

2004 Alternative Crop Options After Failed Cotton and Late-Season Crop Planting for the Texas South Plains

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Hail out damage on cotton has been minimal to this point in cotton, but much of the dryland cotton was dry planted and is not yet up—or not planted at all. Any marginal cotton stands or marginal cotton seedling health should be evaluated for possible termination. In typical years at this point cotton might be replanted as soon as possible, especially south of Lubbock, or growers would consider taking insurance disaster payments and leave it at that, whereas others will consider replanting to catch crops.

In the event that we encounter significant hail damage on cotton in the coming weeks, growers with damaged cotton stands will await crop insurance adjuster decisions. Although your crop insurance may have considerable influence on your decision regarding damaged cotton, here are suggestions to keep in mind. First, don't make a decision too quickly on terminating questionable cotton stands. Heading past mid-June, however, will cause some growers to go ahead and replant to other crops rather than wait any longer for insurance decisions. As is the case with any crop, often replant decisions are made on insufficient information and emotion, and tearing up a stand that in fact still has respectable yield potential is a mistake to avoid. Dr. Randy Boman, Texas Cooperative Extension (TCE) cotton agronomist, Lubbock, suggests producers may find it appropriate to retain surviving cotton stands as low as 1.5 *healthy* plants per row foot, particularly if the remaining stand is uniformly spaced (see references below).

There is adequate time to replant to other crops, so that shouldn't factor in terminating a questionable cotton stand. Numerous options are readily available through at least July 1. As usual, cotton herbicides, goals of the producer, and production economics will dictate which crop may be more suitable to a particular situation. As planting dates move toward late June, however, maturity class (shorter) will increasingly become a consideration for some replant crops such as grain sorghum.

EVALUATING STAND LOSS AND REPLANT DECISIONS FOR COTTON

Two publications from Texas A&M-Lubbock may be useful for evaluating cotton stand loss and replant decisions. Contact your county agricultural extension agent (CEA) or the Texas A&M-Lubbock website at <http://lubbock.tamu.edu/cotton> for the following information:

Effects of Stand Loss and Skips on Cotton Yields, James Supak and Randy Boman, Texas Cooperative Extension, Lubbock (1999)

Making Replant Decisions (for cotton), James Supak and Randy Boman, Texas Cooperative Extension, Lubbock (1999)

EVALUATING STAND LOSS AND REPLANT DECISIONS FOR GRAIN SORGHUM, SUNFLOWER, AND CORN

For many growers, particularly from the Lubbock area and northwest, if cotton has been hailed out then other crops may be heavily damaged as well. The following resources are also available from your CEA or <http://lubbock.tamu.edu> (unless noted otherwise).

Assessing Hail and Freeze Damage to Field Corn and Sorghum, John Bremer, Cloyce Coffman, and Steve Livingston; Texas Ag. Extension Service, publication B-6014 (1995).

Assessing Damaged Corn and Sorghum, Cloyce Coffman, Texas Ag. Extension Service, (May 2000).
{<http://soilcrop.tamu.edu/publications>}

Evaluating Hail Injury and Stand Reduction in Texas Sunflower, Calvin Trostle, Texas Cooperative Extension, Lubbock (2001) (CEAs have a copy in their 'Sunflower Crop Book').

For information on evaluating weather damage to other crops contact Calvin Trostle, Extension Agronomy, Lubbock, at the above phone or e-mail.

REPLANTING AND COMPLIANCE WITH GOVERNMENT PROGRAMS

Once the decision is made to consider replanting cotton to alternative crops producers should check how planting other crops may affect their compliance with government programs. These programs may dictate which alternative crops can be planted without losing base or benefits. Contact the Farm Service Agency (FSA) office serving your county for specific information regarding your farm. Unfortunately, crop programs may render agronomically sound cropping practices untenable if it will hurt your base acreage, particularly for cotton. See FSA for details.

REPLANTING AFTER COTTON—HERBICIDE CONSIDERATIONS

Foremost among replanting considerations on cotton ground are potential problems with residual cotton herbicides. Your cotton herbicide may dictate crop selection for replanting. Consult product labels for rotational crop restrictions for the herbicide you used on cotton. Keep in mind that the Texas South Plains is sandy ground hence herbicide activities can be hotter on susceptible alternative crops. Of course buster planting may be used to “break out” the treated soil in order to get below the herbicide zone. It is recommended that producers avoid “pulling” the treated soil toward developing plants during cultivation until later in the season in order to reduce potential for herbicide effects on developing plants.

Among crop options after cotton, soybeans, sunflower, and guar are typically grown with yellow herbicides, and thus these crops experience less risk to injury than does sorghum. Herbicide carryover injury from cotton fields may be a particular concern for the likes of Caparol, Cotoran, Karmex, Diuron, and Staple in soil residues. These herbicides are potentially more likely to injure sorghum than the yellows, often on sandy soils where residues could be relatively deep in the soil, particularly if you have received substantial rain since application. The problem of herbicide residues in soil can often be minimized if not avoided in heavier textured soils with a buster planter to establish a herbicide-free seed zone. Again, consult the chemical labels or your chemical dealer.

If Dual herbicide has been applied, Concep safened sorghum seed can be planted directly into the treated soil with little risk of sorghum injury. Growers need to consider the potential cost per acre of this

treatment (and agronomically sound seeding rates may minimize the cost) and the advantages that Dual could offer. Just as in recent years, planting sorghum on Staple ground in 2004 is simply not recommended buster planter notwithstanding. The Staple label also suggests producers not plant sorghum the next year on Staple-treated ground. Staple is moderately mobile in the soil according to Wayne Keeling, Texas A&M-Lubbock. The label on Staple suggests that STS treated soybean can be used, but supplies of group IV STS soybeans on the South Plains are limited, and seed will probably need to be ordered (see more info in the soybean section below). Brent Bean, Texas A&M-Amarillo has tested STS soybeans prior to 2000 for tolerance to several sulfonylurea herbicides (same chemical family as Staple) commonly used in wheat at 4X rates. Only one of several herbicides gave any noticeable injury in two years.

