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TEXAS A&M
AGRILIFE
EXTENSION

2016

**Texas Canola Variety
Trial Results**



varietytesting.tamu.edu

2016 Texas Uniform Canola Variety Trials

<http://varietytesting.tamu.edu/oilseed>

Texas A&M AgriLife Extension Service

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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 rapeseed, 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 oil is utilized in numerous food products as well as cooking because it 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. Like wheat, there are spring and winter types available. North of Nebraska, spring canola is grown as a short season summer crop, but throughout the southern Great Plains (Oklahoma, Texas, etc.) winter 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. While the life cycle of canola is similar to wheat in terms of timing (plant in fall and harvest in spring), the ideal planting window for canola is generally narrower than it is for wheat due to elevated winterkill risks with young plants before the 4-leaf stage.

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 update to the ADM crushing facility near Lubbock to allow it to accept 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. Pod 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

Adjusted yield (10% moisture), 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.

2016 Location Summaries and Agronomic Data

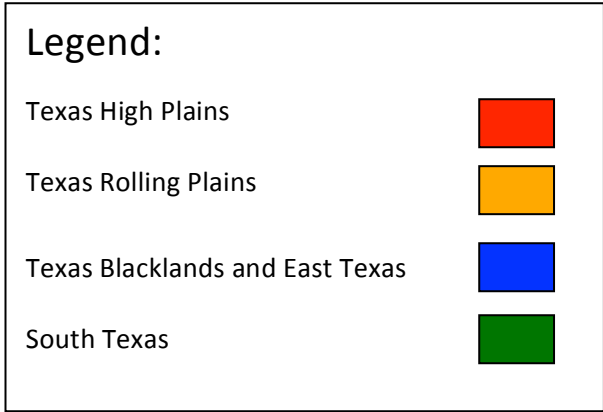
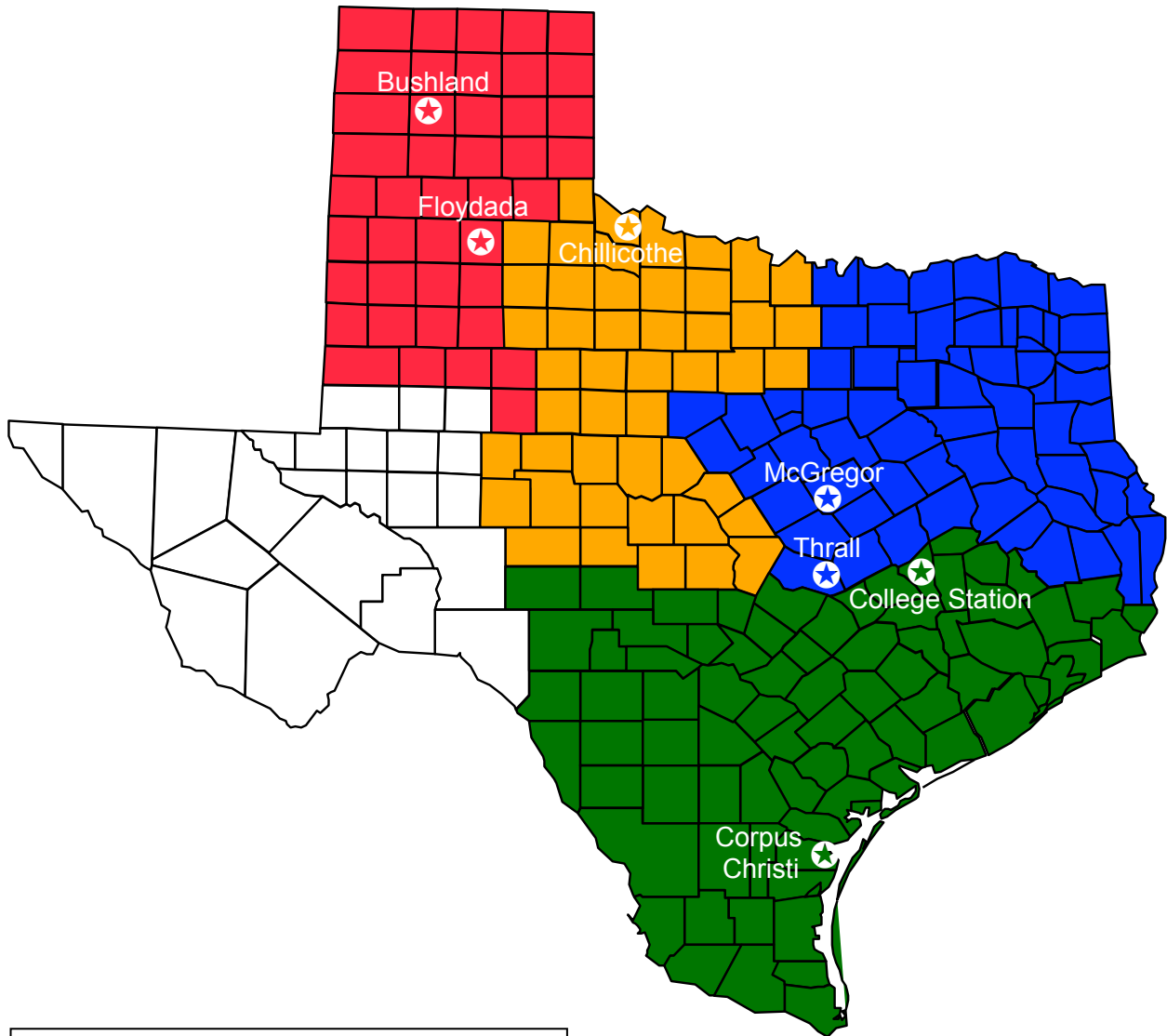
Location ¹	Cooperator	Issues	Planted	Harvested	Fertility	Pesticides
Bushland	Texas A&M AgriLife James Bush Research Farm	Cabbage Leaf Aphids	Fall 1: 9/17/15 Fall 2: 10/2/15	6/21/16	None	Pre-plant Roundup (32 oz/a)
Chillicothe	Texas A&M AgriLife Research Farm	Hail Damage on May 13, 2016	9/23/15	ABANDONED	30 #N/A	Pre-emergent Roundup (32 oz/a) Select (6 oz/a)
College Station	Texas A&M AgriLife Extension Farm	Excessive rainfall throughout winter and spring; Volunteer wheat; Mild winter – Vernalization issues	10/21/15 (Winter) 11/12/15 (Spring)	ABANDONED (Winter) 4/26/16 (Spring)	70 #N/A 15 #S/A	Treflan (1.5 pt/a) Stinger (0.3 pt/a) Transform (0.75 oz/a)
Corpus Christi	Texas A&M AgriLife Research Farm	Excessive spring rainfall	12/8/16	5/2/16	110 #N/A	None
Floydada	Ian McIntosh	Storm damage at harvest	9/25/2015	6/10/2016	25 #N/A	None
McGregor	Jason Niemeier	Accidental glyphosate overspray	10/21/15	ABANDONED	None	None
Thrall	Stiles Farm Foundation	Volunteer wheat & ryegrass; Excessive rainfall throughout winter and spring; Mild winter – Vernalization issues	10/20/15	ABANDONED	70 #N/A 15 #S/A	Treflan (1.5 pt/a) Poast (2 pt/a)

