Sesame for West Texas & Southwest OK

(Also Planting Dates for South TX)

Calvin Trostle, Ph.D.
Extension Agronomy, TAMU Dept. of Soil & Crop Sciences
Texas A&M AgriLife-Lubbock
(806) 746-6101, ctrostle@ag.tamu.edu
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For additional information in Texas, http://lubbock.tamu.edu/sesame

TEXAS A&M AGRILIFE EXTENSION

Sesame & Wild Hogs

- Based on several observations across Texas:
- Charles Stichler, former AgriLife Extension agronomist, Uvalde: "The only damage comes from hogs rooting up plants. Hogs do not eat sesame plants. Now—having said that—deer will munch on a few plants if they are very hungry but will not eat the dry capsules just before harvest. Hogs will walk through sesame fields, but not eat it. Here in the brush country sesame is about their only choice unless they high fence."
- Jerry Riney, former Sesaco: "Yes, most growers in the Rolling/South Plains area grow sesame as a revenue source that has low risk to hog damage. Incidents of hog damage to sesame mainly come from growers not harvesting in a reasonable amount of time from when the crop is ready."
- Dr. David Drake, former extension agronomist, San Angelo: "Hogs have walked through my trials almost all season long, but never damaged it, and they never fed on it."

TEXAS A&M AGRILIFE EXTENSION

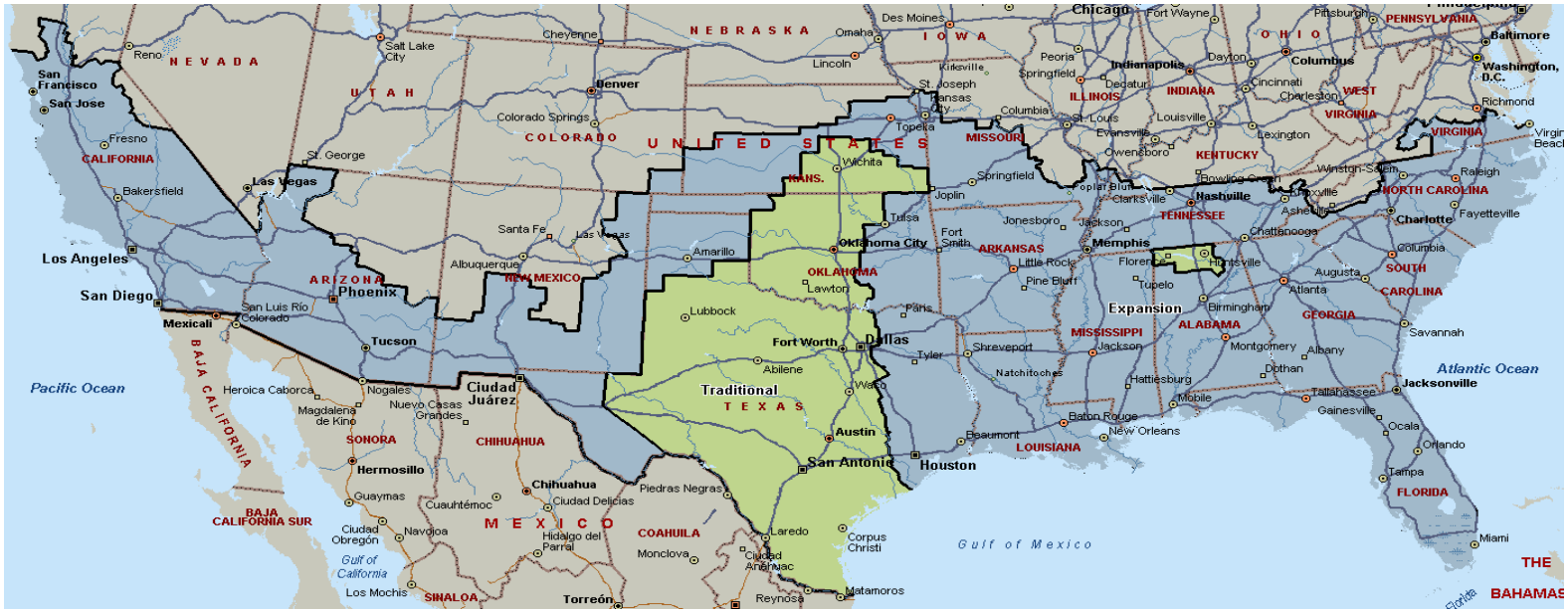
Region of Application for this Info.

