

TITLE:

Sesame Variety Trial, AGCARES, 2003-2004

AUTHOR:

Calvin Trostle, Texas Cooperative Extension—Lubbock, c-trostle@tamu.edu, (806) 746-6101;
Ray Langham, Sesaco Corp., San Antonio, TX, rlangham@texas.net, (800) 737-2260

METHODS AND PROCEDURES:

Soil Type:	Amarillo fine sandy loam
Planting:	June 23, 2004
Previous Crop:	Cotton
Seeding Rate:	~35 seeds per foot, or 2.5 lbs./A using 'low rate' sorghum disc in JD air-vacuum planter ('Lo' range, DriveR 16, DriveN 28)
Plot Set-up:	Sox replicated plots, 2-40" rows X 120'
Harvest Area:	6 plots, 1 row each, 9' 7"
Fertilizer:	None
Herbicide:	None
Insecticide:	None
Rainfall:	See summary in AGCARES report; 1.5" for June prior to planting; 10.6" from June 23 to October 1 (period of physiological growth); crop weathered an additional 8" of rain before harvest
Date Harvested:	December 21, 2004

PURPOSE OF THIS WORK:

Small acreages of sesame production in the Texas South Plains have existed for many years, but historical production has sometimes been limited by the late maturity of the varieties as well as shattering of seed from the capsules. Recent varietal improvements from Sesaco Corp., Paris, TX, have both shortened maturity and reduced shattering.

Sesame is of interest because it is, along with guar perhaps the most drought tolerant and heat tolerant crops that may be grown on the South Plains. Sesame is also insect resistant. The primary production limitation for sesame for many producers is the lack of any labeled herbicide. Producers considering sesame should note that sesame is not for weedy ground.

This trial tests the current recommended sesame variety for the Texas South Plains, S-26, as a newer variety S-28, and two experimental lines for adaptability and yield in West Texas.

RESULTS AND DISCUSSION:

The currently recommended commercial sesame variety for West Texas, S-26, yielded at 618 lbs./A although there was no statistical difference among yields of the four entries. Among three varieties with a two-year yield average, S-26 was first although again there was no statistical difference. When excess shattering losses are factored in due to late rain-delayed harvest (~1 month), 2004 yields increased 9-14% (including over 100 lbs./A for XF6H).

Additional plant characteristics were measured to help evaluate sesame growth (not reported here). Due to the ample rain in 2004, plants were about 7" taller in 2003, however, actual harvest yields changed

little from 2003 (yields corrected for shattering were significantly higher, however, in 2004). We believe season long cool, cloudy weather and lower seasonal accumulated heat units restricted growth. Indirectly, this aspect demonstrates that sesame is in fact probably more advantageous relative to other crops in dry years as long as the stand can be established.

Agronomically, there were some key comparisons of interest when correlations were determined. Based on individual harvest areas, there was only a slight positive correlation ($r = 0.12$) between yield and plants per acre. We did determine, however, that as plant population declined, mainstem node number ($r = -0.45$) and branches per plant ($r = -0.54$) plants compensated. However, only additional nodes per plant appeared to contribute to yield. Advice on target seeding rates and subsequent plant populations for sesame sometimes leans toward maintaining a higher seeding rate so that the small shallow-planted sesame seeds can work together to push against possible crusts at emergence. Emergence observations in this trial did not indicate difficulty with stand establishment.

Variety	Plants/acre	Plant Height (in.)	Harvest Yield (lbs./A)	Average Shattering (%)	Shatter Corrected Yield (lbs./A)	2004 Gross inc. without adjustments for quality	2-Year Avg. Harvest Yield (lbs./A)
S-26	139,400 c	49.6 a	618 a	9.1 b	681 a	\$170	632 a
S-28	262,900 a	50.5 a	621 a	10.0 b	691 a	\$173	614 a
X 132	203,800 b	44.1 b	546 a	12.5 ab	622 a	\$156	556 a
X6FH	226,500 ab	45.5 b	641 a	14.8 a	756 a	\$189	---
Average	208,100	47.4	607	11.6	687		599
Coeff. Var. (CV), %	31.9	9.2	14.7	38.1	15.2		14.7

By Variety

F test statistic	6.12	17.66	1.36	2.45	1.84		2.2
P-Value (P)	0.004	<0.0001	0.283	0.094	0.172		0.155
PLSD [^] (0.10)	51,100	1.7	NS	4.0	NS		NS

[^] Fisher's Protected Least Significant Difference (numbers in the same column followed by the same letter are not significantly different at the 90% confidence level).

Economic considerations: Crop value should be based on 2003 contract prices of \$0.22/lb. for a first-time grower and \$0.23/lb. for a repeat grower. Sesame pricing also includes premiums and deductions based on test weight, color, foreign matter, and breakage. As long as a combine is set properly, producers are probably more likely to receive premiums rather than discounts. Approximate gross value of this crop at the average per acre yield was \$131/A. Input costs were minimal for one tillage pass, planting, one cultivation, hoeing, and combining. Contract growers receive assistance for trucking costs set at the time of contracting.

For more information about sesame check with Calvin Trostle, the Texas A&M—Lubbock website at <http://lubbock.tamu.edu>, or call Sesaco Corporation, (800) 737-2260.