¹Corpus Christi, McGregor, and Thrall were the only locations where irrigation was not available.

Season Summary:

The 2015-2016 canola-growing season started off with favorable moisture conditions in the fall throughout the state. Many growers were able to get planted in a timely fashion. However; mild winter temperatures throughout the state caused issues with winter canola allowing for dense vegetation in the Texas Panhandle (which promoted higher aphid populations) and limited yield potentials in Central Texas due to vernalization issues. The winter in the Texas Rolling Plains was drier than normal, but adequate rainfall started in mid-March. Excessive spring storms caused further problems for locations throughout the state. A late hailstorm in the Rolling Plains shattered some fields in the region, while prolonged rainy conditions caused muddy fields and delayed harvest with some shattering in areas throughout Central Texas.

2016 Texas Canola Variety Trial Locations



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	2010	M
HyCLASS 220W	Croplan by Winfield	OP	RR	2014	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: sulfonyleurea carryover tolerant

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

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; SD: semi-dwarf; ST: shatter tolerant; SU & SURT: sulfonylurea carryover tolerant

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

2016 Winter Canola Variety Trial: Bushland, TX

Rank	Variety	Source	Yield (lb/a)			Test Wt (bu/a)	Winter Survival ¹ (0-5 rating)	Height (inches)
			Average	Planting Date				
				Sep 17	Oct 2			
1	Quartz	Momont	2265	2615	1916	55	2.0	43
2	Edimax CL	Rubisco Seeds	2039	2288	1791	49	1.6	48
3	Mercedes	Rubisco Seeds	2011	1706	2316	51	2.3	45
4	Einstein	DL Seeds	1817	1578	2056	49	1.6	45
5	Inspiration	Rubisco Seeds	1708	1559	1857	51	1.5	47
6	Popular	DL Seeds	1693	1698	1687	46	2.3	45
7	DKW45-25	Monsanto/DeKalb	1540	1652	1428	54	2.3	47
8	Wichita	KSU	1506	1890	1123	56	0.8	49
9	Kadore	Momont	1484	1667	1362	47	1.6	44
10	Hornet	Rubisco Seeds	1419	1216	1622	48	2.9	47
11	46W94	DuPont Pioneer	1358	1732	983	49	2.3	47
12	HyCLASS 115W	Croplan/Winfield	1242	1619	865	37	2.5	48
13	Star 915	Star Specialty Seed	1163	1361	966	43	2.3	44
14	HyCLASS 125W	Croplan/Winfield	998	995	1001	49	1.5	46
15	DKW46-15	Monsanto/DeKalb	544	345	676	50	2.3	47
LSD			370	589	488	10.4	NS	4.5
CV			20.6	20.2	20.9	18.4	41.4	8.7
Mean			1531	1622	1443	49.0	2.4	45.9

¹Survival scores taken from 2nd planting date. Rating (0=poor, 5=excellent) based on leaf number, color, and root turgor.

2016 Winter Canola Variety Trial: College Station, TX

Rank	Variety	Source	Yield lb/a ¹	Test Wt lb/bu	Bolting %
1	46W94	DuPont Pioneer	--	--	95
2	Hekip	Momont	--	--	95
3	Virginia	Virginia Tech	--	--	94
4	Einstein	DL Seeds	--	--	92
5	VSX-3	Virginia Tech	--	--	89
6	Popular	DL Seeds	--	--	82
7	Wichita	KSU	--	--	78
8	DKW46-15	Monsanto/DeKalb	--	--	68
9	DL14001R	DL Seeds	--	--	65
10	Quartz	Momont	--	--	43
11	HyCLASS220W	Cropland/Winfield	--	--	42
12	Thure	DL Seeds	--	--	37
13	Edimax CL	Rubisco Seeds	--	--	37
14	DK Sensei	Monsanto/DeKalb	--	--	32
15	DKW47-15	Monsanto/DeKalb	--	--	30
16	Mercedes	Rubisco Seeds	--	--	27
17	DK Imistar CL	Monsanto/DeKalb	--	--	25
18	Reflex CL	DL Seeds	--	--	25
19	DK Imiron CL	Monsanto/DeKalb	--	--	20
20	DK Severnyl	Monsanto/DeKalb	--	--	18
21	Hornet	Rubisco Seeds	--	--	18
22	Inspiration	Rubisco Seeds	--	--	17
23	Helix	Momont	--	--	12
24	15.UI.WC.1	Univ. of Idaho	--	--	10
25	Kadore	Momont	--	--	5
LSD					25.9
CV					34.6
Mean					46.0

¹No yield due to delayed maturity from mild winter and vernalization issues.

