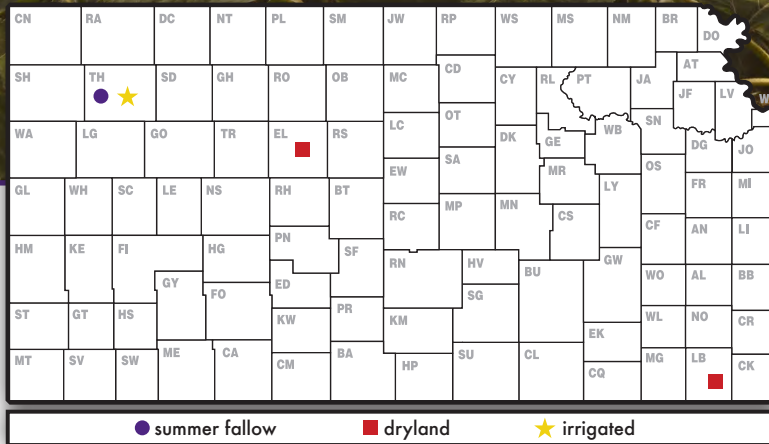
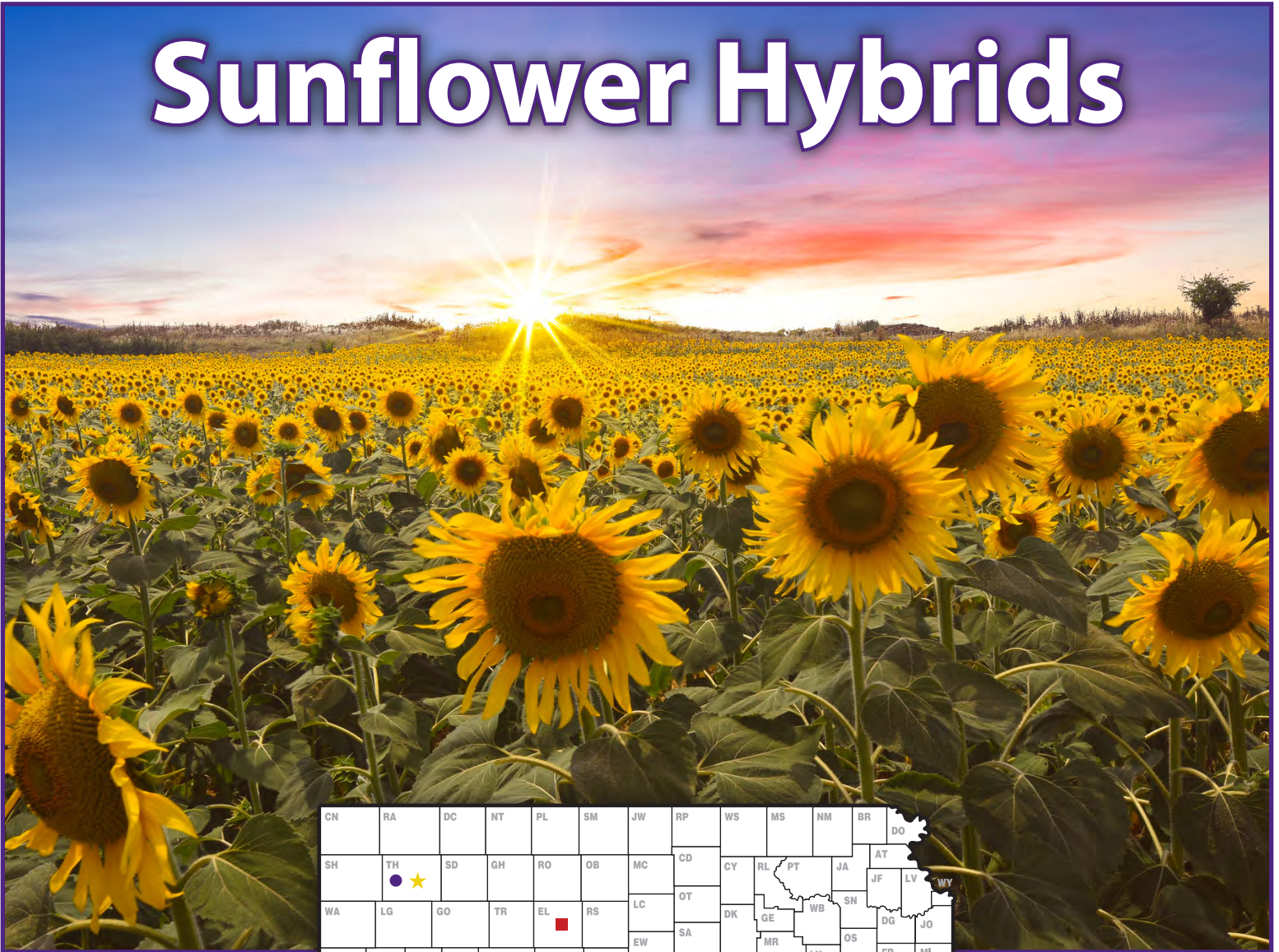