- The information here is generally for the Texas South Plains, Texas Rolling Plains and toward the Concho Valley, and southwest Oklahoma
- In Texas it is anticipated that sesame production closer to I-35 in north and central will lead to increased disease issues.
- South Texas planting date information is mentioned later in the document.

Where is Sesame Grown?

Counties for Crop Insurance…

See slide #7



Sesame & Active Companies/Contractors

All have non-shattering sesame varieties.

- Sesaco Corp., www.Sesaco.com, headquartered in Austin, TX, corporate phone, (512) 389-0759.
- Equi-nom, www.equi-nom.com, a genetics company, from Israel. U.S. corporate headquarters, Indianapolis, IN, corporate phone, (833) 373-7263.
  - Sesame seed for planting. Equi-nom with individuals, elevators, businesses to use EQ sesame seeds in offering contracts to growers.
- Sesajal, www.Sesajal.com, major operations in Mexico, expanding to U.S., with corporate office in San Diego, Calif., (760) 439-8900.

Sesame Contacts—Sesaco

- See five regional reps & grower inquiries—e-mail & cell phone contacts at https://sesaco.com/production-team;
  - Be sure to ask for additional Sesaco sesame production resources.
- Sesaco research team, including general manager and weed control expert (Dr. Connor Ferguson), https://sesaco.com/research-team
- In addition to Austin corporate:
  - Grain processing: Hobart, OK
  - Tahini manufacture: Taylor, Michigan
- Delivery locations in recent years included: Texas--Lower Rio Grande Valley, Knippa, Tynan, Miles, Stamford; Oklahoma—Hobart & Frederick.
- Breeding, contracting, and processing in Texas for over 40 years, acreage over 80,000 in some recent years.

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Sesame Contacts—Equi-nom

- Offers new multi-capsule (per node) non-shattering varieties. Breeding selections and variety testing in Texas since 2017.
- Key contacts:
  - Production & contract suggestions, Joe Guzman, Lubbock, TX, joeg@equi-nom.com, M 806.241.6666.
  - Sesame product manager Nimrod Bardanov, nimrodb@equi-nom.com, +972 54 633 6574
  - Business development manager, Chris Schupp, chriss@equi-nom.com, (515) 669-5984

Sesame Contacts—Sesajal

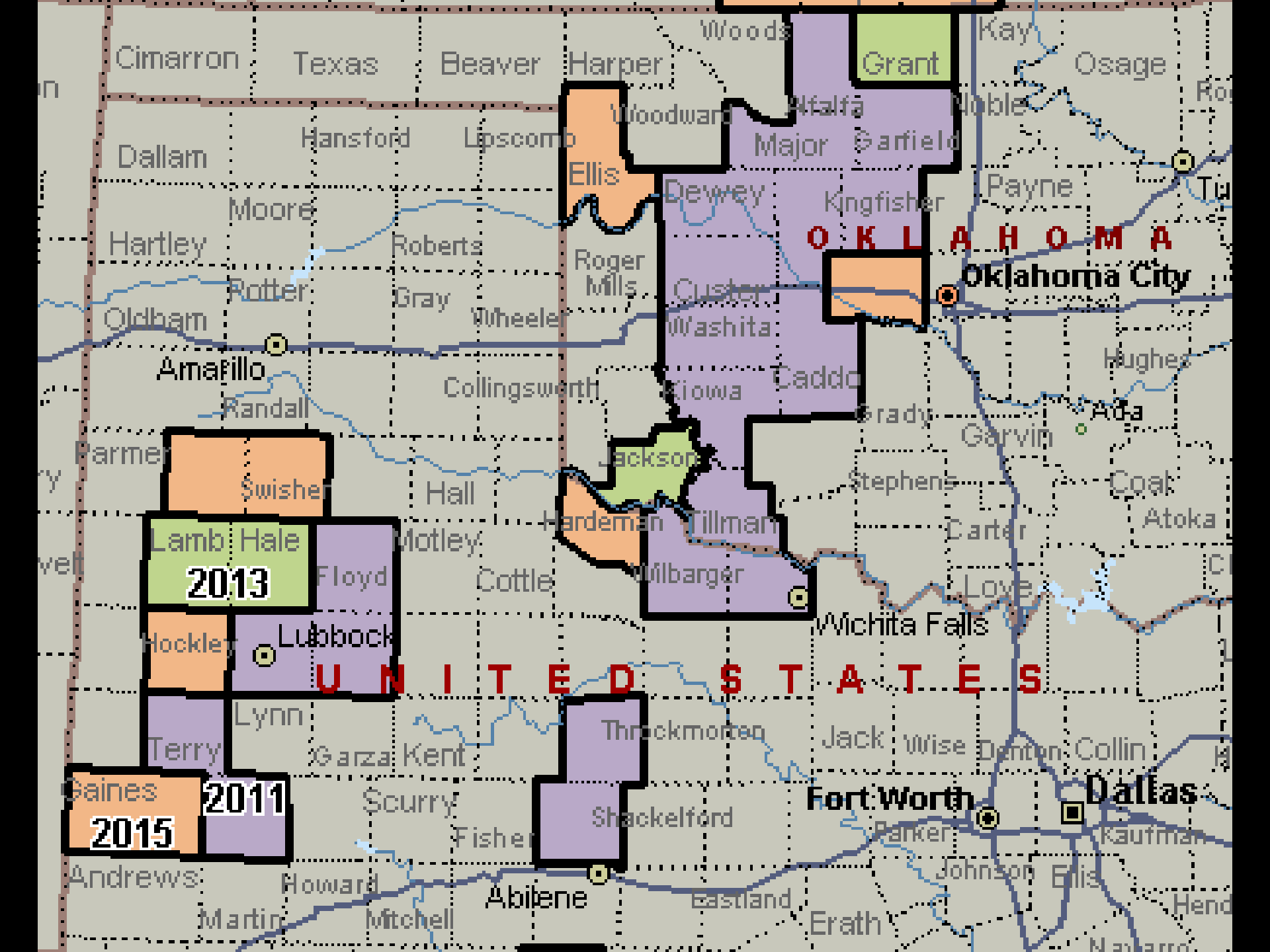
- Field contact is agronomist Fernando Garcia, San Antonio, TX, fernando.garcia@sesajal.com, (210) 306-0998
- Initial Texas contracting in 2021.
  - Inquire on delivery locations and options.
- Planned sesame storage and processing facility is now (February 2022) under construction at Hondo, Texas (west of San Antonio, TX).