BE REALISTIC ABOUT RE-PLANT CROPPING EXPECTATIONS

Keep in mind that a wise alternative crop choice after failed cotton will have a low establishment cost with the flexibility to adjust inputs only if conditions continue to improve. The best alternative crop fully utilizes previous inputs and maximizes growing conditions anticipated for your growing area. In 2003 several producers in the Lamb Co. area tried shorter-season Spanish peanuts planted mid-June and even up to about the 25th. “Is this what you really have in mind, a high-input catch crop?” I asked. A few of these 2003 growers thought they had figured out a smart way to make some money, but most of these fields were a disappointment. Spanish peanuts require about 135 days to maturity in a normal year. For Bailey and northern Lamb Counties TAMSPAN 90 peanuts (most common variety), planted about June 10 along with elevation and historical fall killing frost dates, will stretch typical maturity out to within about 5 days of the average killing frost date. This is unnecessarily risky.

Many replant crops grow well for producers, but then the crop will usually sit there until cotton harvest is complete. To that end producers should ask themselves if a particular crop is appropriate if it will be subject to yield and quality losses in the fall.

Also, several of the crops listed below due to possible later planting dates may reach maturity and optimum harvest conditions at the same time that cotton desiccation/defoliation and cotton harvesting occur. Producers are going to focus on those tasks thus harvest quality, harvest losses, etc. may increase in alternative crops as they await harvest after farmers complete cotton harvest. Several crops such as sorghum and sunflower can often be managed for harvest well before cotton harvest to spread the workload and reduce losses in these crops compared to maturing during cotton harvest.

REPLANT AND LATE-SEASON CROPPING OPTIONS AND MATURITY SUGGESTIONS

Among the following crops, planting date suggestions reflect what I believe is a conservative but appropriate buffer against early killing frost dates relative to historically average fall weather (whether cool weather or killing frosts). Several recent fall seasons beginning in 1997 have been considerably later than average. **We should guard against complacency about the risk of late planted crops not approaching their yield potential (poor grain filling potential) due to the cool weather preceding frost.**

A Note About Recommended Last Planting Dates

Suggestions for last recommended planting dates and/or crop maturity are given below for numerous crops. Depending on the crop these suggestions have been developed using thirty-year climate data, county elevation, hybrid or variety maturity, on-farm observations, and previous suggestions. These

suggestions strive to be practical though they are not perfect. The objective for growers is a “safe” recommended last planting date with a good expectation of successful production for the particular crop. Occasionally we have a much earlier than normal fall (killing frost/freeze or even just sustained cool weather). Thus to plant too late means a grower may risk insufficient crop maturity (low yield or test weight, poor quality, etc.) for a crop in 1 or 2 years out of 10. Although we often note historical average “killing frost dates,” unmaturing crops can languish during cool weather as well. Finally, last recommended planting dates, as given below, reflect an assumption that growers understand the need to shorten crop maturity with later planting dates when appropriate.

These suggestions should encourage the farmer to not plant so late to lose significant yield potential and economic value, but to also reduce risk of late-season crop injury to a minimal level. As our experience increases with various crops these dates will be re-evaluated.

Grain Sorghum

Sorghum contract prices in April were the highest in many years with some producers able to sign pounds contracts above \$5.50/cwt. Recent cash prices are running about \$4.40-4.70/cwt. A sample of contract sorghum offerings as of June 14th included DeBruce Grain, Dimmit, at \$4.65/cwt (delivered to Plainview) and Farmer’s Co-op, Levelland, \$4.39 (delivered to Levelland). Other contractors are also in the market.

Texas Cooperative Extension-Lubbock has recently updated “Recommended Last Planting Date for Grain Sorghum Hybrids in the Texas Southern High Plains ”

(<http://lubbock.tamu.edu/sorghum/pdf/lastrecsorgplant.pdf>) Other versions have been prepared for the Texas Panhandle, Upper Rolling Plains, and the Low Rolling Plains/Edwards Plateau. The appropriate documents are available through your county extension office, the Lubbock Center, or on the web at <http://lubbock.tamu.edu/sorghum>. Almost all sorghum seed companies that market in the South Plains and other regions have supplied us with their last recommended planting date for individual hybrids.

In addition, Texas Cooperative Extension Agronomy in Lubbock has distributed “Texas A&M South Plains/Panhandle **2003 Grain Sorghum Hybrid Suggestions**”

(<http://lubbock.tamu.edu/sorghum/docs/sorghybridpicks.html>) Hybrid selections for irrigation and dryland are based on Texas A&M Crop Testing Program field trials in the Texas High Plains. For replant considerations the dryland picks are appropriate even if some irrigation will be used. That document also discusses topics not mentioned below including hybrid selection criteria and greenbug resistance.

The following is a general and conservative guideline for last recommended plantings of grain sorghum hybrids on the South Plains. Note that many sorghum seed companies will have hybrids intermediate between medium and early (i.e., medium-early). The suggested final planting date for the listed regions has been extended by five days since these guidelines were first compiled in May, 2000. A medium-early hybrid is a good compromise between these two categories if you have doubts, especially if your county is to the north and west within a particular group.

