

Table 5. Estimated area planted to sugarcane in percentage by variety and crop for the River-Bayou Lafourche region, 2025.[1]

Variety	Plant-cane crop (%)	First-stubble crop (%)	Second-stubble crop (%)	Third-stubble crop & older (%)	Total (%)
HoCP 96-540	1.7	1.7	2.6	3.8	2.5
L 01-283	0.4	0.9	1.4	3.9	1.7
L 01-299	46.8	49.1	54.7	65.7	54.1
HoCP 09-804	1.3	0.9	0.7	4.0	1.8
L 12-201	0.2	0.2	2.2	1.9	1.1
Ho 12-615	0.3	1.7	8.9	6.9	4.4
Ho 13-739	2.2	2.4	4.6	3.5	3.1
L 14-267	0.4	0.7	0.7	0.2	0.5
HoCP 14-885	32.0	30.5	15.0	2.7	20.1
L 15-306	4.9	1.9	1.2	0.3	2.1
HoL 15-508	1.8	2.5	0.8	0.2	1.3
Others	7.8	7.3	7.1	7.0	7.3

[1] Based on information obtained in variety surveys by county agents.

Table 6. Estimated area planted to sugarcane in percent by variety and crop for the Northern region, 2025[1]

Variety	Plant-cane crop (%)	First-stubble crop (%)	Second-stubble crop (%)	Third-stubble crop & older (%)	Total (%)
HoCP 96-540	0.3	2.1	1.3	0.1	0.8
L 01-283	0.6	0.3	0.8	1.3	0.8
L 01-299	62.1	55.7	50.8	78.0	62.7
HoCP 09-804	14.5	8.1	4.9	8.9	9.2
L 12-201	0.7	0.0	0.4	1.1	0.6
Ho 12-615	0.0	7.5	11.9	4.2	5.7
Ho 13-739	5.0	3.3	6.1	1.2	3.8
L 14-267	0.2	0.0	0.0	0.1	0.1
HoCP 14-885	14.7	19.5	19.9	2.9	13.4
L 15-306	0.9	0.4	0.5	0.0	0.4
HoL 15-508	0.1	1.3	0.6	0.0	0.4
Others	0.9	1.8	2.9	2.2	1.9

[1] Based on information obtained in variety surveys by county agents.

Table 7. Louisiana sugarcane variety trends, area planted to sugarcane by variety and years, across all regions, 2020-2025[1].

Variety	2020 Area (%)	2021 Area (%)	2022 Area (%)	2023 Area (%)	2024 Area (%)	2025 Area (%)	1 Year Change
HoCP96-540	12	10	8	9	6	5	-1
L01-283	10	10	8	4	3	2	-1
L01-299	59	58	56	53	54	54	0
HoCP09-804	9	10	11	9	8	6	-2
L 12-201	<1	1	2	2	2	1	-1
Ho 12-615	<1	3	6	10	8	6	2
Ho 13-739	<1	<1	1	2	3	3	0
L 14-267			<1	<1	<1	<1	0
HoCP 14-885			1	3	11	16	5
L 15-306					0.5	1	1
HoL 15-508					0.5	1	1

[1] Based on annual variety surveys by county agents, 2020-2025.

PERFORMANCE OF FLORIDA SUGARCANE VARIETIES IN LOUISIANA

Kenneth Gravois
Sugar Research Station

Sugarcane varieties developed in Florida are unadapted to Louisiana soils and growing conditions. However, Florida sugarcane varieties have been used by breeders to expand the germplasm base of Louisiana sugarcane varieties, often appearing as grandparents or older generations in the lineage of Louisiana sugarcane varieties. Additionally, the *Bru1* QTL (quantitative trait loci) confers resistance to brown rust disease and is more prevalent in Florida sugarcane varieties. Before using a sugarcane variety for crossing, it is important to evaluate those varieties under Louisiana growing conditions.

Each year a few stalks of Florida sugarcane varieties are obtained from the Kleentek quarantine greenhouse and used to plant a small seed cane increase at the Sugar Research Station, St. Gabriel, LA. Yield trials are planted each subsequent year during August. Each test was planted as a randomized complete block (two replications) design. Plots were paired rows that were 25 feet in length, and a four-foot alley separated plots. The soil type was a Commerce silt loam. A new variety trial was planted on August 25, 2025.

Standard cultural practices were followed during each growing season. No glyphosate ripeners were applied to the trials. The second and third stubble trials were harvested on September 29, 2025; the first stubble trial was harvested on October 9, 2025; the plantcane trial was harvested on November 20, 2025. Plots were combine-harvested and weighed to determine cane yield (tons/acre). A 6-stalk sample was hand-cut out of each plot for a quality analysis using core press method to estimate fiber content (%), and TRS (theoretical recoverable sugar [lbs./ton of cane]). Sugar yield (lbs. sugar/acre) was estimated as the product of cane yield and sucrose content.

Each year the data are summarized and sent to the sugarcane breeders.

Table 1. Plantcane Florida variety yield trial harvested on November 20, 2025, at the Sugar Research Station, St. Gabriel, LA.