2018 Kansas Performance Tests with

Sunflower Hybrids



Report of Progress 1149



K-STATE
Research and Extension

TABLE OF CONTENTS

INTRODUCTION

Test Objectives and Procedures	1
Data Interpretation	1

PERFORMANCE TEST RESULTS

OILSEED TESTS

Table 1. Colby Fallow, Thomas County	2
Table 2. Colby Irrigated, Thomas County	4
Table 3. Parsons Dryland, Labette County	6

ENTRANTS AND ENTRIES IN 2018 TESTS

Table 4.....	7
Electronic Access, University Research Policy, and Duplication Policy.....	8

INTRODUCTION

Objectives and Procedures

Sunflower performance tests were conducted in 2018 by the Kansas Agricultural Experiment Station to provide farmers, extension workers, and private industry with unbiased agronomic information on many of the sunflower hybrids marketed in the state. Tests were financed in part by entry fees from private companies. Companies known to be developing and marketing sunflowers were invited to participate and enter hybrids on a voluntary, fee-entry basis. As a result, not all hybrids grown in the state were included in the tests, and hybrids were not grown uniformly at all locations.

Test locations in 2018 were Thomas County, irrigated and fallow; Ellis County, dryland; and Labette County, dryland. Oilseed entries were grown at all locations. Hybrids were planted in four-row, replicated plots at all locations. To ensure uniform and adequate stands, all tests except those in Thomas County were planted at a high seeding rate and were hand thinned after emergence to desired stands. Tests in Thomas County were planted to stand with a modified Monosem Vacuum Planter. The Ellis County test location was not harvested due to adverse growing conditions.

Environmental factors affecting test results and cultural practices are presented for each individual test site. Test results for 2018 and period-of-years average data are included in Tables 1 through 3. Entrants and entries in 2018 tests are listed in Table 4.

Data Interpretation

Yields are reported as pounds of seed per acre adjusted to 10% moisture content.

Days to half bloom is the number of days from date of planting to the date when 50% of plants are in bloom.

Lodging percentage is based on counts of lodged and total plants in harvested areas at all locations.

Statistical analysis: Conducting perfect tests is virtually impossible because soil fertility, moisture, and other environmental factors vary. Therefore, small differences in results may be trivial. To help interpret data, we applied a statistical technique, analysis of variance, whenever possible. Such analysis requires repeating whole sets of varieties or treatments several times and placing individual varieties or treatments as they would be placed by chance alone. Results of the analyses are reported in terms of least significant differences (LSD). If two means differ by more than the LSD (.05), such a difference would be due to chance variation only 5% of the time. So, it's 95% probable that the difference was due to treatment. If means do not differ by as much as the LSD, little confidence can be placed in the importance of varietal or treatment differences. The coefficient of variability (CV) represents an estimate of the precision of replicated yield trials. Trials with a CV ranging from 10% to 15% are usually acceptable for performance comparisons. Trials with a CV greater than 15% provide only a rough guide to hybrid performance.