Sesame Contracts

- Always call or email contractor for timely pricing information and delivery options.
- February 2022 contract prices are $0.55/lb. for Sesaco and most contracts using Equi-nom seed; $0.56/lb. from Sesajal. I believe these are record highs.
- Additional considerations:
  - Are these contracts waived if you have storm or drought losses? For lesser acreage crops like sesame they usually are ('act of god').
  - Is the price the same for dryland and irrigated acres?
  - Usually there are small premiums (rather than discounts) for good color, low broken seed, clean grain, etc.
  - Are there provisions or prohibitions in using glyphosate (Roundup) as a harvest aid (more common in South Texas)??

Sesame for West Texas/SW Oklahoma

- Contractor interest is in the full-season crop
  - Seeking full yield potential with longer season crop (in contrast to late-planted crop or planted after cotton failure)
- Rotation benefits, no cotton root rot effects, little to no hog damage; deer pass through?
- Input costs will remain reduced compared to other crops
- Sesame is not for your weedy ground!


Cimarron
Texas
Beaver
Harper
Woods
Grant
Kay
Osage
Woodward
Alfalfa
Noble
Major
Garfield
Dallam
Hansford
Lipscomb
Ellis
Dewey
Kingfisher
Payne
Moore
Hartley
Roberts
Roger Mills
Custer
O K L A H O M A
Oklahoma City
Potter
Gray
Wheeler
Oldham
Washita
Amarillo
Collingsworth
Kiowa
Caddo
Hughes
Randall
Grady
Ada
Garvin
Parmer
Jackson
Swisher
Hall
Stephens
Coal
Hardeman
Tillman
Carter
Atoka
Lamb
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Motley
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Floyd
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Wilbarger
Love
Wichita Falls
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Lynn
Throckmorton
Jack
Wise
Denton
Collin
Terry
Garza
Kent
Saines
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Scurry
Fort Worth
Dallas
Shackelford
Fisher
Parker
Kaufman
Andrews
Howard
Johnson
Ellis
Abilene
Eastland
Martin
Mitchell
Erath

Sesame & Crop Insurance

- Program crop insurance under a renewing pilot program is available in many Texas & Oklahoma counties including:
- Texas:
  - High Plains: Gaines, Dawson, Terry, Hockley, Lubbock, Crosby, Lamb, Hale, Floyd, Castro, Swisher
  - Rolling Plains: Hardeman, Haskell, Jones, Wilbarger, Wichita
  - Concho Valley: Tom Green, Runnels
  - South Texas: Uvalde, Medina, Zavala, Colorado, Wharton, Matagorda, Live Oak, Bee, Refugio, Nueces, Jim Wells, Kleberg, San Patricio, Willacy, Cameron, Hidalgo
- Oklahoma: Alfalfa, Blaine, Caddo, Canadian, Custer, Dewey, Ellis, Garfield, Grant, Jackson, Kingfisher, Kiowa, Major, Tillman, Washita

