2017
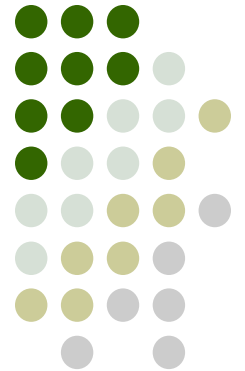# Texas Canola
Variety Trial Results

varietytesting.tamu.edu

Texas A&M
AGRILIFE
RESEARCH | EXTENSION

ĀĮM | SOIL & CROP SCIENCES
TEXAS A&M UNIVERSITY

2017 Texas Canola Variety Trials

http://varietytesting.tamu.edu/oilseed

Texas A&M AgriLife Extension Service

Clark Neely, Calvin Trostle, Jourdan Bell,
Emi Kimura, Josh McGinty, Daniel Hathcoat,
and Shane McLellan

Texas A&M AgriLife Research

Paul DeLaune

Kansas State University

Mike Stamm, Scott Dooley

Table of Contents

Contact Information

Dr. Clark Neely, Small Grains and Oilseed Extension Specialist, College Station, TX
Email: cbneely@tamu.edu | Phone: 979-862-1412

Dr. Jourdan Bell, Regional Extension Agronomist, Amarillo, TX
Email: bell0316@tamu.edu | Phone: 806-677-5663

Dr. Emi Kimura, Regional Extension Agronomist, Vernon, TX
Email: emi.kimura@ag.tamu.edu | Phone: 940-552-9941

Dr. Paul DeLaune, Environmental Soil Scientist, Vernon, TX
Email: pbdelaune@ag.tamu.edu | Phone: 940-552-9941

Dr. Josh McGinty, Regional Extension Agronomist, Corpus Christi, TX
Email: Joshua.mcginty@ag.tamu.edu | Phone: 361-265-9203

Dr. Calvin Trostle, Regional Extension Agronomist, Lubbock, TX
Email: ctrostle@ag.tamu.edu | Phone: 806-746-6101

Additional Canola Resources

National Winter Canola Variety Trials
http://www.agronomy.k-state.edu/services/crop-performance-tests/canola-and-cotton.html

Okanola (Oklahoma State University Canola Extension)
http://canola.okstate.edu/

Great Plains Canola Production Handbook
http://varietytesting.tamu.edu/oilseed/files/Production%20Practices/Great%20Plains%20Canola%20Production%20Handbook.pdf (electronic)
http://www.bookstore.ksre.ksu.edu/Category.aspx?id=2 (order hard copy)

Other Texas A&M AgriLife Canola Agronomic Information
http://varietytesting.tamu.edu/oilseed

Introduction

The word "canola" is derived from its origins in Canada and the Latin word for oil (*oleum*). Canola is a cool-season broadleaf plant in the mustard family. Its cousins include turnips and radishes, but canola has much lower erucic acid and glucosinolate content which makes its oil less bitter than other mustard plants as well as having a higher digestibility for humans and other animals. Canola's oil is utilized in numerous food products as well as cooking because canola oil has less saturated fat than other plant and animal derived cooking oils. In the mid 1990's canola breeders in Canada released the first herbicide tolerant varieties allowing this crop to be a great rotational crop in fields that had consistent weed problems. Most of the canola acres today utilize glyphosate or other types of herbicide tolerance. North of Nebraska, canola is grown as a short season summer crop, but throughout the southern Great Plains (Oklahoma, Texas, etc.) canola can be grown in the winter months as a rotational replacement for small grains. Due to the taproot system of canola, this crop is capable of chasing moisture and nutrients deeper in the soil profile than many small grain crops. In addition, it allows for alternative herbicides to be applied aiding in control of grassy winter weeds.

