

TEXAS SESAME

UNIFORM VARIETY TRIAL REPORT



2020

TEXAS SESAME VARIETY TRIALS | 2020

CONTRIBUTING AUTHORS

Reagan Noland	Assistant Professor & Extension Agronomist ¹
Qingwu Xue	Professor & Crop Physiologist ²
Calvin Trostle	Professor & Extension Agronomist ³
Russell Sutton	Assistant Reserach Scientist ⁴
David Drake	Integrated Pest Management Agent ⁴
Emi Kimura	Assistant Professor & Extension Agronomist ⁵
Josh McGinty	Assistant Professor & Extension Agronomist ⁶

Beka Pustejovsky	Extension Assistant ³
Jonathan Ramirez	Extension Assistant ⁵
Stewart Hohensee	Extension Associate ¹
Morgan Kleibrink	Graduate Research Assistant ¹

1. Texas A&M AgriLife Extension, San Angelo, TX
2. Texas A&M AgriLife Research, Amarillo, TX
3. Texas A&M AgriLife Extension, Lubbock, TX
4. Texas A&M AgriLife Research & Extension, Commerce, TX
5. Texas A&M AgriLife Extension, Vernon, TX
6. Texas A&M AgriLife Extension, Corpus Christi, TX

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ADDITIONAL INFORMATION ON SESAME PRODUCTION

<https://lubbock.tamu.edu/sesame/>

TABLE OF CONTENTS

Acknowledgements	2
2020 season and trial overview	4
Map of trial sites	5
Site information	6
Entries.....	7
Variety performance across locations.....	8
Variety performance by location	9

2020 OVERVIEW

Texas A&M AgriLife Research and Extension personnel in the Department of Soil and Crop Sciences coordinated eleven small-plot, replicated sesame variety trials across Texas in 2020 (Fig. 1, Table 1). Plots in all trials were four rows wide, with all measurements collected from the center two rows. The seeding rate in all trials was 1 lb ac⁻¹.

Regions represented received near- or below-normal rainfall in April and May, followed by an extremely dry June, and generally drier-than-normal July and August (Figure 2). Successful and uniform establishment was challenging across the state due to environmental conditions, resulting in failure of several sites. At one site (Lohn), the area harvested per plot was reduced to avoid areas of poor emergence and provide objective comparison among varieties.

Sesame leafroller infestation occurred at most sites to some degree. Plots were sprayed with appropriate pesticides (such as Prevathon) at labeled rates when worms reached threshold. Despite multiple control efforts, this pest noticeably influenced yield at the irrigated site in Wall. Average yields across sites ranged from 194 lbs ac⁻¹ (Wall, irrigated) to 677 lbs ac⁻¹ (Bushland, irrigated). Overall, the results from these trials provide insight to variety performance and potential in a very dry and challenging year.

Replication and statistical analyses were used to account for variability within test sites and identify effects that can be confidently attributed to the genetic differences among varieties rather than inconsistent conditions or other sources of error. Differences were declared at $\alpha = 0.10$ (or $P < 0.10$), meaning we accept a 10% chance of declaring a false positive, and maintain a 90% chance that declared differences are true and due to the treatments. When P is greater than 0.10, no significant differences exist for that response. Significant P values are indicated by bold font in the results tables. The CV (coefficient of variation) presented in the results table for each site indicates the range of variability in the raw data. A lower CV is better and indicates a more uniform trial. The LSD (least significant difference) is the margin of variation within groups that are statistically similar, so if $P < 0.10$ and the difference between two values is greater than the LSD, then those values are statistically different. In the results for each site, LSD values are only shown if significant differences exist. Otherwise, non-significance is indicated as “n.s.”

Table 1. Trial locations and details for 2020 Texas Sesame UVT.

County	Water Regime	Planting date	Row spacing (in)	Plot length (ft)	Trial Status
McCulloch	Dryland	6/4	40	40	Harvested
Nueces	Dryland	4/22	38	40	Failed
Tom Green	Irrigated	5/20	40	40	Harvested
Tom Green	Dryland	5/28 (6/29)	40	40	Failed
Wilbarger	Irrigated	6/12	40	40	Failed
Wilbarger	Dryland	6/12	40	40	Failed
Lubbock	Irrigated	6/12	40	21	Harvested
Lubbock	Dryland	6/12	40	21	Failed
Potter	Irrigated	6/25	30	30	Harvested
Potter	Dryland	6/25	30	30	Harvested
Hunt	Dryland		30	30	Partial*

*Only one replication was harvested due to inconsistent establishment in the remaining replications. Data are included in combined analyses across locations, but are not analyzed or presented alone due to insufficient replication.

Table 2. 2020 Texas sesame variety trial entries

Entry	Status	Brand
E-S0003	Released variety	Equinom
E-S0008	Released variety	
D-1020	Experimental line	
D-1021	Experimental line	
D-1022	Experimental line	
D-1023	Experimental line	
D-2017	Experimental line	
D-2018	Experimental line	
D-2019	Experimental line	
RDVCON1	Experimental line	

VARIETY PERFORMANCE ACROSS LOCATIONS

Table 5. Sesame yields by variety among all sites combined, and among dryland and irrigated sites combined.

Variety	All sites	Dryland	Irrigated
	----- lbs ac ⁻¹ -----		
D-1021	431 a*	373 a	496 a-c
D-1020	420 a	317 ab	546 a
D-2019	412 ab	327 ab	513 a-c
RDVCON1	403 ab	304 b	524 ab
E-S0008	369 bc	285 b	468 bc
D-2017	368 bc	296 b	453 cd
D-1022	353 cd	314 ab	395 d
D-1023	343 cd	289 b	406 d
D-2018	318 d	213 c	458 cd
E-S0003	255 e	223 c	289 e

*Within columns, means with the same letter are not statistically different ($\alpha = 0.1$)

VARIETY PERFORMANCE BY LOCATION

Table 5. Sesame yields by variety among all sites combined, and among dryland and irrigated sites combined.

	Irrigated			Dryland	
	Potter	Lubbock	Tom Green	Potter	McCulloch
	----- lbs ac ⁻¹ -----				
D-1020	964 a	664 bc	220 b	769 ab	234 ab
D-1021	793 ab	814 a	151 cd	795 a	288 a
RDVCON1	761 b	791 ab	208 b	610 c-e	194 b-d
D-2019	720 bc	607 c	292 a	557 d-f	277 a
E-S0008	694 b-d	587 c	231 ab	495 ef	224 ab
D-2018	678 b-d	658 bc	190 bc	628 b-d	106 e
D-2017	639 b-d	625 c	212 b	603 de	167 cd
D-1022	588 cd	702 a-c	119 d	747 a-c	227 ab
D-1023	574 d	571 cd	184 bc	622 c-e	212 bc
E-S0003	361 e	461 d	130 d	468 f	157 d

*Within columns, means with the same letter are not statistically different ($\alpha = 0.1$)

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Department of Soil and Crop Sciences
soilcrop.tamu.edu