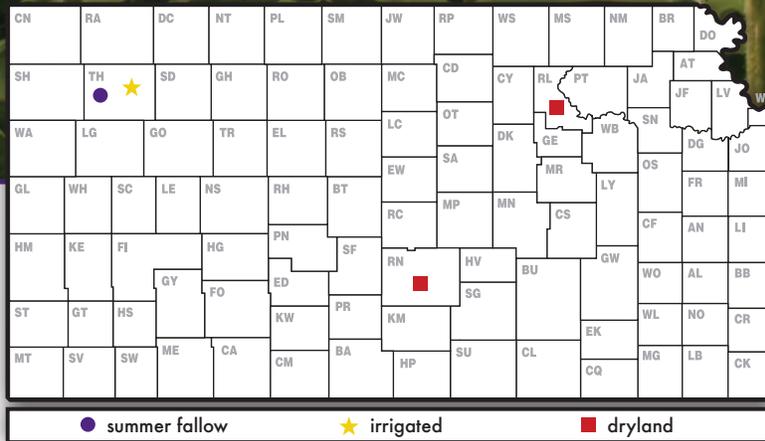
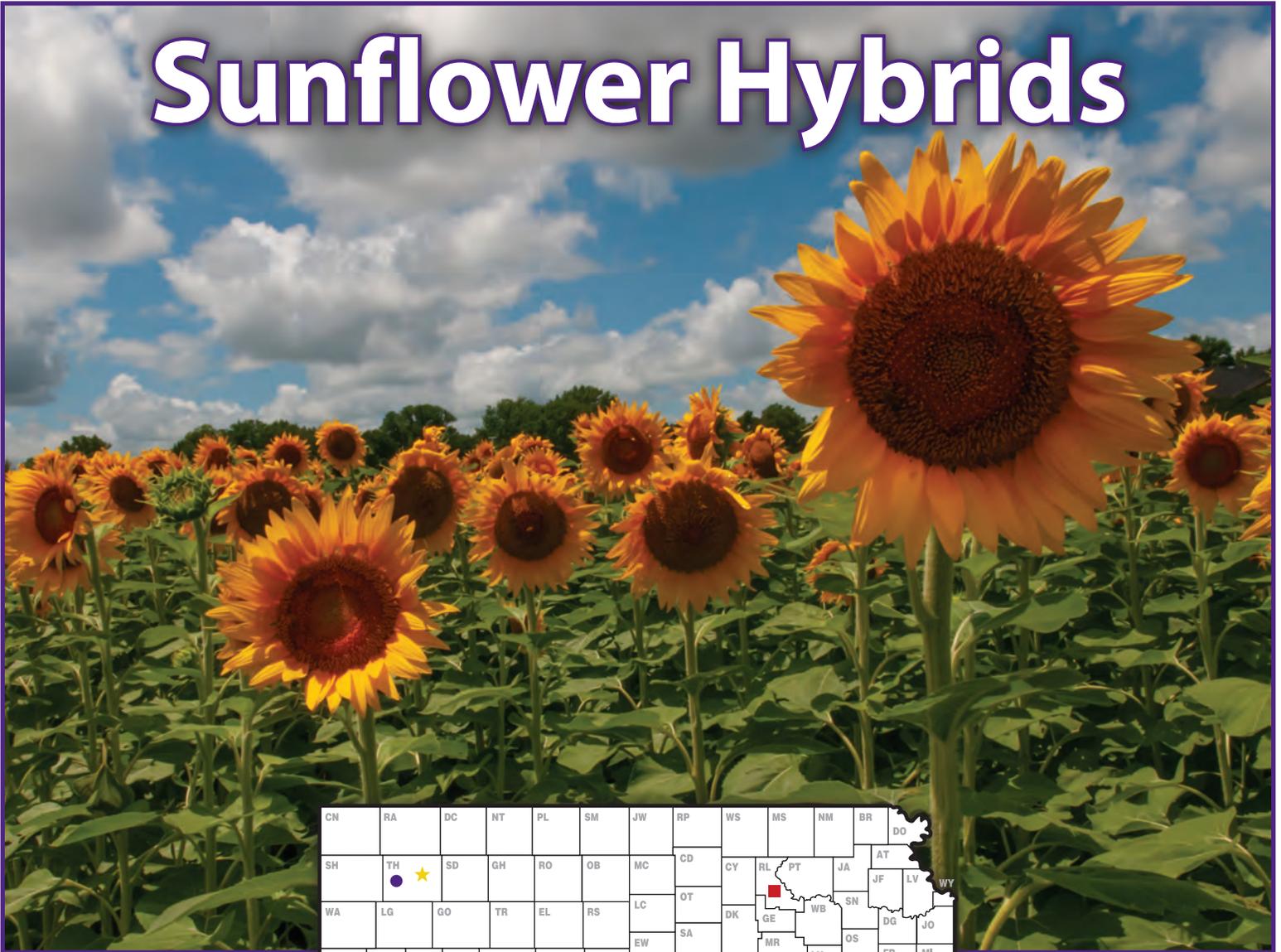