Variety	Sugar Yield	Cane Yield	TRS	Fiber
Plantcane	lbs./acre	tons/acre	lbs./ton of cane	%
CP03-1912	9997	40.9	246	11.3
CP06-2425	7553	31.5	244	13.4
CP09-1132	9181	37.8	242	14.7
CP09-1430	14149	48.3	292	11.9
HOCP14-885	14435	46.3	312	11.1
HOL15-508	13814	48.1	287	10.2
L01-299	12840	45.8	281	13.8
L15-306	12921	47.1	274	11.3

Table 2. First stubble Florida variety yield trial harvested on October 9, 2025, at the Sugar Research Station, St. Gabriel, LA.

Variety	Sugar Yield	Cane Yield	TRS	Fiber
First Stubble	lbs./acre	tons/acre	lbs./ton of cane	%
CP01-1372	8507	33.4	255	9.8
CP03-1912	4626	26.5	175	9.2
CP06-2425	7191	33.2	217	11.9
CP09-1132	8071	33.8	237	12.9
CP09-1430	6556	28.7	229	11.2
HOCP14-885	11257	40.5	277	10.1
L01-299	11032	44.7	243	11.0

Table 3. Second Stubble Florida variety yield trial harvested on September 29, 2025, at the Sugar Research Station, St. Gabriel, LA.

Variety	Sugar Yield	Cane Yield	TRS	Fiber
Second Stubble	lbs./acre	tons/acre	lbs./ton of cane	%
CP09-1385	5949	27.4	218	11.6
CP09-4758	6509	30.7	212	10.7
CP10-1208	6858	33.7	204	12.1
CP10-1619	6559	30.3	217	11.2
HO12-615	9804	44.2	222	14.3
HOCP09-804	9229	40.8	226	13.2
HOCP14-885	9282	38.8	239	9.9
L01-299	9475	44.0	215	12.2
TUCCP77-42	9054	47.8	189	13.8

Table 3. Third stubble Florida variety yield trial harvested on September 29, 2025, at the Sugar Research Station, St. Gabriel, LA.

Variety	Sugar Yield	Cane Yield	TRS	Fiber
Third Stubble	lbs./acre	tons/acre	lbs./ton of cane	%
CP09-1385	3613	19.0	186	10.7
CP09-4758	5041	28.3	178	10.3
CP10-1208	3190	18.6	171	11.5
CP10-1619	5598	28.6	195	11.7
HO12-615	5048	28.0	183	12.7
HOCP09-804	6124	30.2	201	12.9
HOCP14-885	9242	39.9	231	9.8
L01-299	8900	42.1	211	12.4
TUCCP77-42	7301	40.9	179	13.4

SSESSING UAV AND YIELD MONITOR HIGH-THROUGHPUT PHENOTYPING CAPABILITIES FOR THE LSU AGCENTER SUGARCANE BREEDING PROGRAM

Dulis Duron and Brayden Blanchard
Sugar Research Station

Background

Plant breeding programs aim to develop cultivars that surpass current commercial standards, requiring plant breeders to phenotype large populations of genotypes with adequate accuracy and efficiency across multiple environments and developmental stages. In the LSU AgCenter Sugarcane Breeding Program, it takes approximately 13 years from initial cross to eventual release of a new variety to the growers. Currently, in the first six stages after crossing (seedling, first line, second line, increase, on-station nursery and off-station nursery) selection for cane yield (CY) remains driven primarily by subjective visual ratings, stalk number (SN), and estimated yield, calculated as SN multiplied by average stalk weight obtained from a 10-stalk bundle (SAMPCY). These assessments are not only time-consuming and labor-intensive but are also based on traits that estimate CY with low accuracy. In addition, CY itself exhibits low heritability and is particularly challenging to assess in early stages of hundreds or thousands of genotypes due to small plot sizes, competition effects among neighboring genotypes, spatial field variability, the use of subjective visual evaluations of plant vigor and stalk number, and the difficulty of getting into the field to measure these traits at the right time. All this, combined with the logistical constraints associated with harvesting or sampling thousands of small plots, further reduce the precision of early-stage yield estimation. As a result, early-stage CY data are inherently noisy, making reliable selection difficult. In the last two stages of the program, CY is recorded using a weigh wagon, which must stop at each plot to stabilize the measurement before weighing, and this requirement makes harvest evaluation time consuming, especially because advanced trials contain replicated designs distributed across extensive field areas, in many locations. Conducting these measurements requires multiple people.

High-throughput phenotyping offers promising alternatives to traditional yield estimation methods across multiple stages of the breeding pipeline. UAV-based phenotyping combines multispectral imagery with machine learning models and can be implemented in every stage, but its adoption depends on predictive ability and logistical feasibility by stage. The primary goal of UAV-based phenotyping in the program is to replace or complement conventional yield estimators such as visual ratings, stalk number, and/or SAMPCY, thereby reducing labor demands while improving selection accuracy. An additional benefit of UAVs is that every plot in every crop can be measured, whereas conventional methods measure sporadically only on plots of genotypes that have not been eliminated from the evaluation. This allows for spatial assessment/correction as well as thorough ratoonability evaluation. Yield monitor technology, which provides continuous yield measurements during harvest, becomes feasible when CY estimation is unreliable and weighing plots is logistically difficult. Yield monitors offer a practical alternative to both SAMPCY and weigh wagon measurements, improving throughput and precision while significantly reducing the labor and time required for harvest evaluation.