Group of Counties	Medium maturity	Early maturity
Parmer, Castro, Bailey, Cochran	June 25	July 5
Swisher, Lamb, Hale, Floyd, Hockley, Lubbock, Crosby, Yoakum, Terry	June 30	July 10
Lynn, Garza, Gaines, Dawson, Borden, Scurry, Jones, Fisher, Andrews, Martin, Howard, Mitchell, Nolan, Taylor	July 5	July 15

As planting moisture is available, mid- to late June is a preferred time to plant dryland sorghum, particularly medium and medium-early maturity hybrids as grain filling will occur in September after the worst of the summer heat is over and September rains assist the crop. Medium and medium-early sorghum hybrids are less likely to overextend available and expected moisture, hence these hybrids are more likely to make grain in dry years. Furthermore, medium and medium-early hybrids still retain good yield potential whereas yield potential often declines significantly with early maturity sorghum hybrids.

Typical grain sorghum hybrids: Days to half-bloom and days to maturity. Ratings of days to half-bloom (when the sorghum head blooms starting at the top and proceeding one-half down the head) vary by several days among seed companies. Knowing the range of maturity and days to half-bloom are key to effective sorghum management strategies. Once half-bloom is reached sorghum hybrids will proceed to grain filling and physiological maturity at when black layer occurs in the seed. This typically takes 30-35 days, but cool weather can greatly retard grain fill and lead to low test weight. As a rule of thumb:

<u>Grain Sorghum Maturity</u>	<u>Days to ½ Bloom</u>	<u>Approx. Days to Maturity*</u>
Early	50-55	85-89
Medium-early	56-60	90-94
Medium	61-65	95-99
Medium-late	66-70	100-105
Late	71-75	105-110

*Uses ~32 days for grain fill and maturity for all hybrids.

Many producers err on the side of planting **too much** grain sorghum seed per acre. As a result, in droughty conditions producers are at risk of inadequate moisture *per plant* during flowering and grain fill to produce grain. This problem was quite evident in 1999 and 2000 in the South Plains. When soil moisture levels are good (5-6" or more total stored soil moisture) a good target is 30,000-35,000 seeds/A. Sorghum seed ranges from about 12,000 to 18,000 seeds/lb., with most around 16,000 seeds/lb., thus this seeding rate is near 2.0 lbs./A for many sorghum hybrids. If soil moisture is low (2-4"), a seed drop of 25,000-30,000/A is advised. For any condition with poor soil moisture, especially as plantings approach July 1, consider 20,000 seeds/A. These seeding rates will seem unbelievably low to some prospective growers, but data has suggested over several years that these numbers are realistic. And if moisture conditions improve substantially after planting, sorghum's strong ability to compensate for low plant population will still make respectable yields. These seeding rate suggestions are a risk management tool. Yes, in some years a higher seeding rate might in fact offer some additional return, but the difference is minimal compared to the downside potential of having too many plants for too little available moisture thus not making a crop. Some farmers do, however, have trouble getting their planter to put out this low amount of seed.

If failed cotton is going back to irrigated sorghum for limited irrigation (4-8") with low soil profile moisture conditions, target 40,000-45,000 seeds/A, but if soil moisture is good, consider 50,000-55,000 seeds/A. For full irrigation levels (8-15"), target 80,000 seeds/A on June 1, but by July consider 100,000-110,000 seeds/A for non-tillering hybrids and 80,000-90,000 seeds/A for tillering hybrids.

For replant grain sorghum, increase seeding rates slightly if trouble is expected with cotton herbicides or poor seeding conditions.

Because seed costs are relatively low for sorghum (\$1.00-1.20 cents per pound), growers too easily increase seeding rates as it doesn't much affect production costs.

Is half-price "Replant Special" grain sorghum seed a good deal?

Maybe not! Some companies may offer half-price on sorghum seed for replanting failed cotton, but the net cost difference at the above seeding rates (~2 lbs./A for dryland) is minimal. If it causes you to pick a poorer hybrid, then it is not a good deal. Pick your hybrid first and ignore the half-price seed. Once you have decided which hybrid you need only then look to see if you can get it at a lower cost. If not, shrug it off and plant the hybrid you selected.

Limited but timely irrigation in grain sorghum. Many producers replanting to sorghum on what was irrigated cotton may consider limited irrigation. Although producers may convert failed irrigated cotton to dryland sorghum production keep in mind that even one timely irrigation at boot stage just prior to flowering can substantially lift yield. Other timely irrigations may occur at growing point differentiation (about 28-30 days after germination for a medium-maturity hybrid), especially if dry, and during grain fill after flowering.

Sorghum fertility is often by-passed in an effort to minimize costs. Sorghum requires about 2 lbs. N per 100 lbs. of grain. If dryland deep soil moisture conditions remain favorable and an adequate planting rain occurs I expect good potential return in 2004 for sidedressing limited N, particularly if applied by growing point differentiation. Many producers for irrigated cotton who put down preplant N will probably add little if any additional N for sorghum unless their sorghum yield goal is above 5000 lbs./A.

A final note about sorghum, replant or otherwise: Expect more from your crop and do the little things that will help stand establishment, anchoring those brace roots (throw some dirt around the base of the plant), etc. In the words of one Dawson Co. farmer, "let's not farm sorghum the way we farm cotton." What D.P. means in part is that sorghum used to be planted by many producers with a buster planter (in the bottom), and the opportunity is there to readily move dirt around the base of the plant to help the plant stand better.

Herbicides and grain sorghum: Dr. Brent Bean, Texas A&M—Amarillo, has summarized available herbicides and their use in grain sorghum. The information is posted at <http://lubbock.tamu.edu/sorghum/sorghweed.php> or call the A&M-Lubbock Center.

Atrazine in sorghum then rotating to 2005 cotton: We are frequently asked about atrazine in sorghum. Technically, the atrazine label restricts use on sandy loam soils, for high pH, etc. A specific recurring question about sorghum is "What rate can I use and go back to cotton next year?" The label would say that no application after June 10 should be made if you expect to return to cotton the next year. We believe, otherwise, that rates near 0.75 lb./A will still offer significant weed control in sorghum and will not likely harm cotton the following year. On the sandiest of soils where herbicidal activity will be higher, a producer might consider 0.6 or even 0.5 lb./A rate. We believe this is in the range where producers might not be satisfied with control, but if soils are extremely sandy, then activity on weeds should still be significant.

