SS-AGR-419
https://doi.org/10.32473/edis-sc104-2018

Sugarcane Cultivar Descriptive Fact Sheet: CPCL 02-6848 and CPCL 05-1201[1]

Hardev Sandhu and Wayne Davidson[2]

CPCL 02-6848 (Sandhu et al. 2014) and CPCL 05-1201 (Edmé et al. 2016). Cultivars were released commercially in 2012 and were quickly adopted by local sugarcane growers because of high yields and moderate to high resistance against major sugarcane diseases in Florida. Based on the total acreage during the 2023–2024 cane planting season, CPCL 05-1201 was ranked among the "Principal varieties" with more than 1% of total acreage (388,642 acres) in Florida, while CPCL 02-6848 was dropped out of the list due to orange rust problem and currently being cultivated only for experimental purpose (VanWeelden et al. 2024). CPCL 05-1201 is ranked first with 33% of total sugarcane acreage in Florida.

CPCL 02-6848 and CPCL 05-1201 were developed through the cooperative agreement between the United States Department of Agriculture (USDA) in Canal Point, the UF/IFAS Everglades Research and Education Center in Belle Glade, and the Florida Sugar Cane League. Crosses for both cultivars were made at the US Sugar Corporation in Clewiston (CL) and later evaluated at different stages through the cooperative breeding and selection program based at Canal Point (CP), as indicated by the prefix 'CPCL' in their names. This fact sheet provides basic information (Table 1) and yield and disease information (Table 2) for CPCL 02-6848 and CPCL 05-1201 to assist growers in management of these cultivars. The yields of both cultivars are compared with those of the reference cultivars (CP 89-2143 for muck and CP 78-1628 for sand) planted in the same field trials.

CPCL 02-6848

CPCL 02-6848 was released for both muck (organic) and sand (mineral) soils in Florida. It is currently grown on 12 acres on muck soil for experimental purpose. It was ranked 13th with >1% of total sugarcane acreage in Florida in 2020–2021, but dropped in acreage due to orange rust susceptibility. CPCL 02-6848 carries the *Bru1* gene that provides resistance to brown rust. It is also resistant to smut and moderately resistant to leaf scald, Sugarcane Mosaic Virus (SCMV), and ratoon stunting disease (RSD). Maintenance of high cane yields in ratoon crops (first and second ratoon) in CPCL 02-6848 is important, especially on sandy soils where ratooning is a major concern due to low soil fertility. CPCL 02-6848 is susceptible to orange rust and requires fungicide applications to avoid yield loss which is the primary reason of decline in its acreage in the last few years. CPCL 02-6848 can be a good cultivar for the regions with low or no orange rust problem.

Figure 1. CPCL 02-6848 at early growth stage in muck soil. Credit: Wayne Davidson, Florida Sugar Cane League

Figure 2. CPCL 02-6848 at early growth stage in sand soil. Credit: Wayne Davidson, Florida Sugar Cane League

Figure 3. CPCL 02-6848 at late growth stage in sand soil.
Credit: Wayne Davidson, Florida Sugar Cane League

Figure 4. CPCL 02-6848 top.
Credit: Wayne Davidson, Florida Sugar Cane League

Figure 5. CPCL 02-6848 mature stalks.
Credit: Wayne Davidson, Florida Sugar Cane League

Figure 6. CPCL 02-6848 bud.
Credit: Wayne Davidson, Florida Sugar Cane League

Figure 7. CPCL 02-6848 internode cross-section (diameter compared to a quarter).
Credit: Wayne Davidson, Florida Sugar Cane League

CPCL 05-1201

CPCL 05-1201 was also released for both muck and sand soil. According to the latest sugarcane variety census, CPCL 05-1201 is cultivated on 97,317 acres on muck soil (35% of total acreage on muck) and 30,905 acres on sand soil (28% of total acreage on sand) (VanWeelden et al. 2024). It is ranked first in total sugarcane acreage in Florida. Key features of this cultivar include high tonnage and moderate to complete resistance to most sugarcane diseases in Florida. CPCL 05-1201 yields were also high under successive planting on muck soil. Sucrose concentration is acceptable. High biomass production compensates for the sucrose concentration. CPCL 05-1201 carries the *Bru1* gene that provides resistance against brown rust. This cultivar is also moderately resistant to orange rust.

Figure 8. CPCL 05-1201 in early growth in muck soil.
Credit: Wayne Davidson, Florida Sugar Cane League

Figure 9. CPCL 05-1201 in late growth in muck soil.
Credit: Wayne Davidson, Florida Sugar Cane League

Figure 10. CPCL 05-1201 top with auricles.
Credit: Wayne Davidson, Florida Sugar Cane League

Figure 11. CPCL 05-1201 bud.
Credit: Wayne Davidson, Florida Sugar Cane League

Figure 12. CPCL 05-1201 internode cross-section (diameter compared to a quarter).
Credit: Wayne Davidson, Florida Sugar Cane League

References

Edmé, S. J., R. W. Davidson, D. Zhao, J. C. Comstock, H. S. Sandhu, B. Glaz, S. Milligan, et al. 2016. "Registration of 'CPCL 05-1201' sugarcane." *J. Plant Reg.* 10: 14–21.