ACKNOWLEDGEMENTS

Cooperation of Raenette Martin, Ram Perumal, Troy Ostmeier, Gretchen Sassenrath, and Lonnie Mengarelli for field operations is sincerely appreciated. Vicki Brown, office specialist, assisted in soliciting entries, and temporary worker Danielle Foster helped with seed counting, plot thinning, and maintenance. Mary Knapp at the Kansas State University Weather Data Library provided climatological data.

NORTHWEST KANSAS FALLOW OILSEED SUNFLOWER TEST

Colby, Thomas County
 K-State Northwest Research Center
 Planted: 6/11/2018
 Harvested: 10/25/2018
 100-30-0 lb/a N, P, K
 Keith silt loam
 Previous crop: wheat
 Cooperator: Raenette Martin

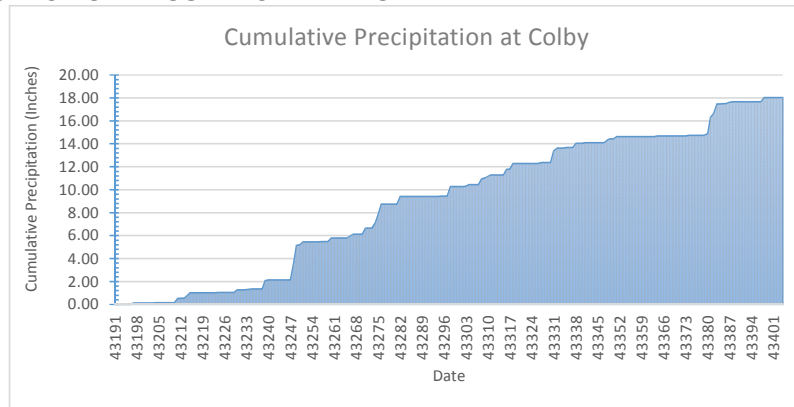


Table 1 continued. Colby Fallow Oilseed Sunflower Performance Test, 2018**3-Year Averages (2016- 2018)**

Brand	Hybrid	Yield (lb/a)	Yield as % of test average	Days to half bloom	Plant height (in.)	Lodging (%)	Test weight (lb/bu)	Seed weight (g/200)
CROPLAN	432 E	1471	83	59	47	--	24	16
CROPLAN	545 CL	1774	127	59	51	--	25	10
CROPLAN	549 CL HO	1676	102	57	58	--	24	13
NUSEED	CAMARO II	1700	117	57	52	--	25	13
NUSEED	HORNET	1621	102	59	52	--	24	12
NUSEED	N4HM354	1595	110	58	46	--	25	12
AVERAGES		1640	107	58	51		25	13

NORTHWEST KANSAS IRRIGATED OILSEED SUNFLOWER TEST

Colby, Thomas County
 K-State Northwest Research Center
 Planted: 6/12/2018
 Harvested: 10/24/2018
 100-30-0 lb/a N, P, K
 Keith silt loam
 Previous crop: wheat
 Cooperators: Raenette Martin