Sesame & Crop Insurance

- Insurance now available in just about any TX & OK county via written agreement (if program status is absent
- Must use a non-shattering variety

Sesame in General

- Not for your weedy ground—five labeled herbicide active ingredients (apart from burndown chemicals)
- Shatter-resistant varieties have been developed for combine harvest
  - "Non-dehiscent" (no longer only in the U.S.)
- Very drought tolerant and insect resistant

Sesame, the Plant

- This will depend on variety: Physiological maturity, 95-110 days after planting, dries down in 120-150 days to harvest; increased heat units accelerate maturity
- Drought tolerant, heat tolerant, may respond less to rain & irrigation compared to other crops (but this is a credit to sesame)
  - High Plains tests show that with an extra 6” irrigation or rain, yield response is moderate (increase ~20-33%), but overall water use efficiency (WUE) is good

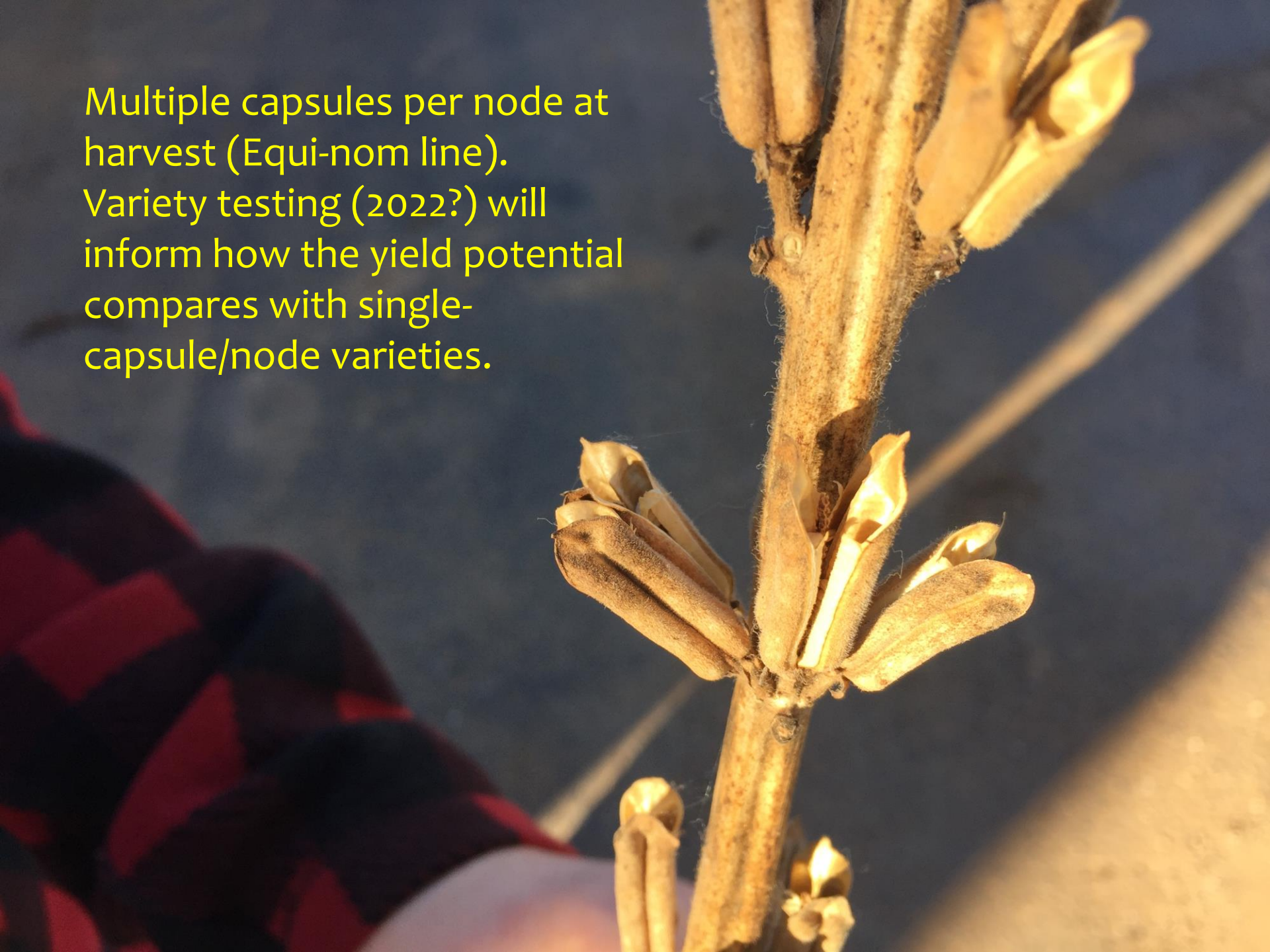
Sesame, the Plant

- Broadleaf summer crop, self-defoliating at maturity
- Can reach 6’ tall with some irrigation
- Begins flowering in 35 to 45 days—slow growing and not competitive with weeds at this point—after planting
- Major flowering ceases about 75-85 days after planting
  - Some indeterminacy remains in the crop
- Average daily soil planting temperature, **70°**
  - Warmer than just about any other crop
  - Sesaco staff recommends that night-time air temperatures not drop below 68° F (This is no an issue in virtually all of Texas & Oklahoma except the most northwest regions.)

Sesame

Different sesame plant types, some with branching.

Above: multiple capsules per node (Equi-nom lines)


Multiple capsules per node at harvest (Equi-nom line). Variety testing (2022?) will inform how the yield potential compares with single-capsule/node varieties.

High/Rolling Plains

- Planted mostly in mid-May to July 1, including after failed cotton (check your herbicide rotations from cotton)
  - SW Oklahoma/TX Rolling Plains, end of planting July 1 vs. mid-July (latter is less optimal)
  - High Plains, recommend planting by ~June 20 north of Lubbock to June 25 south of Lubbock (maturation slows considerably in cool weather)
  - North Texas, High Plains, Oklahoma experience suggests earlier May planting does better vs. June
- Minimal input crop (but don't neglect N fertility needs)
- All kinds of planting conditions for stubble, seeding equipment
- "The hardest thing about growing sesame is getting it planted right."

SW Okla & Texas RP Production Tips

- Plowing too deep dries out the field and can result in mediocre stands
- Need firm seed bed for this small seed