2016 Spring Canola Variety Trial: South Texas Regional Summary

Rank	Variety	Source	Average	Yield (lb/a)		Test Wt (lb/bu)
				Corpus Christi	College Station	Average
1	NHC1258C	NuSeed	1855	2097	1493	48.8
2	InVigor L241C	Bayer	1717	1425	2010	46.2
3	HyCLASS 970	Croplan	1623	1723	1523	48.2
4	InVigor 5440	Bayer	1542	1332	1751	48.5
5	InVigor L130	Bayer	1538	1505	1571	48.7
6	InVigor L252	Bayer	1537	1325	1748	45.9
7	HyCLASS 955	Croplan	1481	1714	1171	49.0
8	InVigor L140P	Bayer	1470	1433	1506	45.7
9	HyCLASS 930	Croplan	1437	1881	992	45.8
10	V12-3	Cargill	1427	1503	1351	43.2
11	V22-1	Cargill	1345	1312	1388	45.3
12	V12-1	Cargill	1244	1356	1131	45.0
13	CC67017	Caldbeck Consulting	1194	1360	945	45.7
14	CC67012	Caldbeck Consulting	1087	1333	717	46.3
15	CC67027	Caldbeck Consulting	963	1282	751	46.9
16	NCC101S	Caldbeck Consulting	--	1678	--	--
17	H1613	DL Seeds	--	1464	--	--
18	H1617	DL Seeds	--	1311	--	--
19	5525 CL	Caldbeck Consulting	--	1140	--	--
20	H1612	DL Seeds	--	778	--	--
LSD			282.8	381.1	449.8	3.6
CV			16.7	15.9	18.8	6.5
Mean			1437.3	1452.4	1357	46.6

2016 Spring Canola Variety Trial: College Station, TX

Rank ¹	Variety	Source	Yield (lb/a)		Test Wt (lb/bu)	Shatter (%)	GreenPods (%)	Lodging 0-10	Bloom Julian Days
			2-Year [§]	2016					
1	InVigor 5440	Bayer	1524	1751	49	2	5	0	57
2	InVigor L252	Bayer	1500	1748	45	5	3	0	57
3	InVigor L130	Bayer	1319	1571	50	3	5	0	57
4	InVigor L140P	Bayer	1317	1506	45	0	18	0	59
5	V12-1	Cargill	1057	1131	45	0	33	0	67
6	HyCLASS 955	Croplan	896	1171	49	7	0	0	36
7	HyCLASS 930	Croplan	825	992	45	5	0	2	36
8	InVigor L241C	Bayer		2010	47	2	5	0	41
9	HyCLASS 970	Croplan		1523	50	2	10	0	48
10	NHC1258C	NuSeed		1493	50	5	0	7	36
11	V22-1	Cargill		1388	45	3	20	0	61
12	V12-3	Cargill		1351	41	2	20	0	61
13	CC67017	Caldbeck Consulting		945	48	15	2	0	36
14	CC67027	Caldbeck Consulting		751	47	5	3	0	49
15	CC67012	Caldbeck Consulting		717	47	15	2	0	48
LSD			290.1	449.8	7.1	5.9	13.0	5.1	4.8
CV			18.1	18.8	8.9	76.1	92.2	543.8	5.7
Mean			1205.3	1356.9	46.8	4.7	8.4	0.6	49.9

¹Rank based on 2-year average then 2016 average.

[§]Data from 2015 and 2016

* Ratings use 0-10 scale where 10 equals excellent stand, excellent vigor, and high lodging

2016 Spring Canola Variety Trial: Corpus Christi, TX

Rank	Variety	Source	Yield lb/a	Yield bu/a	Test Wt lb/bu
1	NHC1258C	NuSeed	2097	44	48
2	HyCLASS 930	Croplan	1881	40	47
3	HyCLASS 970	Croplan	1723	37	47
4	HyCLASS 955	Croplan	1714	35	49
5	NCC101S	Caldbeck Consulting	1678	35	48
6	InVigor L130	Bayer	1505	32	47
7	V12-3	Cargill	1503	33	46
8	H1613	DL Seeds	1464	30	48
9	InVigor L140P	Bayer	1433	31	46
10	InVigor L241C	Bayer	1425	31	46
11	CC67017	Caldbeck Consulting	1360	30	45
12	V12-1	Cargill	1356	30	45
13	CC67012	Caldbeck Consulting	1333	29	45
14	InVigor 5440	Bayer	1332	28	48
15	InVigor L252	Bayer	1325	28	47
16	V22-1	Cargill	1312	29	45
17	H1617	DL Seeds	1311	27	49
18	CC67027	Caldbeck Consulting	1282	27	47
19	5525 CL	Caldbeck Consulting	1140	26	45
20	H1612	DL Seeds	778	18	44
	LSD		381.1	8.2	2.4
	CV		15.9	15.9	2.9
	Mean		1452.4	31.1	46.5

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