Materials & Methods

In 2025, two high-throughput phenotyping strategies were evaluated across multiple stages of the LSU AgCenter sugarcane breeding program. The UAV-based phenotyping strategy was tested in the first line (plant cane; unreplicated-augmented block design; 10ft plots), on-station nursery (plant cane, first ratoon, and second ratoon; randomized complete block design; 2 reps; 16ft plots), and genomic selection nursery (plant cane; randomized complete block design; 4 reps; 24ft plots). The genomic selection nursery was used as a proxy for the infield stage because both share comparable plot sizes, allowing it to serve as a realistic simulation of infield selection conditions. The second strategy focused on assessing the accuracy of a yield monitor system for measuring cane yield during harvest in the on-station nursery across three different trials, each trial representing a different crop cycle, and in the genomic selection nursery (plant cane).

Eight UAV flights conducted during the grand growth phase were used to evaluate the relationship between UAV-derived canopy traits and cane yield. For each flight, a group of vegetation indices, structural indices, and spectral bands were extracted and calculated at the plot level (Table 1). Important predictors were then selected to assess their correlation with cane yield and to compare their performance with conventional yield estimators. Stalk number per plot was included as the traditional estimator across all three stages, while SAMPCY was evaluated only in the on-station nursery stage.

Table 1. Vegetation indices and structural indices used for CY prediction.

Vegetation Index	**Computation**
NDVI (Normalized Difference Vegetative Index)	(NIR-R)/(NIR+R)
TDVI (Transformed Difference Vegetation Index)	(1.5×(NIR-R))/√(NIR^2+R+0.5)
REDVI (Red Edge Difference Vegetation Index)	NIR-RE
OSAVI (Optimized Soil Adjusted Vegetation Index)	(NIR-R)/(NIR+R+0.16)
CHM (Canopy Height Model)	Digital Terrain Model – Digital Surface Model
CC (Canopy Cover)	0.35 NIR reflectance threshold
Canopy Volume	CHM × CC

Two selection approaches for cane yield were compared across all stages evaluated in 2025. The conventional approach was based on stalk number per plot, whereas the high-throughput phenotyping (HTP) approach relied on machine-learning models trained on UAV-derived canopy features from the flight date that provided the most stable predictive performance for each stage. Specifically, a Random Forest model from the July 28, 2025, flight was used for the first line, while LASSO models from the June 30, 2025 and June 11, 2025, flights were selected for the on-station nursery and genomic selection nursery, respectively. For the HTP method, genotypes were selected if their predicted yield exceeded the mean of the check variety HoL 15-508 in the first line and check variety L01-299 in on-station and genomic selection nursery trials. The same threshold was applied to stalk number for the conventional approach. Genotypes from each trial were selected and their plot values were used to compare genetic gains. CY ground truth was obtained with a CAMECO weigh wagon for all three stages. Both HTP-based selections' and conventional selections' CY were compared to one another and to the entire trial population.

Cane yield was measured in the genomic selection nursery and on-station nursery stage trials using both the weigh wagon and a yield monitor system (John Deere SmartClean) mounted on a single-row sugarcane harvester (John Deere CH570). To assess the accuracy of the yield monitor to measure cane yield, a simple linear regression against CY was performed, and model performance was evaluated using R^2, RMSE, Pearson's correlation coefficient (r) and Spearman's rank correlation coefficient (ρ). For comparison to the conventional approach, SAMPCY used in the on-station nursery stage and stalk number assessed in the genomic selection nursery stage, was also evaluated by fitting a linear regression against observed CY (weighed plots) using the same performance metrics. This allowed a direct assessment of how the yield monitor compared to the conventional methods, SAMPCY and stalk number, in estimating ground truth CY.

Field-level spatial variability in the first line stage was examined by calculating the normalized difference vegetation index (NDVI) from a UAV flight acquired on June 30, 2025. In addition, heatmaps of the mean of NDVI and canopy cover (CC) per plot were generated for two dates, June 30 and July 28, both in 2025. CC was calculated by applying a 0.35 reflectance threshold to the NIR band; pixels exceeding this value were classified as green vegetation, expressed as the percentage of vegetation relative to total plot area. Together, these indices enabled a detailed assessment of spatial variability, crop growth progression, and plot-to-plot differences in canopy structure across the first line stage.

Results

Across all stages evaluated, high-throughput phenotyping approaches demonstrated potential to improve early-season yield assessment. UAV-derived canopy traits showed higher correlations than the conventional cane yield estimators, including the highest correlation values in the on-station nursery. The highest difference between UAV-based features and conventional estimators was in the first line stage, demonstrating substantial improvement achieved with these UAV features. Overall, higher correlation values were observed in the data from the first five flights (June-August). In the first line and on-station nurseries the features showing the stronger correlation with yield, were TDVI (r=0.60) and REDVI (r=0.73), respectively. Canopy volume correlation to yield in the genomic selection nursery peaked on the fifth flight date (r=0.57).