- Slow growth in first 6 weeks or so, grass problems treated with clethodim (Select products) or especially sethoxydim (Poast products)
- Thin fields often look like candidates for terminating, but stands when left in place especially if uniform, often surprise
- Sesame at any time is susceptible to glyphosate drift, also Ignite, etc.
- Any combine works well—pickup reels often used, but batt reels might be better; all-crop headers can work, too

Planting I

- Early planted sesame normally gives the best yields
- Early planting: Late May in the South Plains, mid-May in the Rolling Plains & SW Oklahoma
- Terminates on its own (however, there is now increased use of glyphosate)
- Must make physiological maturity prior to frost for optimum yield
  - Trostle observations in the Lubbock region affirm this observation. Some sesame is planted into early July, but should have been in the ground 10-14 days sooner to minimize risk of incomplete maturity.

Planting II

- Slow down!!! to achieve better stands, more uniform seed depth.
- Seed is very small, has less push than cotton, hence problems with crust
  - That is why seeding rates are higher than may be actually needed to grow the crop
- Consult your contractor for variety recommendations

Seeding

Seedlings

Above: sesame seedling appears to be trying to emerge from about 1” depth, which is about the limit of ready sesame emergence,

Seeding Rates

- Generally 2.5 to 4.5 lbs./A, target 3 lbs./A. This may vary by contractor preference.
  - Lower rates for multi-capsule Equi-nom lines
  - Over 30 seeds per foot
- Seeding rates can reduce by 1/4 to 1/3 when drilling or planting into good soil conditions
- Sesame adjusts to the population if initially too thin or too thick
- Little difference in yield across 3 to 8 plants per foot (Sesaco experience).

Planting in Southerly Texas Locations

- Sesame principles for planting in the Lower Rio Grande Valley, Wintergarden area (e.g., Uvalde), and Coastal Bend like other areas of Texas
- In general sesame would like to be planted at soil temperatures about 5˚ F warmer than cotton:
  - LRGV, beginning mid-March
  - Coastal Bend, beginning around April 1
  - Wintergarden, beginning around mid-April
- Planting too early and risking a poor stand is not worth it. Regular early plantings are generally better than later plantings, which if late enough may then encounter tropical storm conditions on maturing crops or sesame ready for harvest.

The Vulnerable Stage

Young sesame does not compete well with weeds. Here farmer has cultivated and moved soil to the base of the plant to possibly cover small in-row seeds.