Canola in Texas is still a very new crop to the state. Its acreage has been concentrated along the Oklahoma border for many years. Transportation costs to the nearest crushing facility in Oklahoma City had been a primary reason why acres were not expanding very far south. With the closing of this plant and the recent updates to the ADM crushing facility near Lubbock (now capable of accepting canola seed for crushing), greater interest has been added further south in the state. As with any new crop, there are always challenges to overcome. The challenges with canola are primarily due to its small seed size (1/8" diameter), so seedbed preparation is crucial as well as sealing cracks and holes in both harvesting and transportation equipment. Seed shattering at harvest time has also been a concern for many producers throughout the southern Great Plains; therefore, harvest timing is critical and in many cases the use of harvest aids or swathing is necessary.

The data presented in the following pages is a collaborative effort among several Texas A&M AgriLife personnel and KSU faculty and staff. We appreciate the cooperation from numerous Texas A&M AgriLife County Extension Agents, producers, and private industry groups that contribute time, property, and seed to conduct these field trials. The purpose of this publication is to provide unbiased yield and phenotypic data for canola producers across the state. Using this information, Texas canola producers can make an educated decision concerning the most appropriate varieties for their geographic region.
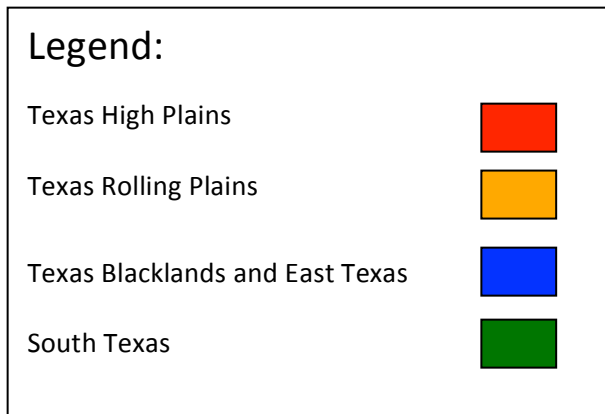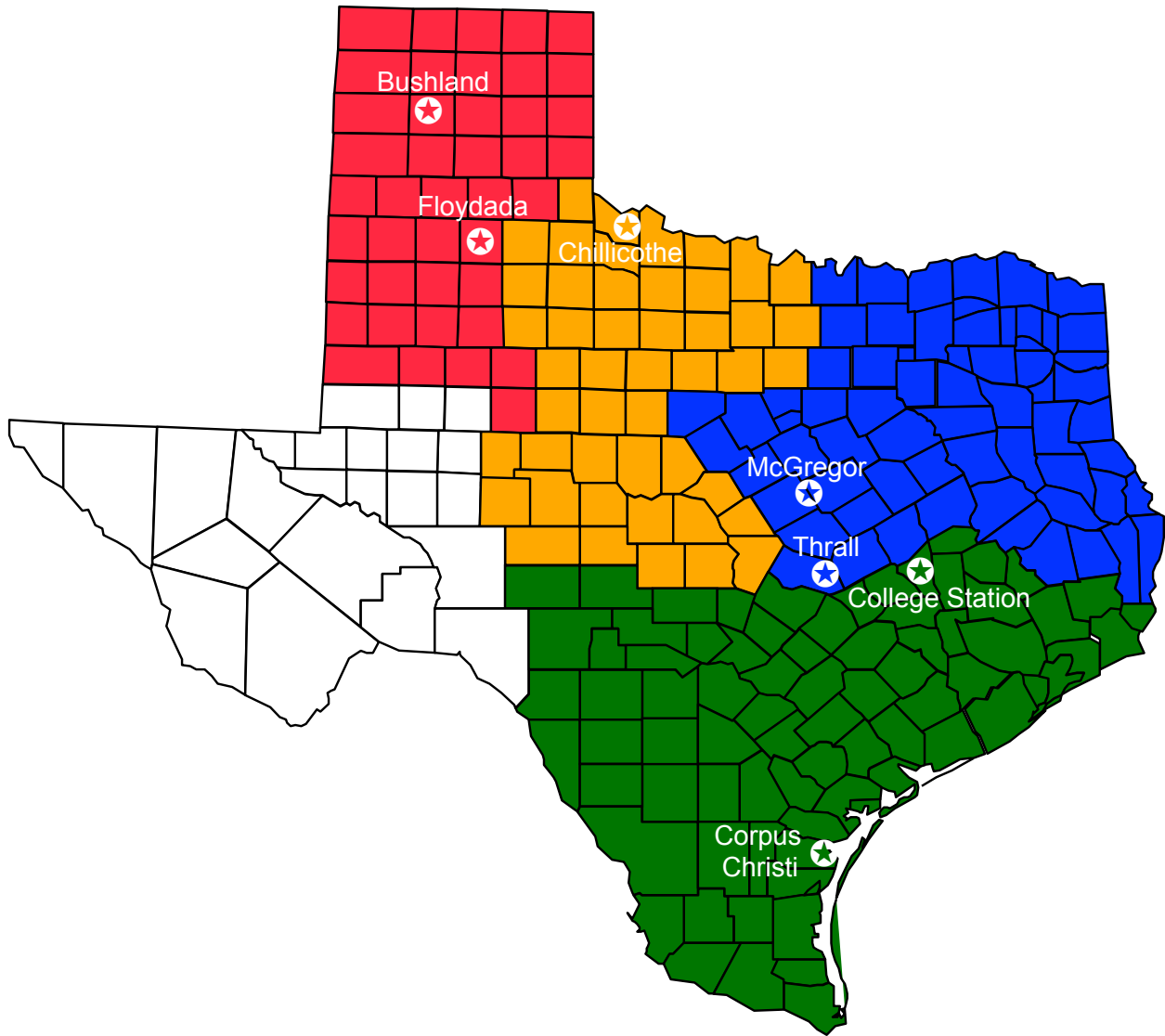
Interpreting the Data