Sunflower Pricing, Production, and Insect Considerations

(Prices week of June 14th, call contractor phone numbers for latest information.)

Both confectionary sunflower and oilseed sunflower (preferably NuSun mid-oleic oilseed, but also

conventional oilseed) markets and contracts are readily available in 2004. Several markets and delivery points are available depending on your location. NuSun hybrids are comparable or better than conventional oil, and market possibilities are greater for NuSun oil than conventional. Producers planting oilseed will have more market options even if they intend to deliver for birdfood processing.

Confectionary Sunflower

Red River Commodities (Lubbock, TX, 806.763.9747) is contracting confectionary at \$18/\$10 per cwt. based on large/small seed. Allow at least 4-5% for trash. For the South Plains, delivery points include Red River facilities in Lubbock and Allmon (Floyd Co.) as well as Southwestern Grain, Plainview; Petersburg Co-op, and Kelly Green in Muleshoe. Current Panhandle delivery locations include Bushland Co-op, Dumas, and Sunray. Call for other possible options.

Sigco Sun (Goodland, KS, 800.742.9259) offers contracts for with prices specific for particular confectionary hybrids of Triumph Seed. Allow at least 4-5% for trash. Delivery is available to Oglesby Grain in Dumas at \$19/\$13. Delivery can also be made to Goodland.

Oilseed Sunflower (mainly NuSun mid-oleic oil, but also conventional oil)

Red River Commodities (Lubbock, TX, 806.763.9747) contracts any oilseed for birdfood. South Plains delivery is Lubbock or Plainview, but call for possible additional locations. Limited contracts are currently about \$12.50/cwt with no penalty/premium for oil content.

Seed Resource (Tulia, TX, 800.724.4306, Chick Childress or Wayne Swink) is a subsidiary of Attebury Grain. Seed Resource coordinates purchasing on NuSun oilseed for Attebury and can arrange delivery at Attebury elevator locations throughout the Texas High Plains. Pounds contracts as well as a cash market are available. Purchasing will reflect the standard 2-for-1 premium (or discount) for oil content above 40%.

Colorado Mills (Lamar, CO, 719.336.8452) accepts primarily NuSun in Lamar. Contracts currently are available for pounds of delivered NuSun at \$12.95/cwt, with a 2-for-1 oil premium above 40%. A 2-for-1 discount applies for oil content of 37-40%, and more discount if below 37% (which is rare). Acre-based contracts, which are less risky, are available for about \$0.40/cwt less or \$12.55/cwt.

Delivery is also available at reduced prices at Oglesby Grain, Dumas, and in Walsh, CO. Call for pricing at those locations.

Northern Sun (Goodland, KS, 800.542.7333) takes delivery in Goodland for NuSun and conventional oil. New crop contracts are available for ~\$12.90/cwt with a 2-for-1 oil premium/discount based on 40% oil.

Oil and confectionary last recommended planting dates for Texas South Plains sunflower are:

July 5—Parmer, Castro, Bailey, Cochran

July 10—Swisher, Briscoe, Lamb, Hale, Floyd, Hockley, Lubbock, Crosby, Yoakum, Terry

July 15—Lynn, Garza, Gaines, Dawson, Borden, Scurry, Andrews, Martin, Howard, Mitchell

For both oilseed and confectionary hybrids, seeding rates are critical to crop success, especially confectionary where high plant population leads to smaller seed, which are worth a fraction of the large seed. Like sorghum, general experience is that too high seeding rates can hurt the producer. I can attest that, unless you are using an air/vacuum planter, it is essential that you take the time to calibrate the planter. In fact, it may pay to hire someone with an air/vacuum planter. The following seeding rates reflect targeted plant populations at stand establishment of 85% of planted seed. Because South Plains

soil water-holding capacity (lower in sandy soils) and evapotranspiration is higher than in Kansas or Colorado, seeding rate targets are generally slightly lower than recommendations in northern states.

Suggested sunflower seeding rates (not plant population) for West Texas

	Irrigated	Dryland
Oilseed	20,000-23,000	14,000-18,000
Confectionary	16,000-18,000	12,000-14,000

The above recommendations are bolstered by Texas Extension research in 2001-2003 from Plainview and Dumas particularly for irrigated confectionary. Across a range of confectionary seeding rates from 11,000-22,000 seeds/A, yields showed little difference but confectionary seed size was substantially affected. The lower the seeding rate the higher proportion of large seed. This ranged from 70-75% large seed at the low seeding rate to about 45% at the high seeding rate. This difference on a 2,000 lbs./A yield is equivalent to nearly \$40/A more income with the lower seeding rate due to the premium associated on larger seed in your contract.

Yield potential tends may decline slightly during the season with later planting dates, but sunflower or head moth (“the boll weevil of sunflowers”) pressure also usually declines with later planting dates. Common concerns about sunflower production in the South Plains revolve around sunflower moth control, volunteer sunflowers the following year (use a pan header at harvest and possibly Round-Up Ready cotton the following year), and that sunflowers were “hard on the ground.” Fertility on sunflowers is not to be neglected lest subsequent residual soil fertility for the next crop be poor. In general, nitrogen fertilizer is recommended at the rate of 5 lbs. N per 100 lbs. of yield goal.

Limited but timely irrigation in sunflower. Sunflower is very adaptable to limited but timely irrigation, particularly from bud stage at about 0.5-1.0” diameter to flowering ~20 days later and then an additional 20 days.