What Sesame Must Do Nearing and at Maturity

- The plant stops flowering
- Mature without capsule opening
- Shed leaves
- Dry down as quickly as possible
- Hold seed even in adverse weather
- Release seed in combine easily

Sesame Crop Description

Similar growth habit to cotton & soybean

- 3-5 feet tall
- Varieties can be single stemmed or branched
- Flowering starts about day 35 to 45
- The fruiting form is called a capsule
- Physiological maturity (PM) normally occurs at day 95-110
- Dries down at 120-150 days
- A killing freeze will terminate the crop and typically dry down the plants in 7 to 10 days.

Consult Contractor for N Recommendations

- Dryland growers may forego N
  - Be careful about this: if you have residual N, good; if not, ensure you are not taking an overall “cheap” management approach
- Typical fertility program would target 30-60 lbs. of N per acre for typical yields ~1,000 lbs./A yield (adjusted for soil moisture and related yield potential)
- I do not know of a soil test lab, including Texas A&M, that has a research-based nutrient response curve for N/P/K for sesame.
  - Texas A&M suggests a general amount of 50 lbs. N (actual) minus soil test N = fertilizer N to apply.

Irrigation

- Very drought tolerant
  - Among most drought tolerant crops in West Texas & Southwest OK (others would be hybrid pearl millet, guar, safflower)
  - Rule of thumb: uses half the water of cotton, perhaps 2two-thirds of the water of grain sorghum

- Limited irrigation is good; 4-6 inches offers good return on water use efficiency (WUE)

Economics I

- Because input costs can be minimal, net return is often favorable compared to other crops
- Dryland, budget for ~500 lbs./A (an appropriately conservative yield goal). This is most likely appropriate for the Texas High Plains and Rolling Plains. As one moves to more moist regions, then the 'dryland' number increases to as much as 1,000 lbs./A
- Irrigated, ~3" then ~100 lbs. per inch of irrigation, or typically ~1,000 lbs./A for most limited irrigators
  - Not a crop to irrigate heavily

Economics II

- AgriLife Crop Budgets for Sesame, 2022
- Sesame budgets are posted to date (early Feb., 2022) for the Lubbock South Plains region. Update the price. Other regions may eventually list budgets (there are 2021 budgets for Districts 7 & 11). See https://agecoext.tamu.edu/resources/crop-livestock-budgets/budgets-by-extension-district/
- Texas South Plains (District 2, Lubbock), download the Excel spread sheet at http://southplainsprofit.tamu.edu (last updated in 2020, read along the bottom for 'Tabs' for irrigated and dryland sesame). This gives you an actual file you can plug in numbers of your choice. You can find current rates from the 2022 budgets above and plug them in here.

Sesame & Weed Control I

Pre-plant/Pre-emerge

- Several pre-plant contact/burndown options like Roundup, even ET (pyraflufen-ethyl)
- Dual Magnum (*s*-metolachlor), 83.7% a.i.—changes weed control perspective for sesame (TX, OK, KS, AL; others?)
  - Sesaco's weed researcher Dr. Connor Ferguson, cferguson@sesaco.net, is tracking observations that suggest generic metolachlors (not the 's' version) might have more injury potential.
  - 0.67 to 1.33 pints/A based on soil type—Sesaco staff have addressed this issue for years. They caution about possible Dual injury at higher rates; perhaps limit Dual to 1 pint per acre at most
  - 1) Broadcast pre-emerge after planting but before emergence, 2) Irrigate lightly (0.5") if needed to activate (7-10 days if no rain), but preferably not before sesame emergence, 3) No incorporation
  - Access this 24(c), or indemnified, label through Syngenta's 'Farm Assist' website, www.farmassist.com by registering. You must agree to a statement saying Syngenta does not recommend this practice, and that you bear the risk in order to access the label.

Sesame & Weed Control II

Pre-emerge

- Clomazone (active ingredient). This chemical is available commercially as 'Caravel' (Sipcam Agro) and 'Vopak' (ADAMA).
- Application after planting but before emergence.
- Other clomazone products are not labeled, and the % of a.i. is not exactly the same so there might be a difference in formulation that has not been researched.
- Dr. Peter Dotray, Texas A&M AgriLife Lubbock, pete.dotray@tamu.edu, notes that clomazone is very weak on the dominant problem weed Palmer ameranth/carelessweed/pigweed in much of the Texas production region for sesame. Hence clomazone could have a better fit if paired with another herbicide.