Sandhu, H. S., B. S. Glaz, S. J. Edmé, R. W. Davidson, D. Zhao, J. C. Comstock, R. A. Gilbert, et al. 2014. "Registration of 'CPCL 02-6848' sugarcane." *J. Plant Reg.* 8: 155–161.

VanWeelden, M. T., C. Kammerer, W. Davidson, M. Baltazar, and R. W. Rice. 2024. "Sugarcane variety census: Florida 2023." *Sugar J.* 87: 6–11.

Table 1. Basic information on CPCL 02-6848 and CPCL 05-1201.

Trait	CPCL 02-6848	CPCL 05-1201
Release Date	2012	2012
Soil Type	Muck and sand	Muck and sand
Parents	CL 92-2533 x Poly 01-9	CL 87-2882 x CL 93-2679
Freeze Tolerance	Moderate to poor	Moderate
Flowering	Generally none	Light to moderate beginning in mid-December
Key Features	High tonnage in plant cane through second ratoon; resistance to brown rust and smut; improved drought tolerance	Resistant or moderately resistant to many of the most common sugarcane diseases in Florida; high tonnage; good for both fallow and successive plantings
Limiting Features	Susceptibility to orange rust; moderate breakage in early planted fields	Low sugar on muck soil (best for late season sugar)
Other Issues	Light ring spot symptoms and light rust mite damage in the fall	Light ring spot; light to heavy cold banding

Table 2. Yield parameters and disease reactions of CPCL 02-6848 and CPCL 05-1201.

Trait	CPCL 02-6848 (yields are compared to CP 89-2143 in muck and CP 78-1628 in sand)	CPCL 05-1201 (yields are compared to CP 89-2143 in muck and CP 78-1628 in sand)
Tons of Cane per Acre (TCA)	Muck=72.9 (+22%) Sand=49.3 (+23%)	Muck=72.3 (+21%) Sand=41.5 (+4%)
Commercially Recoverable Sucrose (CRS) (lb/ton of cane)	Muck=230.4 (-3%) Sand=243.3 (+4%)	Muck=232.2 (-2%) Sand=258.7 (+1%)
Tons of Sugar per Acre (TSA)	Muck=8.4 (+17%) Sand=5.9 (+27%)	Muck=8.5 (+18%) Sand=4.9 (+6%)
Economic Index[1]	Muck=$1,288 (+14%) Sand=$911 (+37%)	Muck=$1,309 (+16%) Sand=$712 (+7%)
Fiber	13%	10.3%
Brown Rust	R	R
Bru1[2]	+	+
Orange Rust	S	MR
Leaf Scald	MR	MR
Smut	R	R
SCMV[3]	MR	R
RSD[4]	MR	R
SCYLV[5]	S	S

[1] Economic index is the dollar value of crop on per acre basis. It is calculated based on sugar yield, price of raw sugar, and harvesting and milling costs.

[2] *Bru1* is the gene that provides resistance against brown rust disease.

[3] SCMV stands for Sugarcane Mosaic Virus, which causes sugarcane mosaic disease.

[4] RSD stands for ratoon stunting disease.

[5] SCYLV stands for Sugarcane Yellow Leaf Virus, which causes yellow leaf disease.

Disease ratings: R=Resistant; MR=Moderately resistant; MS=Moderately susceptible; S=Susceptible

[1] This document is SS-AGR-419, one of a series of the Department of Agronomy, UF/IFAS Extension. Original publication date March 2018. Revised July 2021 and January 2025. Visit the EDIS website at https://edis.ifas.ufl.edu for the currently supported version of this publication.

[2] Hardev Sandhu, professor, Department of Agronomy, UF/IFAS Everglades Research and Education Center; Wayne Davidson, senior agronomist, Florida Sugar Cane League, Inc., Clewiston, FL; UF/IFAS Extension, Gainesville, FL 32611.

The Institute of Food and Agricultural Sciences (IFAS) is an Equal Opportunity Institution authorized to provide research, educational information and other services only to individuals and institutions that function with non-discrimination with respect to race, creed, color, religion, age, disability, sex, sexual orientation, marital status, national origin, political opinions or affiliations. For more information on obtaining other UF/IFAS Extension publications, contact your county's UF/IFAS Extension office. U.S. Department of Agriculture, UF/IFAS Extension Service, University of Florida, IFAS, Florida A & M University Cooperative Extension Program, and Boards of County Commissioners Cooperating. Andra Johnson, dean for UF/IFAS Extension.