I especially recommend that new and prospective sunflower growers study production suggestions for West Texas sunflower summarized in “Common Concerns in West Texas Sunflower Production and Ways to Solve Them,” available from county ag. agents or the Internet at <http://lubbock.tamu.edu/sunflower/> Kansas State Univ. also has a good sunflower production guide with nice pictures on the web at <http://www.oznet.ksu.edu/library/crpsl2/MF2384.pdf>

Timing of Sprays for Sunflower (Head) Moth Control

The damage inflicted by uncontrolled sunflower moth (commonly referred to by many as ‘head moth’) is a nuisance if not the downfall of some sunflower production, particularly among new growers. Understanding this issue is critical to sunflower production success. Although the biology of sunflower moth is quite different than weevils, there is reason I often refer to this insect as “the boll weevil of sunflower.” Left uncontrolled the larvae of this insect can wreak havoc on a sunflower crop, much of the damage coming not just from the burrowing larvae but the subsequent opportunistic infection of fungal *Rhizopus* head rot.

For information on sunflower insect control check with your local Extension IPM agent and consult Texas Extension bulletin B-1488, “Managing Insects Pests of Texas Sunflower,” which can be downloaded from <http://tcebookstore.org/tmppdfs/1860871-B1488.pdf> In addition, a critical 2002

supplement to B-1488 regarding sunflower head moth control recommendations as well as an alert on the soybean stem borer in sunflower should accompany B-1488, available at <http://lubbock.tamu.edu/sunflower/docs/insectsunflower02.pdf> If you like video, Dr. Pat Porter, Extension entomologist, and I collaborated in 2002 to create two short videos explaining the timing of sunflower head moth spraying based on stage of bloom available at <http://lubbock.tamu.edu/ipm/AgWeb/videos/index.html>

Scouting sunflower moth is best done early in the morning or after sunset as the heat cools off. You may get best results using a flashlight to find the adults on the head. During the heat of the day the moths tend to hide under leaves and may not fly much so they are harder to find—you will not get a reliable indication of the need to spray unless you simply see a few moths either flying around or on the head (which means pressure is high).

Industry partners suggest—and Lubbock Extension entomologist Pat Porter and I concur—that sunflower growers make their initial sunflower moth spraying decision targeting the initial spray at bloom of a few percent, certainly by 10% bloom, so as to increase chances of control. Bloom constitutes when the ray petals have opened up and you can then seed the center of the head (demonstrated in the above videos). This means making the sunflower spraying decision 1-3 days earlier when you start to see the back side of the yellow ray petals on the head scattered across the field. Industry also tends to use a threshold less than 2 moths per 5 plants (especially for confectionary)—they even recommend spraying if only a few moths are observed in the field. Though this may be extremely liberal, producer failures—many of them—drive this recommendation. These practices are not without merit, especially for seed production and confectionary sunflower fields. If a grower ends up with head moth larvae infestation, typically it means that the farmer sprayed too late. Some of our field observations have indicated just how fast sunflowers can bloom going from 6% on day 1, 19% on day 2, 43% on day 3, 67% on day 4.

Labeled products for sunflower moth control include Warrior T (pyrethroid), but numerous growers find benefit in mixing the pyrethroid with methyl parathion for a quick knockdown in the first spray.

Soybeans

Soybeans may be an option on irrigated land where cotton failed. There is also more soybean planted north of Lubbock in 2004 due to high contract prices that were available earlier in the year. Soybeans can yield fairly well under limited irrigation if irrigation is timely (flowering to mid-grain filling). Today's higher prices make this feasible compared to soybean prices as recently as 2002. However, soybean production south of U.S 70 highway seems to more often have difficulty reaching yield potential due to heat, minimal rainfall support, etc. For that reason I don't encourage even conventional soybean production south of U.S. 70. For the Southern High Plains soybeans may be planted as late as July 10 and still make a crop, but late planting usually retards stalk growth and can make it hard to harvest the lower seed pods. Higher seeding rates and narrower rows may encourage higher pod set. Since 2001, I have altered my planting date by maturity class suggestions from previous years.

In the past I have suggested medium-maturity group IV soybeans may be planted by June 15 (Dimmitt) to June 25 (Lamesa), but growers should switch to an early group IV or late-maturity group III variety for later planting. Data from Hale County in 2000-2002 suggests group IV soybeans continue to out perform group-III soybeans even when planted in early July. Yields for all of six maturity groups (mid-III to V) did decline gradually from early and mid-May planting dates, but yield declines were substantial if planted after mid-June. Group III soybeans did not perform well on planting dates averaging June 16 and July 3 planting dates relative to group IV. Plants were very short. Determinate group V soybeans have performed well even at later planting dates. Texas A&M research from the Amarillo area suggests that

for each day after June 20 that soybean yield potential declines 1 bushel per day. Data from Hale County in 2000-2002 would support a similar conclusion for the South Plains.

STS treated soybeans may be planted on cotton ground treated with Staple herbicide. Availability of STS soybeans in the appropriate maturity group may be limited. Check with several seed dealers to see what might be available. Expect little or no STS soybeans on hand, but if time permits, STS soybeans may be ordered although that will increase seed costs.

Seeding rates for soybean should reflect row spacing, available soil moisture, and irrigation. In general for 40-inch rows with full irrigation, consider a seed drop at least 130,000 up to 150,000 seeds/A (10-12 seeds/ft.). In the past I have suggested that 10 seeds per foot should be adequate (~130,000 seeds/A on 40-inch rows), but if stand establishment turns out to be less than 75%, which is sometimes the case, then you don't have enough plants if fully irrigating. For more desirable 30-inch rows and high irrigation, consider 150,000-170,000 seeds/A (8-10 seeds/ft.), and for drilled seeding rates growers may push seeding rates as high as 180,000-200,000/A. Reduce seeding rates slightly for less than full irrigation and/or poor soil moisture at planting.