# 2021 Kansas Performance Tests with

# Sunflower Hybrids



## Report of Progress 1170



**K-STATE**  
Research and Extension

# TABLE OF CONTENTS

## INTRODUCTION

Test Objectives and Procedures, Data Interpretation, Acknowledgments.....	1
---------------------------------------------------------------------------	---

## PERFORMANCE TEST RESULTS

Table 1. Colby Irrigated, Thomas County.....	2
Table 2. Ashland Bottoms Dryland, Riley County.....	3
Table 3. Hutchinson Dryland, Reno County.....	4

## ENTRANTS AND ENTRIES IN 2021 TESTS

Table 4.....	5
Electronic Access, University Research Policy, and Duplication Policy.....	back cover

## INTRODUCTION

### Objectives and Procedures

Sunflower performance tests were conducted in 2021 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 2021 were Thomas County—irrigated and fallow; Riley County—dryland; Reno 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.

Environmental factors affecting test results and cultural practices are presented for each individual test site. Test results for 2021 and period-of-years average data are included in Tables 1 through 3. Entrants and entries in 2021 tests are listed in Table 4.

### Sunflower Pests

Historically, the sunflower head moth has been considered a "severe" pest of sunflower production. The definition of "severe pest" means that this particular insect causes economic losses every year throughout its range, unless treated. This pest has been much less problematic since 2018; however, in 2021 some areas saw head moth populations rebound. Monitoring needs to continue in 2022.

Head clipper weevils have become a little more evident in some fields around north central Kansas. These populations should be monitored in 2022 as well if there were more than the usual number of clipped heads in your fields in 2021, as they overwinter in the same area. (Jeff Whitworth, Department of Entomology)

### 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 might have no real meaning. 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 Rob Aiken, Russell Dille, Dustan Ridder, Troy Ostmeyer, Keith Thompson, Gretchen Sassenrath, and Lonnie Mengarelli for field operations is sincerely appreciated. Mary Knapp at the Weather Data Library provided climatological data.

**Table 1. Colby, Kansas Irrigated Sunflower Performance Test, Thomas County, 2019-2021**

Northwest Agricultural Research Center, Colby

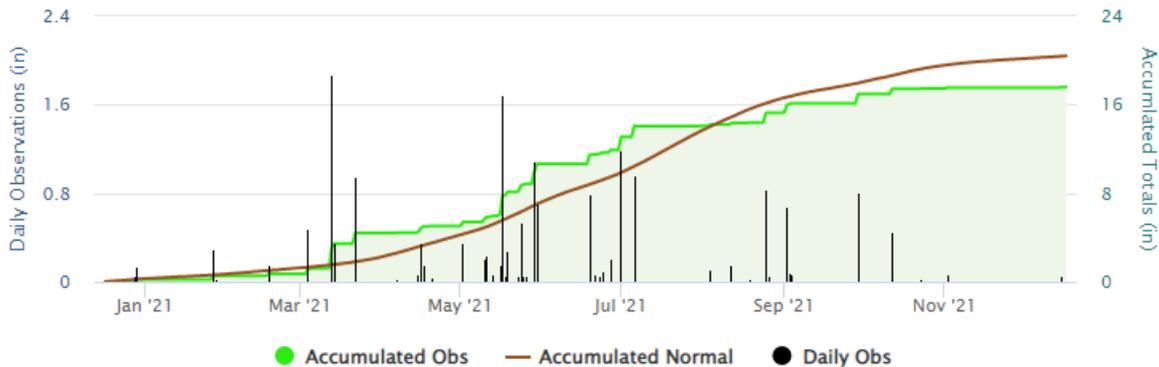
Planted: 6/15/2021

Herbicide: Spartan Charge 8.5 oz/a, Buccaneer 5 Extra 32 oz/a 3/11/2021;