Yield, test weight and several other harvest measurements at each location have been analyzed using appropriate statistical procedures. The statistical analysis provides the mean, CV, and LSD values. It is important to note these statistical values to prevent misinterpretation of any replicated data.

The mean is another term for the average. Therefore, a mean yield is the average of all plots within a trial. Individual variety yields can be compared to the mean yield to determine how these varieties performed within the trial (i.e. were they above or below average?). This average can also be used as an indication of the environment for that location. A low mean yield can indicate poor growing conditions were experienced in that season; likewise, a high yield average can indicate favorable growing conditions.

The CV (Coefficient of Variation) value, expressed as a percentage, indicates the level of unexplained variability present within the trial. A high CV value indicates a lot of variability existed within the trial not related to normal variations that might be expected between the varieties in the test. This variability may be the result of non-uniform stands, non-uniform insect or disease pressure, variability in harvesting, or other issues. CV values in excess of 20% signify that there were problems in the trial, leading the reader to question the validity of the data as a true representation of varietal performance.

The LSD (Least Significant Difference) value is a numeric range to help the reader determine if the varieties performed differently from one another within the trial. If the LSD value is 50 lb/ac in a trial in which Variety A yielded 1500 lb/a and Variety B yielded 1440 lb/ac, then Variety A is said to be significantly better. In that same trial with an LSD value of 50 lb/ac at a 0.05 (5%) significance level, the statistical inference one could say is that Variety A would yield better than Variety B in 19 out of 20 trials conducted in which there was at least a 50 pound difference in yield. In this hypothetical comparison, you might have a 20th trial with a 50 lb/ac difference in which there is not truly a statistical difference between Variety A and B, but random chance caused the 50 pound difference.

2017 Texas Canola Variety Trial Locations

Legend:

Texas High Plains	🟥
Texas Rolling Plains	🟧
Texas Blacklands and East Texas	🟦
South Texas	🟩