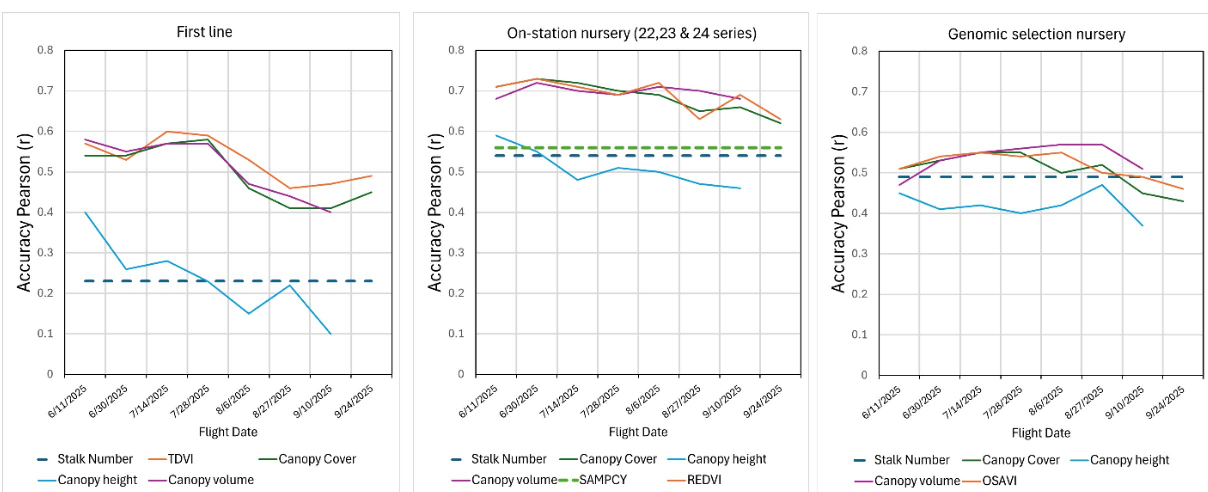

Figure 1. Predictive accuracy (Pearson's r) of UAV-derived canopy traits to predict cane yield across eight UAV flights in three breeding stages (first line, on-station nursery (22, 23, and 24 series genotypes), and genomic selection nursery) in 2025.

In first line, on-station nursery PC, and genomic selection nursery, the mean of plot level CY values of HTP selected genotypes surpassed the CY values of those selected conventionally.

In the on-station nursery 1R trial, there was a very small decrease in mean CY (1.1 tons) because the HTP method selected two additional genotypes that the conventional method did not. In the on-station nursery 2R trial, neither the conventional, nor the HTP method selected any genotypes because neither of them predicted CY that surpassed that of L01-299. This is typical and expected in small selection trials with L01-299, as it is known to be a prolific ratooner that outperforms many experimental clones in late ratoon crops.

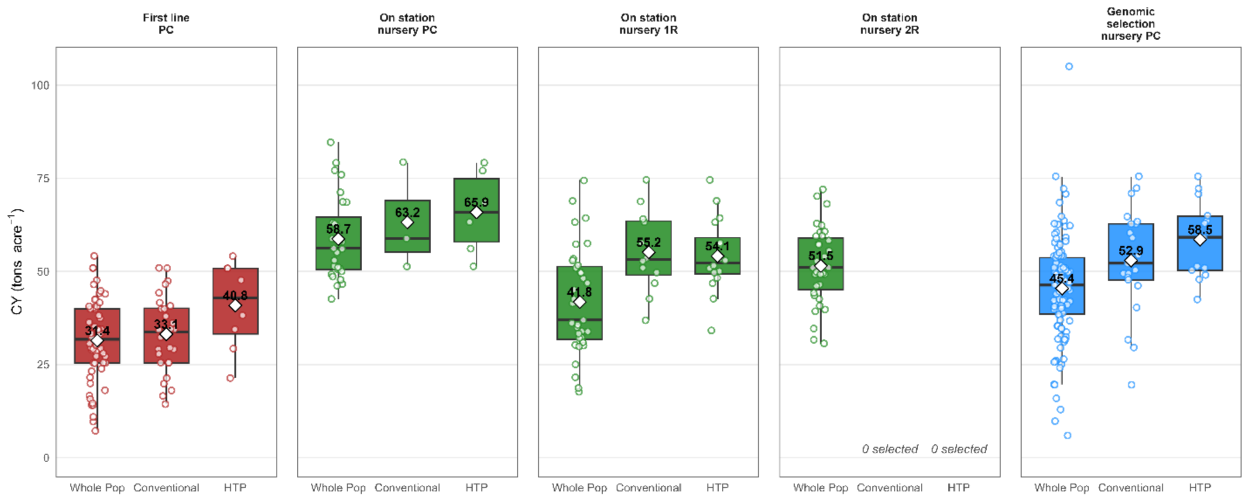

Figure 2. Cane yield (CY, tons acre^{-1}) plot values of the whole population of genotypes and those selected under two approaches, Conventional, and High-Throughput Phenotyping (HTP), across the first line, on-station nursery (PC, 1R, and 2R), and genomic selection nursery.

