2010 Alternative Crop Options after Failed Cotton & Late-Season Crop Planting for the Texas South Plains

10th Annual Edition

This document is posted on the Web at http://lubbock.tamu.edu/cotton/pdf/cropreplantoptions10.pdf

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Late-season crop guidelines are provided for the following topics and crops in the Texas South Plains region:

- Don't terminate cotton too quickly
- Evaluating crop damage and remaining stands—cotton, grain sorghum, sunflower, corn
- Herbicide considerations for subsequent crops
- Realistic recommended last planting dates
- Late planting crop guidelines—
  - Grain sorghum
  - Sunflower
  - Guar
  - Sesame
  - Black-eyed peas and other pea & bean crops
  - Summer annual forages including sorghum/sudan, hybrid pearl millet, and forage sorghum
  - Soybeans
  - Peanuts
  - Corn grain & silage

The **primary purpose** of this guide is twofold: **1)** provide producers with guidelines for crop options after failed cotton, and **2)** provide assistance for producers in any late-season planting decisions where timely planting, duration to crop maturity, and fall weather risk may impact successful cropping.

Hail out damage on West Texas cotton is often heavy this time of year. Any marginal cotton stands or marginal cotton seedling health may be evaluated for possible termination. In typical years through early June cotton might be replanted as soon as possible, especially south of Lubbock (full and reduced coverage insurance cut-off dates are later), or growers would consider taking insurance disaster payments and leave it at that. Other producers will consider replanting to catch crops if alternative crop options, herbicide rotation restrictions, etc. are favorable.

As we may encounter further significant hail and wind 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.

Don't Terminate Questionable Cotton Stands Too Quickly

Heading past early to 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 AgriLife Extension Service cotton agronomist, Lubbock, suggests producers may find it appropriate to retain surviving cotton stands with as low as 1.5 *healthy* plants per foot of row, 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

One recently revised publication from Texas AgriLife Research & Extension, Lubbock, is useful for evaluating cotton stand loss and replant decisions. Contact your county agricultural extension agent (CEA) or the Texas AgriLife Research & Extension Center's Lubbock website at http://lubbock.tamu.edu/cotton/pdf/makingreplantdecisions07.pdf for the following information:

Making Replant Decisions in Cotton, Randy Boman & Robert Lemon, Texas AgriLife Extension Service, Lubbock (2007)

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 local AgriLife Extension agent/office or http://lubbock.tamu.edu.

Assessing Hail and Freeze Damage to Field Corn and Sorghum, John Bremer, Cloyce Coffman, and Steve Livingston; Texas AgriLife Extension Service, publication B-6014 (1995), http://lubbock.tamu.edu/corn/pdf/cornfreezedamage.pdf

Evaluating Hail Injury and Stand Reduction in Texas Sunflower, Calvin Trostle, Texas AgriLife Extension Service, Lubbock (2001), http://lubbock.tamu.edu/sunflower/docs/EvaluatingHailInjury.html, or call Calvin Trostle.

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

Some undesirable quirks in Farm Service Agency (FSA) rules preclude planting of some vegetable and fruit crops on program crop ground. In making decisions to replant 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. **In 2007 & 2008 this was especially true with Staple** (more details below), which is often used for morningglory control. Consult product labels for rotational crop restrictions for the herbicide you used on cotton. Keep in mind that much of the Texas South Plains is predominantly sandy ground hence herbicide activities can be higher 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 for some herbicides, particularly the 'yellows,' but this wouldn't necessarily address problems with a herbicide that might be more mobile like Staple. 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.

Online Access to Herbicide Labels

Two websites are frequently used by AgriLife Research & Extension staff to obtain information about uses, rates, and rotation restrictions. First, http://www.cdms.net (click 'Services' then 'Labels/MSDS' then type in your desired label in the 'Brand Name' search box; you may also search the database by active ingredient by clicking 'Other Search Options' then likely you will need to register with the website). This gives perhaps the most up-to-date information, and appears to be the most comprehensive in company and product coverage. Second, http://www.greenbook.net is a major online source of chemical labels (though it appears that some products or companies are not represented), and it also allows you to search by active ingredient.

Among crop options after cotton, soybeans, sunflower, and guar are typically grown with yellow herbicides, and thus do not experience potential injury risks like grain sorghum. Herbicide carryover injury from cotton fields may be a particular concern for Caparol, Cotoran, Karmex, Diuron, and Staple in soil residues. These herbicides, especially Staple, are potentially more likely to injure sorghum than the yellows, often on sandy soils where residues could be spread throughout the soil though substantial rains and/or irrigation since application could dilute their potential effect. 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 or Dual Magnum herbicide (*s*-metolachlor) 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. Planting sorghum on Staple ground is simply not recommended buster planter nonwithstanding. The Staple label even excludes sorghum planting the year after Staple application, and injury is known to have occurred. Staple is moderately mobile in the soil according to Wayne Keeling, Texas AgriLife Research, Lubbock.

The label on Staple notes that sulfonylurea tolerant soybean (STS) can be planted 30 days after the Staple application, but supplies of group IV STS soybeans on the South Plains are limited, and seed will may need to be ordered (see more info in the soybean section below). Brent Bean, Texas AgriLife Extension Service, Amarillo, has tested STS soybeans prior to 2000 for tolerance to several sulfonylurea herbicides

(different chemical family than Staple, but cross tolerance is good) commonly used in wheat at 4X rates. Only one of several herbicides gave any noticeable injury in two years. When wheat prices are strong, wheat is another option for Staple-treated ground as the rotation restriction is only 4 months.