Spartan Charge 5.1 oz/a, Brawl II 32 oz/a 6/19/2021

Insecticide: Brigade 2EC insecticide 6.4 oz/a 8/11/21 to control woolly bears and green clover worms

**Colby 365 Day Accumulated Precipitation**



Brand	Name	Yield (lb/a)	PAvg (%)	TW (lb/bu)	HT (in)
CROPLAN	CP455E	3564	106	30	66
CROPLAN	CP7919CL	2793	83	33	69
DYNA-GRO	H49HO19CL	3315	99	30	67
DYNA-GRO	H49NS14CL	3078	92	32	68
DYNA-GRO	XH81H52CP	3033	91	26	66
NUSEED	FALCON	3801	113	30	63
NUSEED	HORNET	3488	104	29	67
NUSEED	N4H422 CL	3375	101	29	66
NUSEED	N4H470CLP	3581	107	29	63
NUSEED	N4H521 CL	3910	117	30	65
NUSEED	NLKE04002	2926	87	29	68
	AVERAGE	3351	100	30	66
	CV (%)	11	11	3	6
	LSD (0.05)	560	16	1	5

\*Yields must differ by more than the LSD value to be considered statistically different.

**2-Year Averages (2020-2021)**

DYNA-GRO	H49HO19CL	3408	95	26	62
DYNA-GRO	H49NS14CL	3436	96	29	62
NUSEED	HORNET	3934	109	27	62
NUSEED	N4H422 CL	3702	103	25	58
NUSEED	N4H470CLP	3585	105	27	63
NUSEED	N4H521 CL	3941	110	28	61
AVERAGES		3668	3668	27	62

**Table 2. Ashland Bottoms, Kansas Sunflower Performance Test, Riley County, 2021**

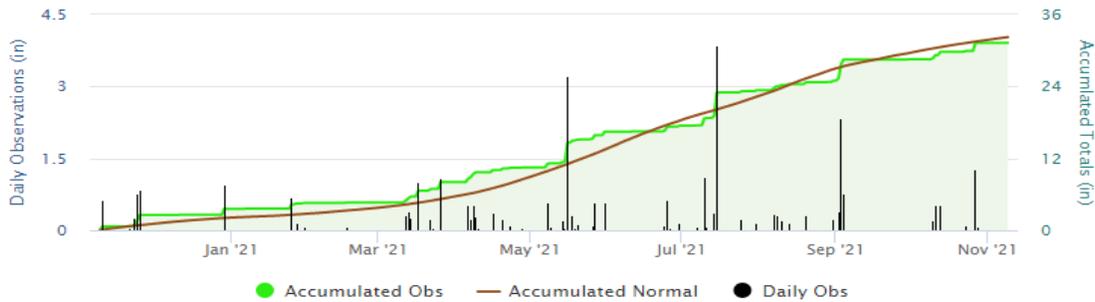
**Ashland Bottoms Research Unit, Manhattan**

Planted: 6/8/2021

100-0-0 lb/ac N, P, K

Herbicide: Brawl II; Insecticide: Warrior

**Ashland Bottoms 365 Day Accumulated Precipitation**



Brand	Name	Yield (lb/a)	PAvg (%)	TW (lb/bu)
CROPLAN	CP455E	618	53	30
CROPLAN	CP7919CL	1347	115	29
DYNA-GRO	H49HO19CL	1189	101	30
DYNA-GRO	H49NS14CL	1262	107	30
DYNA-GRO	XH81H52CP	1345	115	30
NUSEED	FALCON	1204	103	30
NUSEED	HORNET	1205	103	27
NUSEED	N4H422 CL	1586	135	30
NUSEED	N4H470CLP	795	68	31
NUSEED	N4H521 CL	1372	117	29
S&W	NSW21460	1299	111	30
S&W	SE1H81CLP	832	71	30
S&W	SF440 HO/CL	1576	134	30
S&W	SW1H63CL	804	68	30
	AVERAGE	1174	100	30
	CV (%)	13	13	--
	LSD (0.05)	230	13	--

\*Yields must differ by more than the LSD value to be considered statistically different.