2017 Location Summaries and Agronomic Data

Location[1]	Cooperator	Issues	Planted	Harvested	Fertility	Pesticides
Bushland	Texas A&M AgriLife James Bush Research Farm	Dry conditions; relied on drip irrigation; Late season snow storm/high winds	Fall 1: 9/21/16 Fall 2: 10/3/16	6/12/17	None	Pre-plant Roundup (32 oz/a)
Chillicothe	Texas A&M AgriLife Research Farm	Freezing temperatures late in season; Winterkill	9/23/16	ABANDONED	42 #N/A	Pre-emergent Roundup (32 oz/a) Select (6 oz/a)
College Station	Texas A&M AgriLife Extension Farm	Mild winter – Vernalization issues; Heavy cabbage aphid pressure in spring.	10/20/16 (Winter) 11/4/16 (Spring)	ABANDONED (Winter) 4/15/17 (Spring)	70 #N/A	Pre-emergent Treflan (2 pt/a) + Roundup (32 oz/a) Dimethoate 4E (1/2 pt/a) Beleaf 50 SG (2 oz/a)
Corpus Christi	Texas A&M AgriLife Research Farm	Dry conditions early in growing season.	12/21/16	4/28/17	87 #N/A	Pre-plant Roundup (32 oz/a)
Electra (No-Till)	William Lalk	Winterkill	10/1/16	ABANDONED	None	None
McGregor	Texas A&M AgriLife Research Station	Very poor emergence	10/18/16	ABANDONED	None	None
Thrall	Stiles Farm Foundation	Volunteer wheat & ryegrass; Mild winter – Vernalization issues	11/16/16	ABANDONED	70 #N/A	Treflan (1.5 pt/a)

[1]Corpus Christi, McGregor, and Thrall were the only locations where irrigation was not available.
Bushland canola was planted on 30" rows and harvested with a row-crop header. All other locations were planted with a grain drill and harvested with a broadcast header.

Season Summary:

Much of the state was quite dry heading into planting season. Rain came to much of the Blacklands and South Texas in early November, in time to get adequate stands and plant growth going into winter. Some rains were quite heavy in the early fall and required growers to replant canola fields, in some cases more than once. Following two hard, but short cold snaps in December and early January, which caused some winterkill in parts of the state, very mild conditions prevailed the rest of the winter. This led to considerable vernalization issues in Central and South Texas. Additionally, lack of winter moisture in the Rolling Plains accelerated symptoms of stress in the plants. Hail events in mid-May caused lodging and shattering, which reduced the yield potential of canola in the Rolling Plains. A late spring snowstorm in the Panhandle also caused lodging and shattering concerns.

Spring Canola Variety Characteristics

Variety	Developer/ Marketer	Type[†]	Traits[‡]	Released	Maturity[§]
InVigor 5440	Bayer	Hybrid	LL	---	F
InVigor L130	Bayer	Hybrid	LL	---	E
InVigor L140P	Bayer	Hybrid	LL/ST	2014	M
InVigor L241C	Bayer	Hybrid	LL	2016	M
InVigor L252	Bayer	Hybrid	LL	---	M-F
5525 CL	Caldbeck Consulting	Hybrid	CL	2016	E
CC67012	Caldbeck Consulting	---	---	---	---
CC67017	Caldbeck Consulting	---	---	---	---
CC67027	Caldbeck Consulting	---	---	---	---
NCC101S	Caldbeck Consulting	---	---	---	---
V12-1	Cargill	Hybrid	RR	---	M
V12-3	Cargill	Hybrid	RR	---	M
V22-1	Cargill	Hybrid	RR/HO	2016	M
HyCLASS 930	Croplan by Winfield	Hybrid	RR	---	E
HyCLASS 955	Croplan by Winfield	Hybrid	RR	---	M
HyCLASS 970	Croplan by Winfield	Hybrid	RR	---	F
H1612	DL Seeds	---	---	---	---
H1613	DL Seeds	---	---	---	---
H1617	DL Seeds	---	---	---	---
NHC1258C	NuSeed	---	---	---	---

[†]OP: Open Pollinated
[‡]CL: Clearfield; HO: high oleic oil; LL: Liberty Link; RR: Roundup Ready; ST: shatter tolerant
[§]Maturity rated at early (E), Medium (M), and Full (F).