Texas AgriLife Research & Extension High Plains staff that can assist with producer questions on herbicides include:

- Dr. Peter Dotray, Lubbock, 806.746.6101, pdotray@ag.tamu.edu (specializing in cotton and peanut herbicides; also crop rotations involving guar, sunflower, sesame)
- Dr. Brent Bean, Amarillo, 806.677.5600, bbean@ag.tamu.edu (specializing in weed control for grain sorghum, corn, sunflower, small grains, alfalfa, etc.)
- Dr. Russ Wallace, Lubbock, 806.746.6101, rwwallace@ag.tamu.edu (specializing in herbicides for peas, vegetables, cucurbits, etc. and effects of herbicides applied in other crops on subsequent pea, vegetable, and cucurbit production)
- Dr. Wayne Keeling, Lubbock, 806.746.6101, wkeeling@ag.tamu.edu (rotation to most crops)

BE REALISTIC ABOUT RE-PLANT CROPPING EXPECTATIONS

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. Since 2003, when producers in the Lamb Co. area tried shorter-season Spanish peanuts planted mid-June and even up to about the 25th, there has been a willingness on the part of producers to consider peanuts and even corn as replant options. "Is this what you really had in mind, a high-input catch crop?" I ask. A few of those 2003 growers thought they had figured out a smart way to make some money, but many if not most of these fields were a disappointment in spite of a relatively late fall. Most true Spanish peanut varieties require about 140-145 days for proper maturity in a normal year (maturation is dependent on heat unit accumulation). For Bailey and northern Lamb Counties typical Spanish peanut varieties like Tamspan 90, Olin, Tamnut OL06, and Spanco, planted about June 10 along with elevation and historical fall killing frost dates, will stretch typical maturity out to near the average killing frost date. This is unnecessarily risky. In more recent years Spanish has become a replant crop of interest to existing peanut producers in southern counties.

Many replant crops grow well for producers, but then the crop may sit there until cotton harvest is nearly 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.

Economics of Alternative Late-Season Crops

Texas AgriLife Extension Service economists at Lubbock have compiled crop enterprise budgets for several crops that may be useful in assessing and comparing economics of different crops of management practices. Economic information is compiled online at http://southplainsprofit.tamu.edu where you can find several aids to crop insurance, federal crop program details, as well as the 'Comparative Profitability Spreadsheet,' which contains numerous crop budget sheets for crops you might be planting either after

cotton or else late in the season. These crops include grain and silage sorghum, sunflower, soybean, and corn and corn silage. The Microsoft Excel spreadsheet can be downloaded to your computer, you enter your crop's input cost information, and then you can compare different crops based on the numbers you insert.

For further information on the website and the spreadsheet, contact Lubbock Extension agricultural economists Jackie Smith, jgsmith@ag.tamu.edu, or Jay Yates, jayates@ag.tamu.edu, 806.746.6101.

REPLANT AND LATE-SEASON CROPPING OPTIONS AND MATURITY SUGGESTIONS

Among the following crops, planting date suggestions reflect what Extension believes is a conservative but appropriate buffer against cool fall conditions and early killing frost dates relative to historically average fall weather. Some of these recommendations, especially for grain sorghum, were strongly tested by the combination of August and September cool spells in 2008 topped off by the October 23 freeze. Many prior 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.** That potential cool weather, when heat unit accumulation basically ceases for most crops, is often a greater concern than the actual killing frost date.

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 relatively "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 2 or 3 years out of 10 as unmatured crops may languish during cool weather. 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. When crop prices are strong like in 2008, this necessitates all the more making the right call on replant and late-plant decisions to capture profit potential in the market that has been lacking on many crops for a number of years.

Grain Sorghum

Numerous grain sorghum production resources for the 2010 cropping season are available for viewing/downloading from http://lubbock.tamu.edu/sorghum These resources are from a series of Texas AgriLife Extension Service grain sorghum workshops conducted repeated since 2007. You can also receive these through your county AgriLife Extension office. In addition, the United Sorghum Checkoff Program has partnered with Extension to prepare a pocket production guide for West Texas, and the full version though not yet available on line, may be requested from the Texas AgriLife Research & Extension Center at Lubbock (Trostle).

Current 2010 new crop contract prices on grain sorghum are $0.50-0.65/bushel below Dec10 corn which translates to ~$5.75-5.90/cwt.. A sample of contract sorghum prices can be obtained by calling any of the

following, noting that delivery terms and locations might influence which is best for individual producers.

Farmer's Co-op, Levelland (also Enochs, Littlefield), 806.894.8505
DeBruce Grain, Dimmitt, also other locations, 806.647.2802
Attebury Grain—Lubbock, 806.765.7223; Brownfield, 806.637.0173; Plainview, 806.293.2643; other locations
Numerous other locations particularly northwest of Lubbock such as Kelly Green, Olton Grain, Amherst Grain, Evans Grain (Kress), etc.

Grain sorghum and ethanol production. Producers frequently ask if they can contract/sell their grain sorghum directly to any of the three regional ethanol plants that are using grain sorghum.