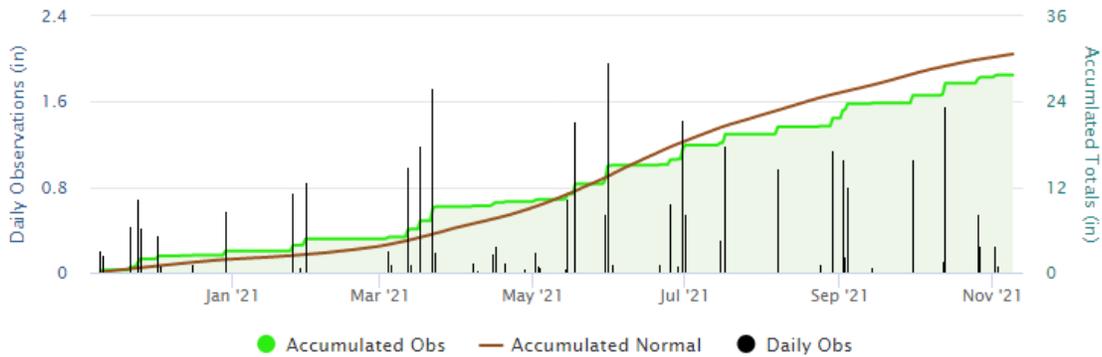
**2-Year Averages (2020-2021)**

DYNA-GRO	H49HO19CL	1196	90	30
DYNA-GRO	H49NS14CL	1663	122	30
NUSEED	HORNET	1330	100	29
NUSEED	N4H422 CL	1699	127	30
NUSEED	N4H470CLP	1012	75	30
NUSEED	N4H521 CL	1685	124	29
S&W	SF440 HO/CL	1656	124	30
AVERAGES		1463	100	30

**Table 3. Hutchinson, Kansas Dryland Sunflower Performance Test, Reno County, 2021**

South Central Experiment Field, Hutchinson  
 Planted: 6/24/2021  
 Herbicide: Brawl II  
 Insecticide: Warrior

**Hutchinson 10SW 365 Day Accumulated Precipitation**



Brand	Name	Yield (lb/a)	PAvg (%)	TW (lb/bu)
CROPLAN	CP455E	1396	114	30
CROPLAN	CP7919CL	1417	115	29
DYNA-GRO	H49HO19CL	988	81	30
DYNA-GRO	H49NS14CL	1190	97	30
DYNA-GRO	XH81H52CP	1219	99	31
NUSEED	FALCON	1069	87	31
NUSEED	HORNET	1250	102	27
NUSEED	N4H422 CL	1211	99	30
NUSEED	N4H470CLP	1336	109	31
NUSEED	N4H521 CL	1193	97	29
	AVERAGE	1227	100	30
	CV (%)	11	11	0
	LSD (0.05)	205	10	0

\*Yields must differ by more than the LSD value to be considered statistically different.

**Table 4. Entrants and Entries in the 2021 Sunflower Performance Tests**

Croplan by Winfield  
500 North 1st Street  
Vincent, IA 50594  
515-356-4521

CP455E  
CP7919CL

NuSeed  
P.O. Box 200  
Breckenridge, MN 56520  
701-630-8122

Falcon  
Hornet  
N4H422 CL  
N4H470clp  
N4H521  
NLKE04002

Dyna-Gro  
1111 U.S. HWY 62  
Ralls, TX 79357  
806-402-0463

H49HO19CL  
H49NS14CL  
XH81H52CP

S&W Seed Company  
2101 Ken Pratt Blvd, Suite 101  
Longmont, CO 80501  
720-506-9191

NSW21460  
SF440  
SW1H63CL  
SW1H81CLP

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](http://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 1170, '2021 Kansas Performance Tests with Sunflower Hybrids,' or the Kansas Crop Performance Test website, [www.agronomy.k-state.edu/services/crop-performance-tests/index.html](http://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  
Russell Dille, Manhattan  
Mary Knapp, Manhattan  
Lonnie Mengarelli, Parsons  
Troy Ostmeyer, Manhattan  
Dustan Ridder, Manhattan  
Gretchen Sassenrath, Parsons  
R. Jeff Whitworth, Manhattan

Copyright 2022 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), 2021 Kansas Performance Tests with Sunflower Hybrids, Kansas State University, February 2022. Contribution no. 22-232-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](http://www.ksre.ksu.edu)**

**Kansas State University Agricultural Experiment Station and Cooperative Extension Service**

K-State Research and Extension is an equal opportunity provider and employer.

**SRP 1170      February 2022**