The linear regression analysis in the on-station nursery revealed that the yield monitor system provided substantially more accurate estimates of cane yield than the traditional SAMPCY method, reducing error (RMSE) and improving agreement (R^2, r and p) with weigh wagon measurements (Figure 3). The SAMPCY shows a R^2 of 0.32, an RMSE of 17.90, a Pearson correlation value of 0.56, and spearman correlation value of 0.57, whereas the yield monitor shows a R^2 of 0.69, a RMSE of 12.46, a Pearson correlation value of 0.83 and Spearman correlation value of 0.83. The conventional method underpredicts high cane yielding varieties, while the yield monitor follows a strong positive trend throughout the whole distribution of cane yield. In the genomic selection nursery, the yield monitor demonstrated similar performance (Figure 4). The regression between yield-monitor CY and observed CY showed an R^2 of 0.55, an RMSE of 13.90 tons acre^{-1}, a Pearson correlation of 0.74, and a Spearman correlation of 0.77, indicating strong consistency with weigh-wagon measurements. By comparison, stalk number exhibited substantially weaker agreement ($R^2 = 0.24$, RMSE = 70.72 tons acre^{-1}, $r = 0.49$, $\rho = 0.43$).

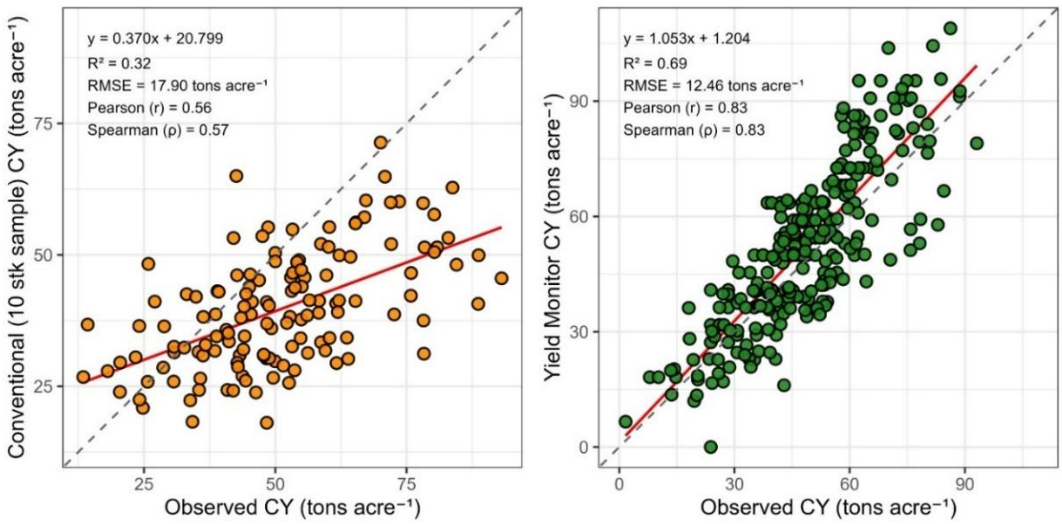

Figure 3. Scatterplots depicting the relationship between SAMPCY and observed CY on the left and yield monitor CY to observed CY on the right in the on-station nursery stage. Linear regression metrics, include R², RMSE, Pearson's r, and Spearman's ρ.

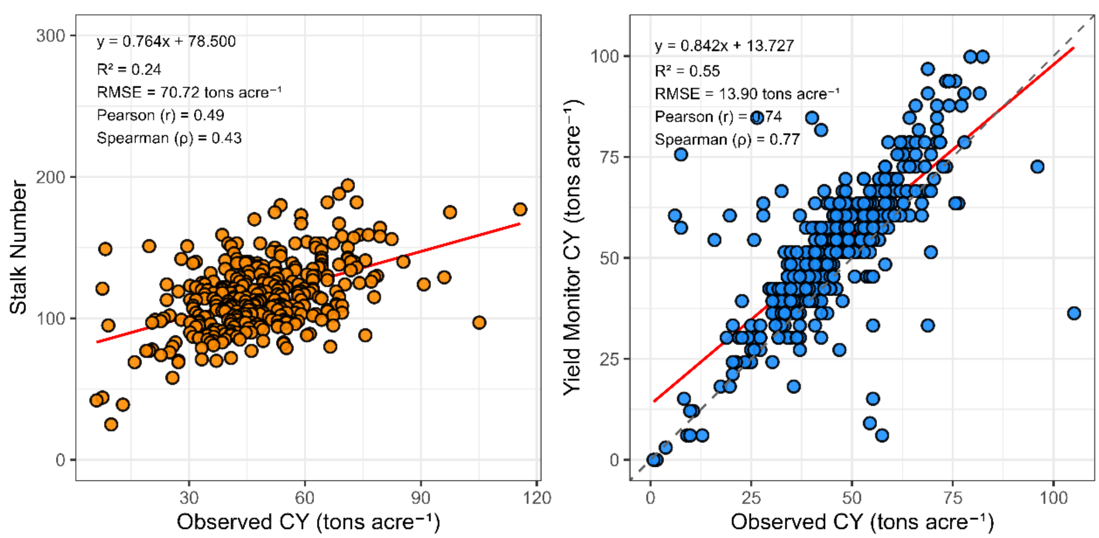

Figure 4. Scatterplots depicting the relationship between stalk number and observed CY on the left and yield monitor CY to observed CY on the right in the genomic selection nursery stage. Linear regression metrics, include R², RMSE, Pearson's r, and Spearman's ρ.