- Levelland Hockley County Ethanol, Levelland, 806.897.0911, http://www.levellandethanol.com/grainbids.aspx; LHCE will consider contracting and receiving direct (semi trucks only) grain at the same price as their partner, Farmer's Co-op Levelland, which contracts, buys, and handles much of the grain going to LCHE Grain from Farmer's Co-op members handled through the Co-op qualifies for patronage dividends in years the Co-op makes a profit. In some instances grain contracted with Farmer's Co-op may be delivered directly to LCHE.
- White Energy provides the following information for producers interested in marketing their grain sorghum (and corn) to either High Plains ethanol plant. Direct delivery is at the discretion of the buyer, but White Energy itself does not currently offer direct sales.
    - Plainview—Wendy Strubbe, Scoular Grain, 800.487.1474, wstrubbe@scoular.com Partners with United Farm Industries, Plainview, in local grain procurement, but may consider direct purchase on behalf of White Energy. Producers are encouraged to call for the latest information on all sale and delivery options.
    - Hereford—Maxwell Enwere, White Energy, 214.751.2577. Call for possible options on purchase and delivery for corn or sorghum for the Hereford plant.

Bonus for early grain sorghum delivery. Although this opportunity would not be available for late-planted grain sorghum, Levelland Hockley County Ethanol offers an early delivery bonus for sorghum coming direct to the ethanol plant whether bought directly or purchased through Farmer's Co-op. For 2010, this bonus is $0.50/bushel if delivered by Sept. 15, and $0.25/bushel for Sept. 30 delivery. Farmer's Co-op and LHCE staff anticipate that in the future similar bonuses may be offered for Aug. 31 and Sept. 15 dates to encourage early grain sorghum planting and delivery to move forward the window during which new crop grain sorghum can supply the ethanol plant.

Texas AgriLife Extension Service, Lubbock last compiled "Recommended Last Planting Date for Grain Sorghum Hybrids in the Texas South Plains" in 2007. Though more recent hybrid picks are not listed in the guide, producers may note the last recommended planting date for similar maturity hybrids for a particular company. Contact your county Extension office or view/download from http://lubbock.tamu.edu/sorghum/pdf/lastrecsorgplantingdatetx07.pdf Almost all sorghum seed companies that market in the South Plains have supplied us with their last recommended planting date for individual hybrids.

In addition, Extension agronomy in Lubbock last distributed "Texas AgriLife South Plains/Panhandle Grain Sorghum Hybrid Suggestions," (http://lubbock.tamu.edu/sorghum/pdf/sorghumhybridpicks07.pdf also in 2007. Though a few of these top performing hybrids have been discontinued many of these hybrids are still solid choices. Since 2007 expanded dryland testing of dryland sorghum hybrids has been conducted by the Texas AgriLife Research Crop Testing program, and results for all tests are published at http://varietytesting.tamu.edu/corn&grainsorghum/resources.htm For replant considerations the dryland picks are appropriate even if limited irrigation will be used.

Hybrid selections for irrigation and dryland are based on Texas AgriLife Research Crop Testing Program field trials in the Texas High Plains. Recent irrigated tests have included Hereford, Halfway, Perryton, and Levelland; dryland test results include Lubbock, Bushland, Lamesa, Levelland, and Clovis. The above document also discusses topics not mentioned below such as hybrid selection criteria.

Grain Sorghum Hybrid Maturity & Last Recommended Planting Date—Texas South Plains

The table below is a general and conservative guideline for last recommended plantings of grain sorghum hybrids on the South Plains.

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. Medium-long maturity hybrids are not recommended for any dryland planting in the South Plains region.

	Grain Sorghum Maturity Class				
	Long	Medium-Long	Medium	Medium-Early	Early
Approx. days to ½ bloom →	≥74	69-73	64-68	59-63	≤58
Counties					
Parmer, Castro Bailey, northern Lamb Cochran	June 10	June 18	June 25	June 30	July 5
Swisher, Briscoe southern Lamb, Hale, Floyd Hockley, Lubbock, Crosby Yoakum, Terry	June 15	June 23	June 30	July 5	July 10
Lynn, Garza Gaines, Dawson, Borden, Scurry Andrews, Martin, Howard, Mitchell	June 20	June 28	July 5	July 10	July 15

How did these last recommended planting dates fare in 2008 with an Oct. 23 freeze?

For the most part producers who hit the last recommended planting date in 2008 with a particular maturity hybrid in their county received fair results, with some test weights less than 56 lbs./bu. However, many producers planted hybrid maturities that were past their last recommended planting dates (in some cases they couldn't get seed of shorter maturities), and this led increasingly to immaturity, reduced yields, and low test weights. Heat unit calculations demonstrated that cooler than normal periods August 15-20 and September 8-19 then the October 23 freeze (long-term average Oct. 31-Nov. 2 at Lubbock) slowed maturity. If a farmer planted just 5 days later than the last recommended planting date, however, for any hybrid and county, then reduced heat unit accumulation would have had a much greater negative impact on maturity than the weather. ***The bottom line? Planting date really matters!***

Typical grain sorghum hybrids: Days to half-bloom and days to maturity. Days to half-bloom is when the half of the sorghum heads in a field are in some stage of bloom (sorghum heads flower starting at the top and proceeding down the head). Some companies will rate half bloom a few days differently for the same maturity group. Knowing the range of maturity and days to half-bloom are key to effective sorghum management strategies and a producer's ability to *schedule* flowering. Once half-bloom is reached sorghum hybrids will complete flowering in a few days then proceed to grain filling and physiological maturity 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:

Grain Sorghum Maturity	Days to ½ Bloom	Approximate Days to Physiological Maturity*
Early	≤58	<90
Medium-early	59-63	90-96
Medium	64-68	97-103
Medium-late	69-73	104-110
Late	≥74	111+

*Uses ~32-35 days for grain fill to maturity (flowering to black layer) for all hybrids. This is different (and shorter) than harvest maturity.