Winter Canola Variety Characteristics

Variety	Developer/ Marketer	Type[†]	Traits[‡]	Released	Maturity[§]
HyCLASS 115W	Croplan by Winfield	OP	RR/SURT	2008	EM
HyCLASS 125W	Croplan by Winfield	OP	RR/SURT	---	M
HyCLASS 220W	Croplan by Winfield	OP	RR	---	M
Einstein	DL Seeds Inc.	Hybrid	---	---	---
Popular	DL Seeds Inc.	Hybrid	---	---	E
Raffiness	DL Seeds Inc.	Hybrid	---	---	M
Reflex CL	DL Seeds Inc.	Hybrid	CL	---	---
Thure	DL Seeds Inc.	Hybrid	---	---	---
46W94	DuPont Pioneer	Hybrid	RR	2011	M
Wichita	Kansas State University	OP	---	1999	M
Hekip	Momont, France	Hybrid	---	2014	E
Helix	Momont, France	Hybrid	---	---	F
Kadore	Momont, France	OP	---	---	M
Quartz	Momont, France	OP	---	---	M
DK Imiron CL	Monsanto / DeKalb	Hybrid	CL	---	F
DK Imistar CL	Monsanto / DeKalb	Hybrid	CL	---	---
DK Sensei	Monsanto / DeKalb	Hybrid	SD	---	---
DK Severnyl	Monsanto / DeKalb	Hybrid	SD	---	---
DKW45-25	Monsanto / DeKalb	OP	RR/SURT	2013	EM
DKW46-15	Monsanto / DeKalb	OP	RR/SURT	2008	EM
DKW47-15	Monsanto / DeKalb	OP	RR/SURT	2008	M
Edimax CL	Rubisco Seeds	Hybrid	CL	2012	M
Hornet	Rubisco Seeds	Hybrid	---	2008	M
Inspiration	Rubisco Seeds	Hybrid	---	2014	M
Mercedes	Rubisco Seeds	Hybrid	---	2014	M
Star 915W	Star Specialty Seed Inc.	OP	RR/SURT	2014	M
Virginia	Virginia State University	OP	---	2003	M
VSX-3	Virginia State University	OP	---	---	M

[†]OP: Open Pollinated

[‡]CL: Clearfield; RR: Roundup Ready; SD: semi-dwarf; SU & SURT: sulfonylurea carryover tolerant

[§]Maturity rated at early (E), Medium (M), and Full (F).

2017 Winter Canola Variety Trial: Bushland, TX

Rank [b]	Entry	Source	Yield (lb/a) 2-Year [♮]	Yield (lb/a) 2017	Test Wt (lb/bu) [†]	Stand (%) [‡]	Damage (%) [§]
1	Quartz	MOMONT / Photosyntech	1737	422	32.4	63	63
2	Edimax CL	Rubisco Seeds	1677	762	50.9	58	58
3	Popular	DL Seeds	1369	876	50.0	45	18
4	Inspiration	Rubisco Seeds	1273	843	47.7	50	25
5	Einstein	DL Seeds	1246	747	51.6	63	18
6	HyCLASS115W	CROPLAN by WinField	1157	463	50.6	78	80
7	DKW45-25	Monsanto / DEKALB	1120	323	--	78	40
8	Mercedes	Rubisco Seeds	1077	133	--	68	35
9	Star 915W	Star Specialty Seeds	970	384	48.9	55	63
10	DKW46-15	Monsanto / DEKALB	461	576	56.8	68	78
11	Hekip	MOMONT / Photosyntech		814	40.4	55	43
12	Riley	Kansas State University		550	27.3	80	50
13	DKW44-10	Monsanto / DEKALB		245	--	60	68
14	HyCLASS225W	CROPLAN by WinField		103	--	68	53
	LSD		**429**	**202**	**9.5**	**NS**	**24**
	CV		**26.6**	**18.1**	**5.1**	**20.0**	**22.6**
	Mean		**1224**	**517**	**46.9**	**63**	**49**

[b] Entries ranked on 2-Year then 2017 averages.
[♮] Average from 2016 and 2017
[†] Insufficent sample to determine test weight on certain entries.
[‡] Stand is a function of poor germination and winterkill.
[§] May 13 damage (2 weeks post April 29 - 30, 2017 snow storm) includes lodged plants, broken and snapped branches.