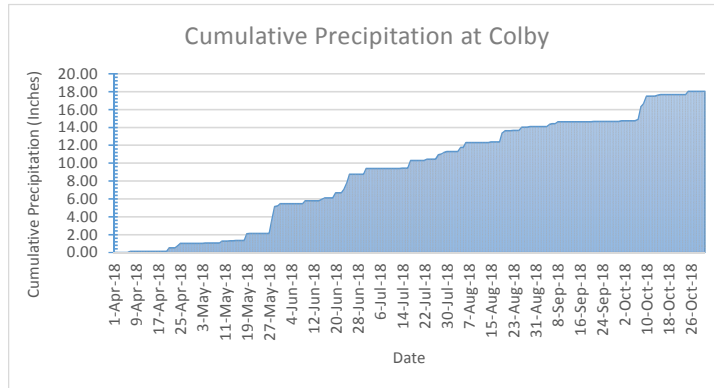


Table 2. Colby Irrigated Oilseed Sunflower Performance Test, 2018

Brand	Hybrid	Yield as %		Days to half bloom	Plant height (in.)	Lodging (%)	Test weight (lb/bu)	Seed weight (g/200)
		Yield (lb/a)	of test average					
CROPLAN	3845 HO	2042	88	60	66	9	27	18
CROPLAN	432 E	2568	111	59	64	6	27	17
CROPLAN	450 E HO	2388	103	62	71	2	27	16
CROPLAN	455 CL HO	2445	105	59	70	14	27	14
CROPLAN	545 CL	2819	122	64	66	2	29	11
CROPLAN	549 CL HO	2691	116	60	73	6	28	15
CROPLAN	557 CL HO	2572	111	65	62	1	27	15
CROPLAN	568 CL HO	2652	114	63	66	8	27	11
DYNA GRO	H42HO18CL	2073	89	59	55	1	27	16
DYNA GRO	H44HO12CL	1827	79	58	62	15	27	16
DYNA GRO	H48HO15CL	2052	88	62	69	12	25	16
DYNA GRO	H49HO19CL	2534	109	64	69	9	27	15
DYNA GRO	H49NS14CL	2518	109	62	59	3	28	15
DYNA GRO	XH81H50CL	2297	99	64	65	6	27	13
DYNA GRO	XH81H51EX	1137	49	51	51	5	26	18
DYNA GRO	XH81N46EX	1422	61	59	65	13	25	17
DYNA GRO	XH81N48EX	2315	100	61	68	11	29	18
DYNA GRO	XH82H63EX	2925	126	62	72	3	29	15
DYNA GRO	XH82H65EX	2453	106	59	70	10	28	15
DYNA GRO	XH82N62EX	2323	100	62	73	7	27	16
DYNA GRO	XH82N64EX	2206	95	60	65	4	28	15
NUSEED	CAMARO II	2558	110	61	66	4	29	15
NUSEED	HORNET	2191	94	64	68	10	27	12
NUSEED	N4HE302	1893	81	60	64	11	26	18
NUSEED	N4HM354	2445	105	60	65	3	28	13
NUSEED	N4HM521	2251	97	62	65	9	26	16
NUSEED	N4HP470	2588	112	62	67	4	27	16
NUSEED	NHKM34006	2443	105	66	72	10	26	16
NUSEED	NHKP53383	2366	102	66	69	4	26	16
	Average	2310	100	61	66	7	27	15
	CV (%)	13	13	1	6	--	2	--
	LSD (0.05)	444	19	1	6	5	0	--

*Unless two varieties differ by more than the LSD, little confidence can be placed in one being superior to the other.

2-Year Averages (2017 and 2018)

CROPLAN	3845 HO	2373	100	58	62	6	29	17
CROPLAN	432 E	2613	111	56	65	5	28	17
CROPLAN	455 CL HO	2493	106	56	69	11	29	11
CROPLAN	545 CL	2739	116	60	65	2	30	9
CROPLAN	549 CL HO	2822	120	57	73	6	29	11
CROPLAN	568 CL HO	2824	119	59	68	8	28	10
NUSEED	CAMARO II	2516	107	58	66	6	29	9
NUSEED	HORNET	2351	99	60	69	9	28	9
NUSEED	N4HM354	2492	105	57	65	5	29	10
NUSEED	N4HM521	2172	92	59	68	8	28	11
AVERAGES		2540	108	58	67	7	29	11

Table 2 continued. Colby Irrigated Oilseed Sunflower Performance Test, 2018**3-Year Averages (2016- 2018)**