Common Grain Sorghum Production Mistake

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, 2000, and 2003 in the South Plains. When soil moisture levels are good (5-6" 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 14,000 to 16,000 seeds/lb., thus this seeding rate is near 2.0 lbs./A for many sorghum hybrids. If soil moisture is fair (~2-3"), seed drop might be reduced to ~24,000-28,000/A. For any condition with poor soil moisture, especially as plantings approach July 1, consider even just 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.

For assistance with grain sorghum seeding rates see the basic grain sorghum seeding rate guidelines for West Texas noted in the above sorghum production guide produced in conjunction with United Sorghum Checkoff program.

For limited irrigation sorghum (6-8", typical of many producers in the South Plains) 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 (12-16"), target 68,000-80,000 seeds/A. Extension suggests you cap your seeding rates at 80,000 seeds/A in just about any high irrigation scenario, though by late June/early

July consider up to 90,000-100,000 seeds/A for non-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 ($1.30-1.60 per pound for non-Concep treated seed), growers too easily increase seeding rates as it doesn't much affect production costs. Many companies now routinely treat all seed with Concep III, which allows use of Dual herbicide (*s*-metolachlor). This adds $10-15 per bag, however, many seed companies treat all individual hybrids with Concep III to simplify marketing and warehousing. Insecticide treatments such as Poncho, Gaucho, or Cruiser—offering insect protection for 45 days and potentially up to 60 days—may add $40-75/bag.

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

Maybe not! We haven't seen this for a couple of years, but some companies in the past have offered 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 an inferior hybrid, then it is NOT a good deal. I don't think the good hybrids are going to go on sale. Pick your hybrid first and ignore the half-price seed—or earnestly any seed cost! Once you are ready to decide among two or three hybrids only then consider lower cost. If the hybrid you chose costs a little more to plant per acre, 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 or two timely irrigations at boot stage just prior to heading and flowering can substantially lift yield. Other timely irrigations may occur 1) just prior to growing point differentiation when the sorghum plant begins a 7 to 10 day process of setting your maximum potential number of spikelets per head and seeds per spikelet (this begins about 30 to 35 days after germination depending on hybrid maturity and weather), and 2) during grain fill after flowering, especially if dry.

Sorghum fertility is often by-passed in an effort to minimize costs. Sorghum requires about 2 lbs. N per 100 lbs. of grain (sourced from existing soil N and fertilizer N additions). When dryland deep soil moisture conditions are present and an adequate planting rain occurs I then expect good potential return for side dressing limited N (either coultered or knifed in or applied in irrigation water, but not broadcast on dryland fields), 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 5,000 lbs./A. P_2O_5 applications soils that test 'moderate' show inconsistent yield responses for most crops, however, if P_2O_5 tests 'low' then phosphorus requirements may approach ~40% of the N application rate.

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 as well as cover small weeds.

Herbicides and grain sorghum: Dr. Brent Bean, Amarillo, has summarized available herbicides and their use in grain sorghum. The information is posted at http://lubbock.tamu.edu/sorghum/pdf/sorghumweedcontrolguide09.pdf or call Lubbock's Texas AgriLife

Research & Extension Center.

Atrazine/propazine in sorghum then rotating to 2011 cotton: We are frequently asked about atrazine in sorghum. Technically, the atrazine label bars use on sandy loam and loamy sand soils, or for soils with <1% organic matter. A specific recurring question about sorghum is "What rate can I use and go back to cotton next year?" The atrazine 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 potential residual herbicide 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.

In contrast propazine is labeled for sandy loam soils, makes no restriction due to soil organic matter, has a 12-month rotation restriction for cotton only at the full rate (1.2 quarts/A) for finer soils, and pre-plant applications should not be incorporated on sandy loam soils. Cost will be higher for propazine, but there is general agreement that the potential injury to rotational cotton is less likely with propazine than atrazine.

Tips from producers using propazine in 2007 include increasing the pressure and even taking the recommended 50-mesh screens out to ensure flowability. Do not leave any propazine in the tanks overnight and expect to agitate it enough. Albaugh, Inc. reformulated Milo-Pro after 2007, and few if any flowability problems have been reported since 2008. But the label still suggests 50-mesh or more coarse screens and maintaining pressure of at least 30-40 psi.

Sunflower Pricing, Production, and Insect Considerations
(Prices as of June 18, call contractors for latest information.)

Sunflower contracts in 2010 continue the practice of contracting acres not pounds. Some contracts may have different language for disaster clauses, which may affect price slightly.

Confectionary contracting in 2010 was available early in the season but no further acres are being offered at this time. Split pricing is for seed size above and below those seeds that are retained or pass through a screen of 20/64". In the near future producers can anticipate an expanded selection of Clearfield confectionary hybrids including short stature hybrids.

Red River Commodities (Lubbock, TX, 800.763.9740, larrym@redriv.com). Early 2010 price ~$25/15 per cwt. Normally, allow at least 4-5% for trash. Current delivery points include Lubbock, Petersburg, Allmon (Floyd Co.), Hale Center, Plainview, with possible delivery also available at Muleshoe and Bushland.

SunOpta (Goodland, KS, 800.742.9259, mike.bretz@sunopta.com). On-farm bids may differ from delivery if producer has his own storage. Otherwise delivery to Amherst Grain in Lamb Co., 806.246.3513; or Goodland, KS. Allow at least 4-5% for trash. Some contract acres allow use of Seeds2000's 'Jaguar,' which is a Clearfield hybrid.