The NDVI image and NDVI and CC heatmaps revealed the existence of in-field variability across the first line trial. This supports the value of UAV imagery for identifying plot-level differences in unreplicated early-stage trials. Figure 5 shows how the genotypes in the left bottom corner are not as vigorous as the rest of the genotypes. Figure 6 shows two dates for canopy cover and NDVI. It can be observed that there are different spatial variability patterns by date and index. Collectively, these results show that both UAV and yield monitor technologies can enhance yield prediction and selection decisions in the breeding program.

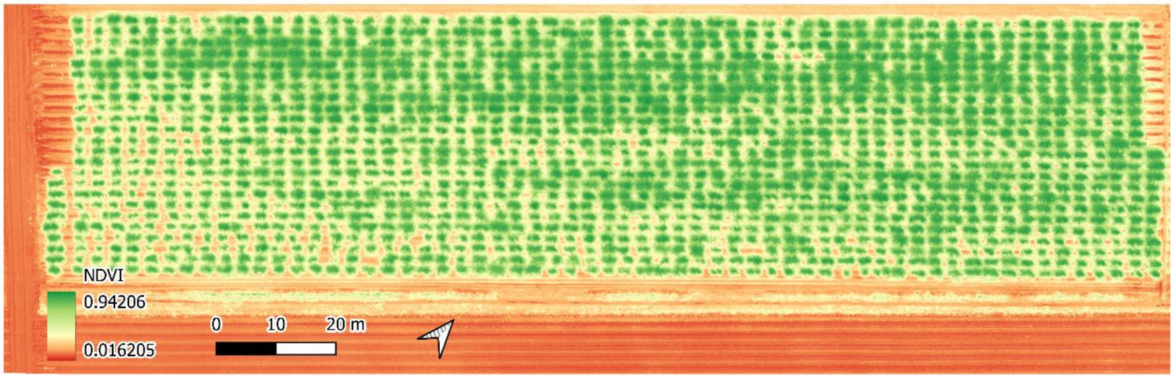

Figure 5. Field-scale spatial variability in the first line stage visualized using NDVI from a UAV multispectral flight collected on June 30, 2025.

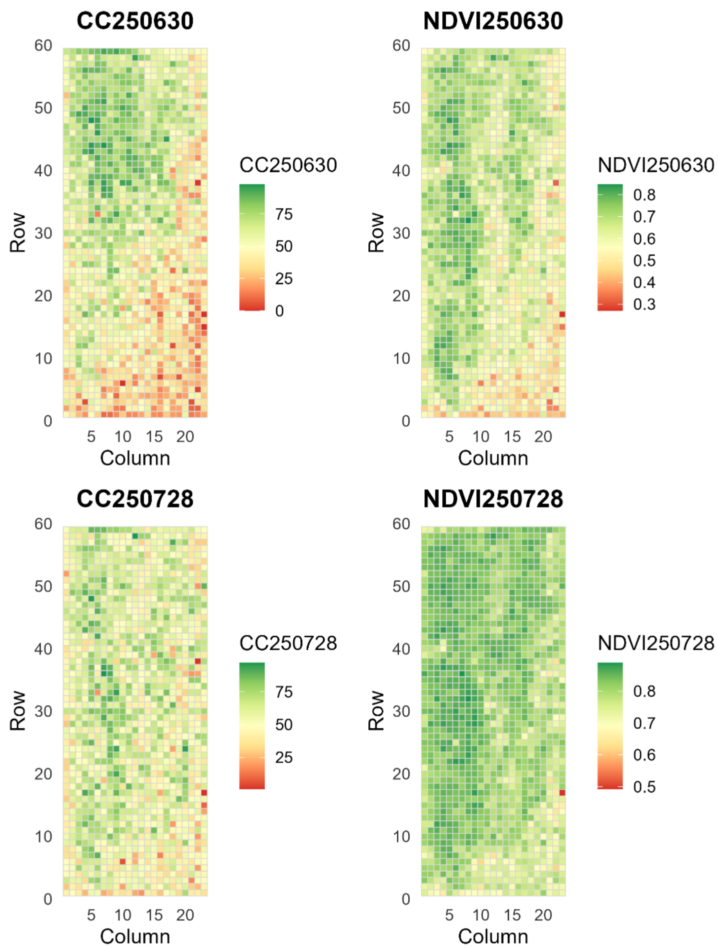

Figure 6. Plot-level heatmaps of canopy cover (CC) and NDVI derived from UAV multispectral imagery collected on June 30, 2025, (top) and July 28, 2025 (bottom).