Most cotton ground probably has not been planted in soybeans before. Soybean-specific *Rhizobium* inoculants should be considered to ensure proper nodulation on such ground. On the South Plains soybean inoculant choices include seedbox (both powder and newer seed applied liquid) and in-furrow granular or liquid inoculant. Although granular delivers more *Rhizobium* to the seed than seedbox treatments, costs may be considerably higher than seedbox treatments, and liquid costs are somewhere in between. If using a seedbox treatment I suggest you avoid the dry powder forms for I don't see much success with any dry seedbox inoculants for other crops in the South Plains. The seed-applied liquids appear to be a significant improvement over seedbox powders (which may blow off the seed in an air-vacuum planter), but if you are still planting into dry soil then irrigating up you could lose much of the bacteria before the irrigation wets the soil. If you can apply liquid inoculant in-furrow, application is convenient and you will deliver the highest numbers of *Rhizobium* to the seed.

As soon as growers decide they will plant soybeans, you need to locate *Rhizobium* inoculant, which most likely will be available in Hale and Lamb Counties and north. If not available, then call Becker Underwood, St. Joseph, MO, 816.233.3446, or Nitragin, Milwaukee, WI, 800.558.1003, for information on how to obtain inoculum specific for soybeans. Shipping charges will be lowest for liquid or seedbox treatments.

Additional Texas Panhandle and South Plains production "Quick Tips" and irrigation information for soybeans may be found at <http://lubbock.tamu.edu/othercrops/>

Guar

2004 contracts for the drought tolerant crop guar remain available on the Texas South Plains through Klint Forbes, West Texas Guar, Brownfield (office, 806.637.4662). This year's price is approximately \$13/cwt for grade #1, delivered to Rhodia, Inc., Vernon, TX. Fuel charges may apply so call for information. Growers in the eastern South Plains might also inquire for prices at Hardemann Grain, Chillicothe, 800.687.4799, or Vernon Farmer's Co-op, 940.552.6277. Both elevators recently quoted \$13.50/cwt. delivered to Vernon.

Guar is well suited for dryland production on ground that has few weed problems. It is tolerant of yellow herbicides used in cotton production, but few other options are available for herbicides on guar (post emerge grass herbicide Select 2EC; also Sandea, a broadleaf herbicide from Gowan though activity on

russian thistle, whiteweed, and lakeweed is minimal). Guar responds well to one or two early or mid-season irrigations of 2-3", but I have seen yields reduced by over 25% due to regular sprinkler irrigation relative to dryland production on the same field. This may be due to interference with pollination. Terry Co. data in 1999 suggested 100-125 lbs. guar per 1" irrigation water under limited sprinkler irrigation. Because of the deep tap root on guar, this crop, like sunflower, favors large individual irrigations relative to frequent irrigation. The crop can take advantage of deep subsoil moisture even though rainfall may be infrequent hence in 2004 if the crop can be established it should do well with minimal additional rainfall due to deep soil moisture in much of the South Plains.

Four varieties of guar are available, including the recent Texas Tech releases Matador and Monument, and all may be planted up to about July 4 in the South Plains although June 20th would be favorable. Seed sources are pretty well limited to the contractor or Grass Seed Services in Littlefield, which oversees production of Matador and Monument. Be sure of high quality seed that is free of morningglories. Some guar seed in the past couple of years has had low germination so be sure that year of production (at least 2002) and germination are acceptable. Field observations in 1999 suggest that Lewis and Esser are slightly earlier in maturity than Kinman and particularly Santa Cruz. Data from the early 1980s suggest that Lewis outyields Kinman, but we are unsure of yields in Santa Cruz due to poor seed quality. Dryland guar yields under average conditions are about 400-1100 lbs./A, and somewhat higher for irrigated.

Guar input costs at this point are minimal and this should be considered when looking at gross and net return potential. No dryland guar in the South Plains in 1998-2003 that I know of required treatment for diseases or insects. Guar appears suitable for narrower row spacings, especially the non-branching Monument variety. Seed costs run about \$0.50-0.60/lb, and seeding rates for dryland should target 5-8 lbs./A, the higher end as conditions are more favorable or as row spacing narrows.

Ideally guar seed should be inoculated with guar-specific *Rhizobium* preferably one that has a sticker to adhere the inoculum to the seed for best results, although we have not had good success obtaining desired nodulation. Becker Underwood (St. Joseph, MO, 816.233.3446) manufactures guar specific seedbox inoculant, but supplies are short in 2004. West Texas Guar is also has non-specific inoculant, Vigro, produced by Sono Ag. in Plainview, that can be used for guar. Some growers have reported satisfactory nodulation with this product in 2003, and we hope that we can figure out how to get consistent results with the product. If you would like to try this product contact Jim Burnett, Sustainable Ag. Solutions, Brownfield. Keep in mind that planting into hot, dry soils is not conducive to developing nodulation regardless of the product.

Substantial harvest losses may be minimized by using a low profile row-crop (soybean) header relative to a conventional flex bar header. Custom guar harvesters should be able to minimize harvest losses if they go slow enough to do a good job, but expect to pay toward \$22-25/acre. I tend to think it is worth it due to higher harvested yields and less seed on the ground, which reduces volunteer guar problems the following year (this is a common concern that needs research for how to control volunteer guar with Roundup Ready cotton or other means).

Contractors can provide additional production information. Also, an old 1977 Extension document entitled "Keys to Profitable Guar Production" still has some good, basic information. This and several other documents on guar production are available from Calvin Trostle at the Texas A&M Lubbock Center or you may access them at <http://lubbock.tamu.edu/othercrops/guar.php>

Summer Forage Sorghum, Sorghum/Sudan and Hybrid Pearl Millet Forages

Summer annual forages such as sorghum/sudans, which have good regrowth potential after grazing or

baling, will still be planted on numerous acres in the South Plains in 2004. In 2002, FSA changed the planting date from June 30 to July 15 for full coverage NAP insurance (thus limited coverage is available into early August).