Oilseed Sunflower

Oilseed sunflower has several options including oil market vs. birdfood as well as mid-oleic (NuSun) vs. high oleic. Newer high oleic oilseed hybrids have been tested in West Texas since 2005, and now yields and oil content are similar to NuSun. In some cases contract prices in 2010 may specify high oleic at a premium over NuSun. Producers also have an option to plant Clearfield imi herbicide-tolerant hybrids (several companies), sulfonylurea tolerant NuSun oilseed hybrids (ExpressSun from Pioneer, Croplan, and Seeds2000), and short-statured hybrids (Triumph Seed).

NuSun mid-oleic and high-oleic oilseed. All oilseed prices have a standard base of 40% oil with a 2-for-1 premium for oil content above 40%, a 2-for-1 discount for oil at 38-40%, a 2.5-for-1 discount for oil below 38%. For example, if a grower delivers at $17/cwt. with 41% oil, then he is paid at $17.34/cwt. But if oil content is 39%, then pay price is $16.66/cwt. AgriLife Research & Extension trials in the High Plains since 2005 have averaged 40-42% oil, but late planted sunflower may sometimes drop below 38% if maturity is cut short.

California Oils (Kerry Ham, O 530.666.7871, M 530.405.6977, kham@caloils.com; West Texas rep. Damon Ferguson, Eastern Colorado Seeds, Amarillo, M 806.928.7655, damon.ferguson@ecseeds.com) is contracting high oleic in West Texas with delivery at Brownfield Seed & Delinting, 806.637.6282 (~$16.00/cwt.); Olton at Texas Best Bean, 806.285.3144 (~$16.25/cwt.) or Dalhart & Follett (~$16.75/cwt.).

ADM/Northern Sun takes delivery from West Texas:

Northern Sun (crushing plant), Goodland, KS, 800.542.7333. Delivery direct to Goodland for NuSun, currently ~$15.90/cwt for Sept./Oct./Nov. delivery). NuSun and high oleic.

ADM-Guymon, OK, 580.338.3381 (elevator) or business office (580.652.3761) for contract pricing and delivery at that location.

Texas delivery locations are not in place yet at this writing though Northern Sun typically has 1 or 2 southern High Plains delivery locations.

Colorado Mills (Lamar, CO, 719.336.8452, cty36540@centurytel.net) accepts both NuSun and high oleic in Lamar, CO. Colorado Mills also partners with SunOpta for crushing of organic oilseed sunflower.

Red River Commodities (Lubbock, TX, 800.763.9740, larrym@redriv.com). Some contracts still available for any type of oilseed, $15.00/cwt. There is no penalty/premium for oil content. Delivery locations in addition to Lubbock and Plainview are not necessarily the same as those listed for confectionary in order to keep the two seed types separate.

Oil and confectionary last recommended planting dates for Texas South Plains include a two-tiered recommendation. Kansas State University's goal for sunflower is that for best potential yield, percent oil, and test weight, the crop should mature within the frost-free growing season. Sunflower is tolerant of temperatures down to 28°F, however, we accept that late planting dates will indeed experience cold fall conditions. Because sunflower has much higher tolerance to cool fall conditions and even a light freeze, a last recommended planting date is more ambiguous for sunflower than for other crops.

Tier 1 Late Planting Date (optimum 'plant by' date)—a conservative last recommended planting date highly likely to provide for full maturity crop production in all but the worst of fall conditions;

Tier 2 Planting Date (extended)—Successful production can occur, but yields and oil content may be reduced. There is potentially less flexibility in a Tier 2 planting date the further north in the Texas High Plains. Producers in some areas have planted even a week later than this with success, but there is a significantly increased risk.

Last recommended planting dates for sunflower:

Counties	Tier 1	Tier 2
Parmer, Castro, Bailey, northern Lamb, Cochran	July 5	July 12
Swisher, Briscoe, southern Lamb, Hale, Floyd, Hockley, Lubbock, Crosby, Yoakum, Terry	July 10	July 17
Lynn, Garza, Gaines, Dawson, Borden, Scurry, Andrews, Martin, Howard, Mitchell	July 15	July 22

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 1/3 to 1/2 less than 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 here 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 AgriLife Extension Service research in 2001-2003 from Plainview and Dumas particularly for irrigated confectionary. Across a range of confectionary seeding rates from 11,000 to 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 $50/A more income with the lower seeding rate due to the premium associated on larger seed in your contract.

Yield potential trends may decline slightly during the season with later planting dates, but sunflower head moth 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 or other header built specifically for sunflower 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 to petal drop.

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.ksre.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 a big reason I often refer to head moth 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 was updated in 2009. The document is available online at http://agrilifebookstore.org, and producers may also contact the author Dr. Ed Bynum, Extension entomologist, Amarillo, 806.677.5600, ebynum@ag.tamu.edu 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 AgriLife Extension entomologist Pat Porter, Lubbock, and I concur—that sunflower growers make their initial sunflower moth spraying decision targeting the initial spray at bloom of just a few percent bloom, so as to increase chances of control. Bloom constitutes when the ray petals have opened up and you can then see 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. The updated threshold no longer cites a particular number of moths per five heads rather notes the presence of moths in the field. Some producers, consultants, and contractors essentially schedule sprays for sunflower moth no matter what. Scouting is still important, and experience suggests that once you spray you should scout ~2 days later to ensure you achieved control. 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 numerous pyrethroids (Warrior T, Baythroid, Asana, etc.), Lorsban (chlorpyrifos), but numerous growers find benefit in mixing the pyrethroid with methyl parathion for a quick knockdown in the first spray when using an airplane (though methyl parathion will be phased out in the near future). In calculating production costs I recommend that producers go ahead and budget two sprays for irrigated and one spray for dryland. Let not having to spray be a nice treat, but don't short the necessity of spraying if the moths, even at seemingly low levels, are present.