Brand	Hybrid	Yield as %		Days to half bloom	Plant height (in.)	Lodging (%)	Test weight (lb/bu)	Seed weight (g/200)
		Yield (lb/a)	of test average					
CROPLAN	432 E	2487	104	--	67	6	29	15
CROPLAN	545 CL	2700	112	--	67	4	29	10
CROPLAN	549 CL HO	2739	114	--	75	6	29	11
NUSEED	CAMARO II	2535	106	--	66	3	29	11
NUSEED	HORNET	2490	103	--	70	9	28	9
NUSEED	N4HM354	2560	106	--	64	5	29	11
AVERAGES		2585	108		68	6	29	11

SOUTHEAST KANSAS DRYLAND OILSEED SUNFLOWER TEST

Parsons, Labette County
 K-State Southeast Research Center
 Planted: 7/20/2018
 Harvested: 12/12/2018
 80-46-60 lb/a N, P, K
 Parsons silt loam
 Previous crop: wheat
 Cooperators: Gretchen Sassenrath and
 Lonnie Mengarelli

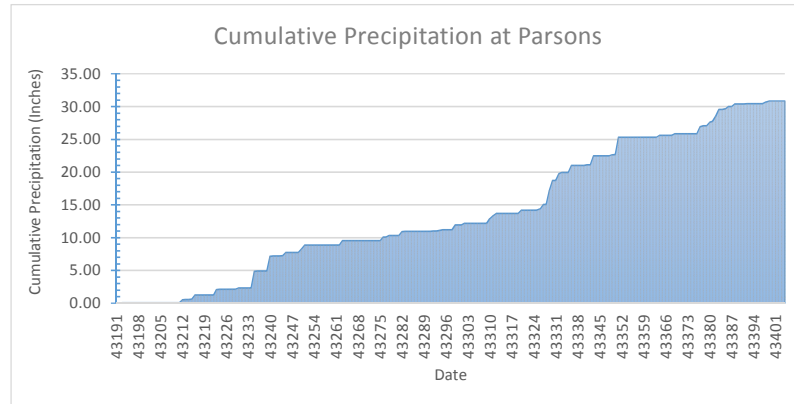


Table 3. Parsons Dryland Oilseed Sunflower Performance Test, 2018

Brand	Hybrid	Yield (lb/a)	Yield as % of test average	Days to half bloom	Plant height (in.)	Lodging (%)	Test weight (lb/bu)	Seed weight (g/200)
CROPLAN	432 E	1206	123	50	66	8	30	--
CROPLAN	450 E HO	1412	144	50	62	20	31	--
CROPLAN	455 CL HO	1344	137	50	66	30	29	--
CROPLAN	545 CL	1193	121	54	60	13	31	--
CROPLAN	549 CL HO	1347	137	51	68	8	31	--
CROPLAN	557 CL HO	1112	113	57	65	15	30	--
CROPLAN	568 CL HO	1646	167	52	62	52	21	--
NUSEED	CAMARO II	1283	130	52	63	10	31	--
NUSEED	HORNET	1055	107	57	66	12	29	--
NUSEED	N4HE302	569	58	50	63	44	30	--
NUSEED	N4HM354	667	68	53	66	18	30	--
NUSEED	N4HP470	715	73	54	64	20	31	--
	Averages	1117	100	52	64	29	28	--
	CV (%)	15	15	1	4	64	16	--
	LSD (0.05)	217	22	0	3	27	6	--

* Unless two varieties differ by more than the LSD, little confidence can be placed in one being superior to the other.