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Sesame & Weed Control III

Pre-plant/Pre-emerge

- A "Yellow" herbicide: Sonalan HFP (Gowan; a.i. ethalfluralin, 35.4%): Sesame is listed in the Oilseeds section of the label which provides a soil texture-based rate (1.5 pints/A, coarse, to 2.5 pints/A, fine), timing not mentioned (Sesaco recommends at least 45 days before planting).
- Likewise Treflan, a.i. trifluralin) is listed in a footnote on the Treflan HFP (Dow) label, but no details. Sesame is on the label for Gowan's Trifluralin HFP and Albaugh's Trifluralin 4EC (both 1.0 pint per acres regardless of soil type). (Sesaco also notes that it would need application at least 45 days before planting.)
- Forthcoming potential label: a couple chemicals are being examined for possible labeling

Sesame & Weed Control IV

Over-the-top Grass Control

- Select Max (a.i. clethodim, 12.6%). First 30 days or after flowering. Sesaco notes that some injury with clethodim may occur. In 2009-2011 timing studies, Select Max® prevented capsule formation when sprayed during flowering. Some varieties are more susceptible than others. Clethodim has shown to be effective against Texas Panicum. See more at:
  - http://sesaco.publishpath.com/sesame-production-and-weed-control
  - Annual grasses, 9-16 oz./A; perennial grasses, 12-16 oz./A; use 0.25% NIS
- Poast (a.i. sethoxydim, 18.0%): up to 2.5 pints/A (max 5.0 pints/year), 60 day PHI; UAN or AMS for certain grasses; no statement on timing of application relative to bloom (e.g., do not apply during bloom?). Sethoxydim does not appear to injure sesame (safer than clethodim). Sesame is listed under "Rapeseed subgroup" on the label.

Diuron?

- From Charles Stichler in 2019: "In research settings good herbicide for sesame - but the best use is wait until the sesame is in the 3 - 5th leaf stage. The sesame has a response - but grows out of it."
- Diuron has progressed in the labeling process: stay in touch with your contractor or a Texas A&M AgriLife weed scientist to learn if and when diuron becomes legal on sesame.

Sesame & Herbicide Rotation

- If planting after wheat, watch out for wheat herbicide residual (Amber, Glean, Ally, Finesse, Assert)

- For rotation, if cotton is not on the label for rotation within 9 to 12 months, then don't try sesame

Texas A&M AgriLife Extension

Weed Scientists for Assistance with Sesame

- Texas High & Rolling Plains—Dr. Pete Dotray, Lubbock, (806) 746-6101, pdotray@ag.tamu.edu
- Central Texas—Dr. Scott Nolte, College Station, (979) 845-4880, scott.nolte@ag.tamu.edu
- South Texas—Dr. Josh McGinty, Corpus Christi, (361) 265-9203, joshua.mcginty@ag.tamu.edu

- For sesame weed control in Oklahoma—Dr. Todd Baughman, Oklahoma State Univ. extension, Ardmore, (580) 224-0623, todd.baughman@okstate.edu

TEXAS A&M AGRILIFE EXTENSION

Sources of Label Information

- Labels for herbicides, insecticides, fungicides, seed treatments, growth regulators, desiccants, etc.—access through **http://www.cdms.net**,
  - A) Click 'Label Database +' enter your known product name
  - B) Under the Label Database + menu, select "CDMS Advanced Search" Here you can either search for multiple labels containing the same ingredient, OR you can search for category labels (herbicide, insecticides, etc.) for a specific. This will provide you with other products that have the same ingredient OR a list of products labeled for that crop (you have to click each one to find what active ingredient it might be). You can get labels, supplemental labels, and even a simple summary of rates.
  - C) Under Label Database + menu choose "Label Search Premier" which functions similar to (B) above though you have to register (it is free). When the list of all chemicals appear it also lists at the same time the active ingredient.

Sesame and Pests

- Historically in Texas most sesame has had few issues with insects or plant diseases. Rotation with sesame has helped suppress nematode (southern? root knot?) issues in cotton.
- AgriLife Extension faculty for sesame plant diseases:
  - Extension plant pathologist Dr. Kim Cochran, Uvalde Research & Extension Center, researches plant diseases in sesame. (830) 988-6151, Kimberly.Cochran@ag.tamu.edu
- AgriLife Extension faculty for sesame insects:
  - Danielle Sekula, Integrated Pest Management Extension agent, Lower Rio Grande Valley, M (956) 369-9779, Danielle.Sekula@ag.tamu.edu
  - Dr. Noel Troxclair, Uvalde Ag. Extension agent & former regional Extension entomologist, (830) 591-9046, noel.troxclair@ag.tamu.edu
  - Dr. Pat Porter, Extension entomologist, Lubbock Research & Extension Center, (806) 746-6101, pporter@ag.tamu.edu