For a summary on current forage types including sorghum/sudans, forage sorghums, and millets (good for caliche soils due to Fe acquisition; no prussic acid problems) contact your local Extension office or the Lubbock Center for “Annual Summer Forages for West Texas,” available at <http://lubbock.tamu.edu/othercrops/forage.php> This document was updated in June 2004 (not yet posted on the Web; call Calvin Trostle). It includes a brief introduction to the brown mid-rib forages (generally lower lignin content, higher livestock palatability, and higher invitro digestibility) and photoperiod-sensitive forages (heads out in October regardless of planting date). Also, dryland and irrigated forage seeding rate guidelines have been compiled in “Suggested Forage Seeding Rate Targets for West Texas,” also available from your local Extension office or the Lubbock website.

Establishing summer annual forages in dry conditions—consider using a planter rather than a drill. In 2003 due to minimal soil moisture conditions, Extension test plots at AGCARES, Dawson Co., were established in late June using a planter rather than a drill. We did not believe we had enough control over seed placement with our older drill hence establishment was more important to us than potential forage yield. We achieved excellent results using a planter on 40-inch rows. We were able to move soil to get to moisture which we could not have done with a drill. In spite of only 4.5” of rain on the crop from late June through mid-October, we averaged 2.7 dry tons of forage per acre. We used a seeding rate of ~10 lbs./A rather than the 15 lbs./A we would have used with a drill, which saved us about \$2/A on seed costs.

A take-home lesson from our 2003 Dawson Co. experience is that establishment was important, and if you have an older drill with limited ability to adequately place seed then using a planter may be a good idea, especially if you are on a 30-inch row spacing. The way 2004 is shaping up for many producers we may face increasing forages demands since it is too dry in many areas to drill sorghum/sudan. In addition, grazing cattle will walk between the rows if the forage spacing is at least 20-24” hence they don’t tramp the stubble and regrowth potential is improved.

Summer forage seed production contracts: Numerous seed companies in the Crosbyton-Lubbock-Plainview-Muleshoe-Hereford region contract seed production for hybrid sorghum and sorghum/sudan forages; hybrid pearl, German, and proso millet; hegari, sumac, and other forages. Returning growers are usually given the first opportunity, but call area companies you are familiar with your inquiries.

Black-eyed Peas, Pinto Beans, Other Peas, Vegetable Crops—Contract Only

Numerous vegetable crops including black-eyed peas may still be contracted in 2004. Price and contract availability may change weekly and where you deliver is an important consideration. Contractors often are “full” due to early season contracting, but because contract acreage may not get planted or new market requests are received, additional contracts may be offered. Thus it doesn’t hurt to call for current availability and prices.

Black-eyed peas: *A special note about black-eyed peas is merited.* Black-eyes, due to their popularity, can easily be overproduced if not overcontracted. Yields were high in 2003, and some companies are not contracting at all this year. Growing without a contract, or wildcatting, is strongly discouraged. Some growers doing this in 1999 received as little as \$3/cwt. As an alternative crop in a hail-out situation, growers should not necessarily expect to receive prices comparable to early season contracts.

Companies/contractors still offering limited 2004 contract acreage in the Texas South Plains include:

Muleshoe Pea & Bean (806.272.5589), deliver in Muleshoe (about \$18/cwt to the grower); C.T. Smith/Peas Inc., Pleasanton, TX (Jim Taylor, call office first, 830.569.2140; mobile 210.867.9369)—regional delivery in Tulia at Big N Feed & Seed (or for large acreages may deliver direct to the San Antonio area); price depends on production system and other parameters so call for details;

Selcor, Brownfield, TX (806.522.6460), call for pricing and delivery points in the western South Plains including Brownfield.

James Brown, E & J Ag., Sudan (806.227.2194), call for pricing, delivery in Sudan.

Triangle Bean & Seed (Rocky Nichols, 806.997.4500), call for availability; delivery in Roundup between Anton and Shallowater.

Texas-Oklahoma Production Co. (TOPCO), Enid, OK (Curt Johnston, 580.234.1334; delivery on the turnrow or in Olton), reports no blackeye contracting at this time (but see other opportunities below).

These contractors might have contracts available reflecting any recent changes in market demand or unplanted contract acreage returned to the contractor. Initial contract prices this spring were over \$20/cwt but with the current high supply on blackeyes, replant/late plant prices will probably be lower. Remember that quality adjustments, delivery terms, and payment dates vary among contractor. Thus some contracts may be more favorable than others apart from price, so call for details.

Black-eyes in the area from Muleshoe to Tulia can safely be planted up to about July 10, slightly later to the south. The crop requires about 75-85 days to maturity. Ample production information is available from your contractor. Extension survey work in 1999 suggests that fields which have never been in black-eye production before (or at a minimum, within the last 5 years) have higher *Rhizobium* nodule counts. We suggest that fields in black-eyed peas for the first time (or a long time) might consider using an inoculant.

Pinto bean acreage is pretty much full with only a few remaining contract acres available from Peas, Inc. (see phone numbers above) or Muleshoe Pea & Bean. Check with other contractors as well. Pintos are very susceptible to heat during flowering and ideally should be planted by late April or after late June. For information on pinto bean production in Texas contact the Lubbock Center (806.746.6101) for former Extension horticulturalist Dr. Rollie Roberts' publication L-5012 "Texas Commercial Vegetable Growers Guide: Pinto Beans."