2-Year Averages (2017 and 2018)

CROPLAN	3845 HO	635	88	50	57	100	27	--
CROPLAN	432 E	944	109	48	60	7	29	--
CROPLAN	455 CL HO	1063	123	47	60	16	28	--
CROPLAN	545 CL	985	114	50	56	8	29	--
CROPLAN	549 CL HO	1127	131	47	65	6	29	--
CROPLAN	568 CL HO	1175	132	49	54	30	25	--
NUSEED	CAMARO II	989	113	49	60	8	29	--
NUSEED	HORNET	844	97	53	63	12	28	--
NUSEED	N4HM354	700	85	49	60	9	29	--
NUSEED	N4HM521	630	87	46	43	7	21	--
	AVERAGES	909	108	49	58	20	27	--

3-Year Averages (2016 through 2018)

CROPLAN	432 E	1038	123	47	60	9	29	--
CROPLAN	545 CL	1038	123	50	57	8	28	--
CROPLAN	549 CL HO	1018	120	48	65	14	29	--
	AVERAGES	1031	122	48	61	10	29	--

Table 4. Entrants and Entries in the 2018 Sunflower Performance Tests

**Croplan by Winfield
United**

1080 County Road F West
Shoreview, MN 55126
218-686-4122
3845 HO
432 E
450 E HO
455 CL HO
545 CL
549 CL HO
557 CL HO
568 CL HO

Dyna-Gro

P.O. Box 1050
Ralls, TX 79357
806-781-6910
H42HO18CL
H49HO19CL
H48HO15CL
H44HO12CL
H49NS14CL
XH81N46EX
XH81N48EX
XH81H50CL
XH81H51EX
XH82N62EX

Nuseeds Americas Inc

1190 S. Austin Avenue
Alsip, IL 60803
701-630-8122
CAMARO II
HORNET
N4HE302
N4HM354
N4HM521
N4HP470
NHKM34006
NHKP53383

To access crop performance testing information electronically, visit our website. The information contained in this publication, plus more, is available for viewing or downloading at:

www.agronomy.k-state.edu/services/crop-performance-tests/index.html

Excerpts from the University Research Policy Agreement with Cooperating Seed Companies

Permission is hereby given to Kansas State University (KSU) to test varieties and/or hybrids designated on the attached entry forms in the manner indicated in the test announcements. I certify that seed submitted for testing is a true sample of the seed being offered for sale.

I understand that all results from Kansas Crop Performance Tests belong to the University and the public and shall be controlled by the University so as to produce the greatest benefit to the public. Performance data may be used in the following ways: 1) Tables may be reproduced in their entirety provided the source is referenced and data are not manipulated or reinterpreted; 2) Advertising statements by an individual company about the performance of its entries may be made as long as they are accurate statements about the data as published, with no reference to other companies' names or cultivars. In both cases, the following must be included with the reprint or ad citing the appropriate publication number and title: "See the official Kansas State University Agricultural Experiment Station and Cooperative Extension Service Report of Progress 1149, '2018 Kansas Performance Tests with Sunflower Hybrids,' or the Kansas Crop Performance Test website, www.agronomy.k-state.edu/services/crop-performance-tests/index.html, for details. Endorsement or recommendation by Kansas State University is not implied."

Contributors

Jane Lingenfelter, Manhattan
Rob Aiken, Colby
Mary Knapp, Manhattan
Raenette Martin, Colby
Lonnie Mengarelli, Parsons
Troy Ostmeyer, Hays
Ram Perumal, Hays
Gretchen Sassenrath, Parsons

Copyright 2019 Kansas State University Agricultural Experiment Station and Cooperative Extension Service. Contents of this publication may be freely reproduced for educational purposes. All other rights reserved. In each case, give credit to the author(s), 2018 Kansas Performance Tests with Sunflower Hybrids, Kansas State University, March 2019. Contribution no. 19-205-S from the Kansas Agricultural Experiment Station.

Brand names appearing in this publication are for product identification purposes only. No endorsement is intended, nor is criticism implied of similar products not mentioned.

Publications from Kansas State University are available at:

www.ksre.ksu.edu

Kansas State University Agricultural Experiment Station and Cooperative Extension Service