Guar

Contracts for the drought tolerant crop guar available on the Texas South Plains through Klint Forbes, West Texas Guar, Brownfield (office, 806.637.4662, klint@westtexasguar.com). This year's price is $20.00/cwt for grade #1 ($18/cwt. if planted after July 1), delivered to Brownfield. Delivery is also available at Knox City in the Rolling Plains.

Rhodia, Inc., Vernon, TX (940.552.9911, jreaves@us.rhodia.com) processes guar splits, but beginning in 2008 they do not currently contract or process any U.S. production.

Guar is well suited for dryland production on ground that has few weed problems. It is tolerant of yellow herbicides (trifluralin) 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). A label is being sought for 2,4-DB, which in research trials appears to work well. 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 is extremely heat tolerant and can take advantage of deep subsoil moisture when available even though rainfall may be infrequent. Hence 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 release Matador, and all may be planted up to about July 4 in the South Plains although June 20th would be more favorable. Seed sources are pretty well limited to the contractor or Grass Seed Services in Littlefield, which oversees production of Matador. West Texas Guar currently maintains Kinman and Lewis. Producers and Texas AgriLife Extension Service staff have reported significant field losses on one additional variety, Monument, due to stalk breakage and disease problems, and this variety does not hold up well if planted late and conditions turn moist (unknown disease affects pods, etc.). At this time we can't recommend planting Monument.

Be sure of high quality guar seed that is free of morningglories. Some guar seed in past years had low germination so be sure that year of production (preferably at least 2007) and germination are acceptable. Field observations since 1999 suggest that Lewis is slightly earlier in maturity than Kinman and Matador. Date from the early 1980s suggest that Lewis outyields Kinman, and yields for Matador is similar to both. Dryland guar yields under average conditions are about 400-1,000 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 1998-2009 that I know of required treatment insects or disease (excluding Monument which likely won't be offered anymore). Guar appears suitable for narrower row spacings, especially the non-branching Lewis variety. In the past seed costs run about $0.50-0.70/lb., but contractors may supply the seed if you agree to sign a contract, and seeding rates for dryland should target 5-8 lbs./A, the higher end as conditions are more favorable or as row spacing narrows. West Texas Guar now recommends that producers go ahead and use the higher seeding rate on dryland.

Guar is a legume, but getting it to nodulate very well has been difficult. 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. For possible

guar specific inoculants contact INTX Microbials, http://www.intxmicrobials.com, 219.474.5510, or EMD Crop Bioscience, 800.558.1003. Becker Underwood (Ames, IA, 800.232.5907) has manufactured guar specific seedbox inoculant in the past, but doesn't currently have a product that includes guar application. West Texas Guar also has carries non-specific crop inoculant for the seed that can be used for guar. Some growers have reported satisfactory nodulation with this product since 2003, and we hope that we can figure out how to get consistent results with the product. 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. Even better, custom guar harvesters and farmers air reels should be able to minimize harvest losses if they go slow enough to do a good job, but expect to pay $3-4/acre. Extension believes harvesting with air-reel headers 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 Lubbock Center or you may access them at http://lubbock.tamu.edu/othercrops/guar.php

Sesame

Drought- and insect-resistant sesame is also an alternative crop after failed cotton. A more attractive sesame market has returned for South Plains growers due to delivery points in the High Plains. Sesaco, http://www.sesaco.net, currently has over 80,000 acres contracted for Texas and southwest Oklahoma for 2010 and has many more acres available. Current base contract price for 2010 is ~$30/cwt. with several additional premiums kicking in for clean samples, minimal crack seed, and seed color.

For production, contract information, and delivery locations call the High Plains Sesaco representative Jerry Riney, jriney@sesaco.com, O 806.892.3187, M 806.778.2193 or Sesaco Corp., San Antonio, TX, at 800.737.2260. Current South Plains delivery locations include Crosby and Terry Counties with one or two additional locations anticipated. Beyond the South Plains sesame delivery is also usually available at Stamford and Vernon. Sesaco offers both the Sesame Production Guide and the Sesame Harvest Guide for the southwestern U.S. These documents can be downloaded from http://www.sesaco.net/sesame-growers-guide.htm, or call Sesaco.

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 has established 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 AgriLife Extension Service 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 AgriLife Research herbicide tests on sesame since 2004 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. Dr. Peter Dotray, Texas AgriLife/TTU weed scientist (806.746.6101) has also conducted cotton herbicide injury trials on sesame.

In general, Sesaco anticipates that for dryland production with good early season moisture, expect 500-900 lbs./A, and for irrigated production, 1,000-1,500 lbs./A.

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

Numerous vegetable crops primarily black-eyed peas can still be contracted in 2010. Price and contract availability may change weekly and where you deliver, payment terms (especially what is net to the producer after cleaning charges), etc. are important considerations. Although contractors are sometimes "full" due to early season contracting, sometimes contract acreage may not get planted or new market requests are received, thus 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. Contracting too many acres is the #1 threat to a producer's profit (e.g., 1999), and sometimes contractors may reduce prices later in the season for additional contract prices due to potential oversupply. Growing without a contract, or wildcatting, is 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 quoted prices on hailout acreage compared to early season contracts.

These contractors might have contracts available reflecting any recent changes in market demand or unplanted contract acreage returned to the contractor. 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. Be sure you understand if your quoted price is before or after cleaning charges, which typically run 5 cents a pound.