TEXAS A&M AGRILIFE EXTENSION

Sesame—Leafroller/Sesame Webworm

- Leafroller/sesame webworm/sesame capsule borer
- This pest was a major issue seriously damaging much Texas sesame in 2020. Due to lack of prior experience with the pest, much damage occurred before the problem was recognized.
- There are no established treatment thresholds, but low levels are probably economic.
- Suggested control measure are available
  - See the Texas A&M AgriLife video & reports at:
    - https://www.youtube.com/watch?v=9nitvE7nIYk
    - https://agrilifelearn.tamu.edu/s/product/sesame-leafroller-in-sesame/01t4x000004OUcW
    - https://southtexas.tamu.edu/files/2020/07/2020-Sesame-Leafroller-Report_-Efficacy-report.pdf

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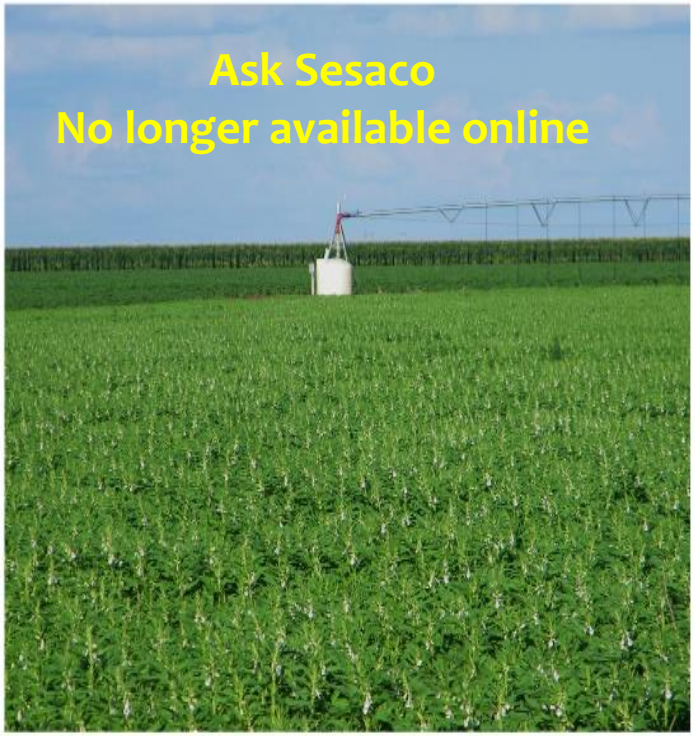
Sesame Leafroller/ Webworm/ Capsule Borer

Direct Cut/Harvest of Shatter-Resistant Sesame

- Sesame seed is small. You probably have not machine harvested such a small-seeded crop.
- Allow extra time to ensure you are doing the best job possible.
- Your contractor may have staff to help you in the field with your settings, especially if you are a first-time grower.
- Some seed loss—but at acceptable levels—will still occur.
- Set your header reel speed slightly faster than ground speed so stalks lean into the header before the jarring action of the cutter bar shakes the plant.

SESACO
SESAME COORDINATORS



SESAME PRODUCER GUIDE

2012

Direct Cut

SESACO
SESAME COORDINATORS

Request from Sesaco

SESAME HARVEST GUIDE

D. Ray Langham, Jerry Riney, Glenn Smith, and Terry Wiemers

September 2008

www.sesaco.net

Sesame Production Summary

- No new equipment
- Low input
- Low risk
- Low management required
- Acre agreement price protection
- A hedge against the weather

Other Information

- USDA-NRCS sesame plant guide (2014)
- https://plants.usda.gov/DocumentLibrary/plantguide/pdf/pg_seor4.pdf
- Texas A&M AgriLife soil test info. for sesame is only a fixed amount of (soil test N + fertilizer N), not tied to yield goal:
  - http://soiltesting.tamu.edu/webpages/recommendations.html
  - Select “Oil Crops” then search page; nitrogen rates are relatively low, but significant emphasis is placed on P (most soil samples tested at Texas A&M would recommend significant P fertilizer)
- “Sesame Research in Oklahoma 2010”(no soil test info. for fertilizer recommendations) http://weedscience.okstate.edu/4-h/sesame/CR-2155%20Sesame%20reserach%20at%20OSU%20in%202010.pdf/

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