2017 National Winter Canola Variety Trial: OP and Hybrids, College Station, TX [‡]

Rank	OP Entry	Source	Bolting (%)	Rank	Hybrid Entry	Source	Bolting (%)
1	Sumner	KSU	55.0	1	Plurax CL	DL Seeds	75.0
2	Torrington	KSU	42.5	2	Popular	DL Seeds	42.5
3	Wichita	KSU	30.0	3	Einstein	DL Seeds	35.0
4	HyClass 115W	Croplan	25.0	4	Hekip	Momont/Phytosyntech	22.5
5	HyClass 225W	Croplan	15.0	5	DK Imistar CL	DeKalb/Monsanto	20.0
6	DKW44-10	DeKalb/Monsanto	13.8	6	Mercedes	Rubisco Seeds	16.3
7	DKW45-25	DeKalb/Monsanto	10.0	7	Kuga	DL Seeds	13.8
8	KSR4653S	KSU	10.0	8	Edimax CL	Rubisco Seeds	13.8
9	Riley	KSU	10.0	9	Inspiration	Rubisco Seeds	10.0
10	EXP 52-16	Croplan	8.8	10	DK Sensei	DeKalb/Monsanto	7.5
11	DKW46-15	DeKalb/Monsanto	7.5	11	MH12AY04	Momont	6.3
12	15.WC.05633	UI	4.3	12	MH12AY27	Momont	5.0
13	Quartz	Momont/Phytosyntech	4.3	13	DK Imiron CL	DeKalb/Monsanto	5.0
14	15.WC.1	UI	2.8	14	MH12AY36	Momont	1.8
15	MH09DJ058	Momont	0.5	15	DK Severnyl	DeKalb/Monsanto	0.5
	LSD		**9.8**		**LSD**		**11.5**
	CV		**42.9**		**CV**		**44.1**
	Mean		**16.0**		**Mean**		**18.3**

[‡] No yields were taken due to poor vernalization.

2017 National Winter Canola Variety Trial: OP & Hybrid, Thrall, TX[‡]

Rank	Entry	Source	Bolting (%)
1	Sumner	KSU	18.8
2	Hekip	Momont	18.8
3	Torrington	KSU	13.8
4	Popular	DL Seeds	13.8
5	DKW45-25	DeKalb/Monsanto	13.8
6	Wichita	KSU	12.5
7	DKW44-10	DeKalb/Monsanto	11.3
8	EXP 52-16	Croplan	11.3
9	Plurax CL	DL Seeds	9.3
10	Mercedes	Rubisco Seeds	8.8
11	Inspiration	Rubisco Seeds	8.8
12	HyClass 115W	Croplan	8.8
13	Edimax CL	Rubisco Seeds	6.3
14	DK Imistar CL	DeKalb/Monsanto	6.3
15	Riley	KSU	5.0
16	Kuga	DL Seeds	5.0
17	HyClass 225W	Croplan	5.0
18	Einstein	DL Seeds	3.8
19	DKW46-15	DeKalb/Monsanto	3.8
20	Quartz	Momont/Phytosyntech	2.5
21	DK Sensei	DeKalb/Monsanto	2.5
22	DK Imiron CL	DeKalb/Monsanto	2.5
23	DK Severnyl	DeKalb/Monsanto	1.3
LSD			**8.6**
CV			**72.6**
Mean			**8.4**

[‡]No yields were taken due to poor vernalization.

2017 Spring Canola Variety Trial: South Texas Summary

Rank[†]	Entry	Source	Yield (lb/a)			Test Wt (lb/bu)
			AVG	College Station	Corpus Christi	
1	InVigor L241C	Bayer	1352	1236	1440	45.3
2	InVigor L230	Bayer	1331	887	1665	48.9
3	HyCLASS 970	Croplan	1214	987	1384	47.1
4	InVigor L252	Bayer	1160	1117	1191	48.3
5	InVigor L233P	Bayer	1155	993	1277	48.6
6	45H31	Pioneer	1108	958	1221	45.2
7	InVigor L140P	Bayer	1106	1049	1135	47.2
8	RUB3	Caldbeck Consulting	1098	903	1245	48.7
9	RUB4	Caldbeck Consulting	1008	726	1219	49.5
10	HyCLASS 930	Croplan	945	708	1123	49.0
11	InVigor L130	Bayer	938	934	941	46.5
12	RUB2	Caldbeck Consulting	908	550	1178	49.6
13	HyCLASS 955	Croplan	773	467	1002	48.3
14	RUB1	Caldbeck Consulting	682	531	795	47.0
15	DKL 70-10	Dekalb/Monsanto	--	--	1462	--
16	DKL 41-14BL	Dekalb/Monsanto	--	--	1133	--
	LSD		172	252	265	1.7
	CV		15.1	16.9	15.4	3.3
	Mean		1056	854	1213	47.8