Future Work

Future efforts will be focused on strengthening UAV-based prediction by evaluating model stability under multiple cross-validation schemes and expanding the training dataset with additional environments and selection settings. As more observations become available, robust models will be built that better account for environmental and management variability using spatial correction techniques.

Acknowledgement

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MACHINE LEARNING ENABLES GENOMIC PREDICTION OF RESISTANCE TO SUGARCANE (*SACCHARUM* SPP. HYBRIDS) DISEASES IN LOUISIANA

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The study utilized historical disease response data of 187 advanced breeding lines within the Louisiana sugarcane variety program between 2005 and 2022 that were collected from the Sugarcane Annual Reports of the Louisiana State University Agricultural Center (https://www.lsuagcenter.com/portals/our_offices/research_stations/sugar/features/annual_reports). The data were presented as a single value, which represented an average of two or more replications or observations. Leaf scald, mosaic, and smut ratings were available for 88, 145, and 110 genotypes, respectively. Mosaic rating under both natural field conditions and inoculated screening were presented as ordinal data on a scale of 1 to 9 with 1 as highly resistant to 9 highly susceptible. The ratings were then binned to create four categories: resistant (rating 1-2), moderately resistant (3-4), moderately susceptible (5-6), and susceptible (7-9). Data normality was evaluated using the Shapiro-Wilk test.

In the absence of the availability of raw replicated data, multi-year data were used for broad-sense and narrow-sense heritability estimation using the model that accounted for female, male effects as well as the year effects (equation 1).

$$y = \mu + \text{female} + \text{male} + \text{female:male} + \text{year} + e \qquad [1]$$

where, y = disease response, μ = population mean, female = the effect of female parent, male = the effect of male parent, female:male = interaction between female and male parent, year = effect of year, e = residual effect.

Genomic prediction

A total of 20,451 SNPs were used for genomic prediction. Three different ML methods, random forest (RF), support vector machine (SVM), and neural network (NN) were used for genomic prediction. The RF method employed the randomForest package in R and the SVM method was implemented with a radial kernel and epsilon regression using the R package e1071. The NN method was applied using the neuralnet package in R.

Cross-validation and prediction accuracy

A 5-fold cross-validation approach was undertaken where genotypes were randomly divided into five subsets with four subsets used as the training population to predict the 5th subset as the test population. The prediction accuracy (PA) was measured as follows.

$$\text{PA} = \frac{\text{Number of correct prediction}}{\text{Total number of predictions}} \qquad [2]$$

Other precision measures were also estimated (equations 3-6). The mean absolute error (MAE) was computed as the average of the absolute difference between observed and predicted values. Mean squared error (MSE) was calculated as the average of the squared difference between the observed and predicted values. Root mean squared error (RMSE) is the root of MSE. Mean absolute percent error (MAPE) was determined as the average absolute percent difference between the observed and predicted values.

$$\mathrm{MAE} = \frac{1}{\mathrm{N}} \sum_{\mathrm{i}=1}^{\mathrm{N}} |\mathrm{y_i} - \hat{\mathrm{y}}| \quad [3]$$
$$MSE = \frac{1}{N} \sum_{i=1}^{N} (y_i - \hat{y})^2 \quad [4]$$
$$RMSE = \sqrt{\frac{1}{N} \sum_{i=1}^{N} (y_i - \hat{y})^2} \quad [5]$$
$$MAPE = \frac{1}{N} \sum_{i=1}^{N} |\frac{(y_i - \hat{y}}{y_i}| \times 100\ \% \quad [6]$$
Where y_i $\hat{y}$, and N are observed value, predicted value, and the number of predictions respectively.

Results

Phenotypic variation and heritability

The sugarcane genotypes demonstrated variability for all the disease traits studied. Overall, smut and mosaic showed a heavily skewed distribution towards lower disease severity reflecting the preferred use of resistant parents, while leaf scald data showed near-normal distribution. The Shapiro-Wilk normality test showed the data for smut and mosaic significantly deviated from normal distribution. For smut, the distribution with ordinal data was right-skewed, with most observations concentrated at the lower end of the scale (score of 1 or 2). The frequency decreased as the score increased, suggesting that the majority of the genotypes had low susceptibility to smut. Likewise, when the data were categorized, the distribution was uneven with the highest frequency in Category 1 with a frequency drop in other categories. Mosaic disease response followed a trend identical to smut with right-skewed distribution for both ordinal and categorical data. Unlike smut and mosaic, leaf scald exhibited a more symmetrical distribution with a peak around scores 3 to 5 rather than being concentrated at the extremes, which indicated that most genotypes were moderately susceptible to leaf scald. The categorical distribution was even for categories 1 and 2 but at lower frequency in categories 3 and 4.