In addition, several of the contractors above, especially C.T. Smith/Peas Inc. and TOPCO have limited contracts available on several of more than twenty other types of beans and peas including crowder peas, pinkeyes, purplehulls, cremes, etc. Call for current contract availability and price. Acreage is limited but many of these crops will readily fit a short-season window. Be sure to ascertain if there are any planting restrictions after certain herbicides or other chemicals such as Temik applied to cotton.

Pinkeye cowpea contracts in 2004 are still available through C.T. Smith/Peas, Inc., Muleshoe Pea & Bean, and especially TOPCO, which needs about 1,000 acres of production. I was unable to get any information this year on possible markets via Western Seed, Canyon, TX, for delivery in San Jon, NM (55 miles north of Clovis). Past yields have ranged around 1200-1500 lbs./A. Some prices this year may be near \$24/cwt.

Purple hull cowpea contracts in 2004 may still be available through TOPCO. for turnrow delivery or also in Olton (see above phone info). According to Curt Johnston, yields are about 2/3 of that black-eyed peas. Also, Peas, Inc. may have purple hull contracts available.

Other seed vegetable peas and beans: There is a myriad of limited-acreage vegetable type contract crops that may need only 10, 20, or 40 acres of production, some of these to produce planting seed. Call the above contractors, especially C.T. Smith/Peas, Inc. (delivery in Tulia) for further information.

Green beans are contracted in the Parmer-Bailey-Castro County area by Steve Brown of Allen Canning out of Arkansas (800.234.2553). He reports that the crop should be planted May 20 to July 25, needs 60 days to harvest, preferably up to 15" of irrigation, and the crop cannot be planted after failed cotton where Temik was used. These green beans are not suitable for caliche ground. Current prices are in the \$125/ton range, with five-year average yields near 4.5 tons/acre. Input costs are substantial with seed alone running about \$110/A. Allen does harvesting and hauling, and preference is given to previous growers. Doug Dillon, 505.763.2134 (mobile), Farwell, TX, serves as a field consultant for Allen Canning growers.

Several other contract crops may be available on a limited basis. Contact any fruit and vegetable sheds in your area to learn of other crop possibilities.

Sesame

Drought- and insect-resistant sesame is also a possible alternative crop after failed cotton. A more attractive sesame market has returned for South Plains growers, especially for southern Floyd Co, Lubbock Co., Terry Co. and areas south. Sesaco is interested in contracting 5,000 acres or more in the region. Contract prices for new growers this year are as high as \$25/cwt. with several additional premiums kicking in for clean samples, minimal crack seed, and seed color.

For production, contract information, and delivery locations call Glenn Smith, Sesaco Corp., Paris, TX, at 800.527.1024 or Ray Langham and Terry Weimers, Sesaco, San Antonio, TX, at 800.737.2260. Obtain a Sesame Production Guide for the Southwest from either Sesaco or Calvin Trostle, Texas A&M—Lubbock, 806.746.6101, and read it beforehand. This document can also be downloaded from <http://www.sesaco.net/SWsesamepamphlet.pdf>

Historically, the caprock region of West Texas has grown the best quality sesame in the U.S, but old varieties were not suited (too long in season or split open dropping their seed on the ground). Newer varieties have improved shatter resistance, shorter maturity, and lower height for combining. Sesaco seeks to establish new West Texas growers to help meet market demands. Sesame may be planted, preferably on 30-inch rows, from late May to late June, and needs 95 days before first frost. In general, the crop can be grown with existing farm equipment. Texas Cooperative Extension began testing sesame varieties for the first time on dryland in 2003 in Dawson County, with yields running about 550 lbs./A in spite of only 4.5" of rainfall while the crop was growing (adequate stored soil moisture contributed to yield).

Like guar, sesame is not for your weedy ground. No individual herbicide is registered for sesame, but yellow herbicides on cotton hail-out ground don't appear to be a major problem. Texas A&M has initiated herbicide research on sesame in the South Plains for both new products and tolerance to cotton herbicides. You may also contact Ray Langham for suggestions from his experience in terms of what cotton herbicides may curtail sesame performance in a replant situation. In general, Sesaco anticipates that for dryland production with good early season moisture, expect 500-900 lbs./A, and for irrigated production, 1000-1500 lbs./A.

Peanuts

I only include this because occasionally growers ask about late planting of shorter maturity Spanish peanuts or even shortest maturity Valencia peanuts. In general, peanuts are a high input crop, and that is not normally appropriate for a catch crop. Spanish peanuts in a replant production system should not be considered past June 1 in the northern South Plains, and no more than a week later from Levelland south. A significant acreage of Spanish peanuts was planted as late as June 20th last year in Lamb Co., but for the most part yields most often did not reach one ton. One producer in Lamb Co. reported that among 12 different fields his yields declined from near 4,000 lbs./A planted about May 12, to about 1,500 lbs./A ending with planting on June 3. Yes, a few individual growers have made 2,500 lbs./A or so with plantings as late as June mid-June, but this is rare, represents risk, and has a strong potential for disappointment.

Corn

In 2003 some short maturity corn was used as a replant crop in Lamb Co. Some hybrids have short enough maturity (95-day) to be planted through mid-June, but yield potential is inherently lower, and the crop must conduct its tasseling, silking, fertilization, and grain fill during the hottest part of the summer. Also, like peanuts above, this is not a low-input catch crop rather significant levels of irrigation will be required.

And finally....

Attitudes

Poor attitudes toward the commitment to grow another crop right are the downfall of many of the above crops, especially in a replant situation. Many of these crops, namely grain sorghum and guar, don't require a lot of inputs in a replant situation, but yet management—not necessarily requiring input expenses—can make or break these crops as a catch crop. I believe we should expect more from our catch crop sorghum. Resist the temptation to plant the cheapest seed you can find. Learn what the key things are that you need to do to make these crops work for you in 2004.