[†]Entries ranked based on two location average

2017 Spring Canola Variety Trial: College Station, TX

Rank[†]	Entry	Source	Yield (lb/a)			Test Wt (lb/bu)	Height (cm)	Shatter (%)	Green Pods (%)	Lodging (%)	Bloom (Julian Days)
			3-Year[‡]	2-Year	2017						
1	InVigor L252	Bayer	1357	1433	1117	51.9	122	3	5	0	47
2	InVigor L140P	Bayer	1240	1323	1049	48.0	125	0	7	0	50
3	InVigor L130	Bayer	1209	1316	934	50.1	130	0	2	0	51
4	HyCLASS 930	Croplan	781	850	708	50.2	--	--	--	0	25
5	HyCLASS 955	Croplan	735	819	467	48.2	--	--	--	0	25
6	InVigor L241C	Bayer		1623	1236	48.5	127	3	3	0	47
7	HyCLASS 970	Croplan		1255	987	47.9	122	7	5	0	34
8	InVigor L233P	Bayer			993	48.6	128	0	8	0	53
9	45H31	Pioneer			958	46.1	113	0	3	0	44
10	RUB3	Caldbeck Consulting			903	51.9	123	7	2	0	44
11	InVigor L230	Bayer			887	50.3	122	5	2	0	45
12	RUB4	Caldbeck Consulting			726	53.9	122	5	2	1	43
13	RUB2	Caldbeck Consulting			550	52.9	107	8	2	20	37
14	RUB1	Caldbeck Consulting			531	49.6	93	8	2	2	37
	LSD		232	264	252	3.5	9	7	4	10	3
	CV		20.4	17.5	16.9	4.1	4.3	98.6	63.5	309.0	4.0
	Mean		1056	1227	854	49.9	119	4	4	2	42

[†]Entries ranked by 3-Year, then 2-Year, then 2017 averages
[‡]Average from 2015, 2016, and 2017

2017 Spring Canola Variety Trial: Corpus Christi, TX

Rank[†]	Entry	Source	Yield (lb/a) 2-Year[‡]	Yield (lb/a) 2017	Test Wt (lb/bu)	Bloom (Julian Days)
1	HyCLASS 970	Croplan	1529	1384	46.4	69
2	HyCLASS 930	Croplan	1448	1123	48.2	51
3	InVigor L241	Bayer	1433	1440	43.0	74
4	HyCLASS 955	Croplan	1358	1002	48.4	52
5	InVigor L140	Bayer	1263	1135	46.6	71
6	InVigor L252	Bayer	1249	1191	45.6	76
7	InVigor L130	Bayer	1183	941	43.9	75
8	InVigor L230	Bayer		1665	47.8	67
9	DKL 70-10	Dekalb/Monsanto		1462	47.9	51
10	InVigor L233	Bayer		1277	48.7	69
11	RUB3	Caldbeck Consulting		1245	46.3	72
12	45H31	Pioneer		1221	44.5	76
13	RUB4	Caldbeck Consulting		1219	46.2	76
14	RUB2	Caldbeck Consulting		1178	47.1	69
15	DKL 41-14BL	Dekalb/Monsanto		1133	50.2	56
16	RUB1	Caldbeck Consulting		795	45.0	67
	LSD		214	265	1.7	--
	CV		14.6	15.4	2.5	--
	Mean		1352	1213	46.6	--

[†]Entries ranked by 2-Year then 2017 averages

[‡]Average from 2016 and 2017

Acknowledgements