Table 1. Analysis of variance for sugarcane responses to smut, leaf scald, and mosaic disease

Variance component	Variance estimate					
	Smut ordinal	Smut categorical	Leaf scald ordinal	Leaf scald categorical	Mosaic ordinal	Mosaic categorical
Female:Male	0.51	0.01	0.32	0.08	0.00	0.00
Female	0.79	0.02	0.48	0.14	2.52	0.49
Male	0.94	0.37	0.00	0.01	2.36	0.31
Year	0.09	0.01	2.17	0.72	0.51	0.04
Residual	2.83	0.61	1.42	0.40	2.32	0.37
Avg(n)	3.43	3.43	3.35	3.35	1.93	1.93
H^2	0.73	0.69	0.65	0.67	0.80	0.81
h^2	0.56	0.68	0.39	0.43	0.80	0.81

H^2, broad-sense heritability; h^2, narrow-sense heritability

The broad-sense (H^2) and narrow-sense (h^2) heritability values for smut were 0.73 and 0.56 for ordinal data and 0.69 and 0.69 for categorical data (Table 1). For leaf scald ordinal data, H^2 and h^2 were 0.65 and 0.39, respectively whereas for categorical data the values were 0.67 and

0.43, respectively. For mosaic, both H^2 and h^2 were the same at 0.80 and 0.81 for ordinal and categorical data, respectively.

Model performance

For the smut ordinal data, SVM predicted the disease response with the highest PA at 0.36 and the lowest RMSE, MAPE, MAE, and MSE (Table 2). However, when the data was categorized, both RF and SVM performed equally with the highest PA (0.65) and lowest RMSE (1.21), MAPE (21.20), MAE (0.64), and MSE (1.47). NN had the lowest PA for both ordinal (0.24) and categorical data (0.52) with maximum error components.

RF predicted leaf scald with the highest accuracy of 0.25 followed by SVM (0.21) for the ordinal data (Table 2), although SVM recorded the lowest RMSE (1.91), MAPE (52.97), MAE (1.56), and MSE (3.73). For the categorical data, RF was the best model with the highest PA (0.47) and the lowest RMSE (1.24), MAPE (35.36), MAE (0.81), and MSE (1.53).

For the ordinal mosaic data, RF and SVM achieved the highest PA at 0.61, whereas NN recorded the lowest at 0.48 (Table 2). The lowest RMSE (2.26), MAPE (26.75), MAE (1.19), and MSE (5.22) were also observed for RF and SVM. On the other hand, the PA of all the models increased significantly with the categorical data where all models performed equally for their PA (0.83), RMSE (0.77), MAPE (10.18), and MSE (0.65).

Table 2. Performance metrics for disease response prediction in sugarcane with three machine learning models

	Smut						Leaf scald						Mosaic					
	Ordinal			Categorical			Ordinal			Categorical			Ordinal			Categorical		
	RF	SVM	NN	RF	SVM	NN	RF	SVM	NN	RF	SVM	NN	RF	SVM	NN	RF	SVM	NN
PA	0.33	0.36	0.24	0.65	0.65	0.52	0.25	0.21	0.13	0.47	0.32	0.18	0.61	0.61	0.48	0.83	0.83	0.83
RMSE	3.19	3.18	3.81	1.21	1.21	1.78	2.13	1.91	4.61	1.51	1.53	2.40	2.26	2.26	2.82	0.77	0.77	0.77
MAPE	50.96	44.70	92.23	21.20	21.20	81.10	61.77	52.97	96.10	35.51	49.66	76.73	26.75	26.75	89.44	10.18	10.18	10.18
MAE	2.16	2.11	2.96	0.64	0.64	1.40	1.63	1.56	4.20	0.97	1.10	1.91	1.19	1.19	2.04	0.30	0.30	0.30
MSE	10.25	10.21	14.60	1.47	1.47	3.18	4.65	3.73	21.37	2.30	2.47	5.84	5.22	5.22	8.09	0.65	0.65	0.65

MAE, mean absolute error; MAPE, mean absolute percent error; MSE, mean squared error; NN, neural network; PA, prediction accuracy; RF, random forest; RMSE, root mean squared error; SVM, support vector machine.

Our results displayed varying performances of ML models for predicting responses to different diseases. SVM consistently performed well for both ordinal and categorical data, with the highest PA and lowest error metrics for both smut and leaf scald except leaf scald where RF was the best predictive model. This suggests its usefulness and robustness in predicting skewed disease ratings. RF also demonstrated the highest predictive accuracy for leaf scald and as good as SVM for mosaic and smut, particularly in categorical datasets, emphasizing its effectiveness in handling structured categorical variables. NN exhibited lower predictive accuracy for all the diseases.

The highest prediction was obtained for sorghum mosaic disease resistance with an accuracy of 61% to 83% followed by smut at 36% to 65% and leaf scald at 25% to 47%. For smut and mosaic, the two highly skewed traits, categorical classification models yielded superior predictive performance. Although categorical models generally outperformed ordinal models, our findings suggest that ordinal-based models remain a viable option for diseases with more balanced phenotypic distributions, such as leaf scald. Overall, our findings and previous studies in sugarcane suggest that SVM is the most reliable ML model for disease prediction.