Companies/contractors active with 2010 contract acreage for black-eyed peas in the Texas South Plains are noted below. Early season contracts were in the range of $30/cwt after cleaning. Prices below reflect net price after cleaning:

Muleshoe Pea & Bean (806.272.5589, mulepe@fivearea.com), deliver in Muleshoe. Currently offering ~$28/cwt. Using California 8046 variety.

C.T. Smith/Peas Inc., Pleasanton, TX (call office first, 830.569.2140; mobile 210.867.9368, carl@ctsmithco.com, john@ctsmithco.com) Currently offering ~$28/cwt. Delivery to Tulia at Big N Feed & Seed.

E & J Agri, Inc. (James Brown), Sudan (806.227.2194, mobile 806.778.1846). Price is in flux at $28-30/cwt. Normally several contracting options are available: A) open market contract with E & J guarantee to handle peas, with potential to capture upward movement in prices, B) standard contract Grade #1 @ competitive net per cwt. price to the grower (E&J cleans), C) 50/50 mix of A & B that is half open market, half at contracted price. Other contract options are available.

Texas Best Bean (Bobby Redwine, 806.285.3144, texasbestbean@hotmail.com). Call for details; delivery in Olton.

Oklahoma Seed Producers (former staff of Texas-Oklahoma Production Co., or TOPCO), Enid, OK (Barry Johnston, 580.603.1093, barrytopco@gmail.com). Currently $30/cwt. Some black-eyed pea and other vegetable options may be available in the Texas High Plains. Delivery to Vernon and possibly Fargo, TX.

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 80-90 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.

Black-eyed peas and peanut inoculant. The same strain of inoculant, *Bradyrhizobium sp.* (Vigna), inoculates peanuts and black-eyed peas. Although most peanut inoculants do not mention the cowpea family, producers have expanded options to apply an inoculant if they can use granular or especially in-furrow peanut inoculants. Recent research on soybeans and Austrian winter peas in the Texas South Plains has shown that much higher nodulation can be achieved when the same seed-applied inoculants are sprayed in-furrow, which is the customary and preferred means of applying inoculant in peanut production. Thus some farmers have the inoculation equipment on their planters to do the same for black-eyed peas. I encourage you to consider this. Or lease a planter from a peanut farmer that has in-furrow application equipment. Previous observations on black-eyed peas and inoculants have been only for seedbox powder materials (much lower bacterial counts), which have been inconsistent if unsuccessful in increasing nodulation. In-furrow liquid product costs run about $7-8/acre. If seedbox powders are your only option, then consider a sterile peat inoculant with a sticker already in the inoculant, which has higher bacterial counts and adheres to the seed better than conventional seedbox powder inoculants. Wetting the seed will improve sticking of the inoculant, but this is impractical for BEP seeding rates if you are planting very many acres.

Pinto bean contracts for 2010 may be available from E & J Ag. and possibly Muleshoe Pea & Bean in the $28/cwt. range. Pintos are very susceptible to heat above 93 F during flowering and ideally should be planted by late April or after late June to minimize the heat. Heat-resistant varieties such as Bill-Z may be more productive under West Texas conditions when heat is a concern. Othello and Cinnabar are other popular varieties, and new releases may be available, but the increasing preference is to choose direct-cut varieties. 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." It is also available on the web at http://aggie-horticulture.tamu.edu/extension/beans/pintobeans/pintobeans.html

In addition, several of the above contractors above, especially C.T. Smith/Peas Inc., Oklahoma Seed Producers, and E&J Ag., may offer have limited contracts available on several other types of beans (including mung), peas, and small-acre seed blocks including crowder peas, pinkeyes, purplehulls, creams, 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.

Green beans are contracted in the Parmer-Bailey-Castro-Deaf Smith 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 20, needs 60 days to harvest, preferably up to 15" of irrigation. The crop cannot be planted after failed cotton where Temik was used. These green beans are not suitable for caliche ground or other ground where iron deficiency is anticipated. Currently, some remaining acres are available for July plantings (2010, $170/ton range, with five-year average yields near 4.5 tons/acre). Input costs are substantial with seed alone running about $110/A or more. Allen does harvesting and hauling, and preference is given to previous growers. Doug Dillon, 479.228.0201 (mobile)/806.481.3285 (answering machine), ddillon@allencanning.com, 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.

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 2010. Seed supplies of some popular hybrids, however, may be minimal. 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 lower susceptibility to iron deficiency; 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. 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 same Lubbock website.

Establishing summer annual forages in dry conditions—consider using a planter rather than a drill. In 2003-2004 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 in 2003 on the crop from late June through mid-October, we averaged 2.7 dry tons of forage per acre. Results were over 4 tons/A in 2004. We used a seeding rate of ~8-10 lbs./A, rather than the 15 lbs./A we would have used with a drill, which saved us about $2-3/A on seed costs.

A take-home lesson from our Dawson Co. experience is that establishment is 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 and soil moisture is marginal. In addition, grazing cattle will walk between the rows if the forage spacing is at least 20-24" hence they don't tromp the stubble and regrowth potential is improved. For many drills, especially if drilling millet, plugging 1 of 2 or even 2 of 3 drill holes may be necessary to reduce seeding rates since millet seed is so small.

Forage Sorghum Silage: Planting for silage can readily be conducted until early July so that longer season silage hybrids obtain soft dough. Shorter maturity silage hybrids can likely be planted through mid-July and still achieve good tonnage though quality may be reduced somewhat (see note on corn silage below).

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

Soybeans

Soybeans may be an option on irrigated land where cotton failed. Soybeans further north in the Texas High Plains can yield fairly well under limited irrigation if irrigation is timely (flowering to mid-grain filling). 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 primary crop 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.

Data from the South Plains region suggests group IV soybeans remain the best choice for production even

if planted in late June and early July. Though yields will decline with later planting, mid Group IV out performs group-III soybeans even when planted in early July. Regional research demonstrates that yields for maturity groups from 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 AgriLife research from the Amarillo area suggests that for each day after June 20 that soybean yield potential declines 1 bushel per day. Date 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 (9-10 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 powder 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. This in-furrow application of the same on-seed liquid inoculant delivered much higher nodule counts per plant in first-year research at Lubbock. Planters used for planting peanuts are normally equipped for applying liquid inoculant in-furrow.

As soon as growers decide they will plant soybeans, you need to locate *Rhizobium* inoculant. Some years I have found no farm suppliers with unexpired inoculant on hand anywhere in the South Plains and very little in the Panhandle. If not available, then call Becker Underwood, 800.232.5907; Nitragin, or EMD CropBioscience, 800.558.1003; or INTX Microbials, 817.905.0343 for information on how to obtain inoculum specific for soybeans.

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

Peanuts

Occasionally growers ask about late planting of shorter maturity Spanish peanuts or even shortest maturity Valencia peanuts particularly in Lamb, Bailey, and Hockley Cos. This interest has now

expanded to our southern counties and companies have actively sought late-season contracts for Spanish peanuts. Even modest yields can still gross over $500/acre (current Spanish price per ton), but keep in mind that input costs are significantly higher, which is in contrast to the goal of having low cost catch crops.

In general, peanuts are a high input crop, and that is not normally appropriate for a catch crop. Although a few individuals have spoken to the contrary, I am averse to Spanish peanuts in a replant production system past May 28 in the northwest South Plains to about June 7 in Dawson and Gaines Cos. A significant acreage of Spanish peanuts was planted as late as June 20th in 2003 in Lamb Co., but for the most part yields most often did not reach one ton. One producer in Lamb Co. reported in 2003 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 mid-June, but this is rare, represents risk, and has a strong potential for disappointment.

Let's put Spanish peanut production with late planting dates in perspective by looking at the issue of days to maturity for the common Texas A&M Spanish peanut lines Tamnut OL06, Tamspan 90, and OLin. I estimate ~140-145 days to maturity under normal conditions. For this crop planted on June 1 above Littlefield, the average killing frost is October 22nd. From June 1 then a 'typical' estimated maturity date is October 13th, within 10 days of a killing frost. And cool weather can be expected after September 20th to achieve minimal heat unit accumulation that far north in a typical year. Grade will be lower. Each missed day of planting in early or mid June is equivalent to 2-3 days of delayed maturity in terms of heat unit accumulation in late September to mid October.

I do not recommend the small-seeded runner type peanut AgraTech 9899-14 (used in the Spanish market as a high oleic peanut) which is in fact a runner peanut with maturity at least 10-14 days longer than Tamspan 90, and probably should not be planted after mid-May in Lamb Co. or late May in Dawson-Gaines. A short maturity variety Pronto, usually available from Clint Williams, could reduce Spanish maturity by at least 10 days. Pronto yielded about 10% less than the above Spanish lines in AgriLife Extension Spanish variety trials in 2007-2008.

Corn Grain & Corn Silage

Since about 2003 some short maturity corn has been used to either double crop after wheat or plant in hailout situations northwest of Lubbock, and yields with substantial inputs can still achieve 10,000 lbs./A in some cases. In recent years especially since ~2008 even more producers are considering late corn if prices are strong, which may lead to a greater return on investment and out-competes grain sorghum and other crops. Some hybrids have short enough maturity (95 day range) that can fit the production system on late plantings, but don't cut yourself short on maturity—and remember that short-season corn still has a highly intense water requirement. One company agronomist suggests that in Lamb Co. a corn maturity hybrid should be planted such that black layer can be obtained no later than October 15, which is only ~10 days before the average killing frost date at Littlefield.

As a guideline from private industry, one seed company offers that corn hybrids south of U.S. Highway 70 with a relative maturity (RM) of ~112-115 days should be planted by June 20; ~105 days RM, planted by June 25; 98-100 days RM, planted by July 5; and 92 days RM planted by July 10. This example is shared by district Pioneer agronomist David Peterson, and other companies should have a similar range of hybrids. Spring 2008 newsletters from Pioneer colleagues list examples of last recommended planting dates for Halfway, TX at July 4 for 93-day corn, and June 27, for 105-day corn. Keep in mind again, however, that planting 5 days sooner in June (or early July) is worth 10-15 days in late September or early October in terms of heat units for maturity. The risk you don't want to take is cutting yourself short on

time to properly mature the crop, especially when the price is good.

Corn for silage—Generally, the same corn hybrid planted for silage could be planted up to 10 days later if for silage. Late seeded silage corn can have similar risks as grain corn, and though the tonnage may be made, starch content hence feed quality may be reduced compared to earlier plantings of the same hybrid (Rod Carpenter, Pioneer, Farwell, TX).

Like peanuts above, corn is not a low-input catch crop as significant irrigation will be required to make a profitable yield. As a side note, a few areas are seeing some dryland corn, but much of the early positive results, I believe, are attributed to unseasonably high rainfall. For most of west Texas except perhaps the eastern and northeastern Panhandle dryland corn would be expected to fail in years with typical rainfall.

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 2010.

This publication is updated annually by mid June for the Texas South Plains. Contact Calvin Trostle.