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Alternative Crop Options After Failed Cotton in the Southern High Plains

Last week we initially discussed options for planting failed cotton to sorghum, sunflower, and soybean. With the heavy losses that occurred June 11-12 even more questions are being asked about replant options. The information below is *in addition* to the earlier information which, in particular, contained information on cut-off dates for maturity groups of sorghum, soybeans, and sunflowers. Again, keep in mind that your herbicide already down on cotton ground may dictate your options and how you manage your replanting program. Check your herbicide labels and consult your chemical representatives concerning specific chemical challenges you expect in a particular field. Rainfall amount obtained on a particular field and cultural practices (banded vs. broadcast applications; bedded vs. planted flat; additional chemical used on replanted land, etc.) will be important considerations. Also, the federal farm program may restrict what you can replant. Some info on seeding costs and price and yields to evaluate a gross potential return are provided below.

Sorghum: Sorghum seed is currently $1.00-1.20/lb with additional $0.10-0.20/lb for safened (Concep) seed. Dryland seeding rates are about 2-3 lbs./acre (20,000-30,000 seeds/acre) and 4-7 lbs./acre (60,000-100,000 seeds/acre) for irrigated. Dryland rates are equivalent to about 1 seed every 6" at the low end. The higher seeding rates may be justified when considering the potential for residual herbicide injury. Contact your seed dealer for recommendations for hybrids adapted to suit your production goals. Asgrow and Dekalb have special pricing programs, and other companies such as Novartis and Triumph are currently offering 50% reduction in seed price on selected varieties for those with failed cotton. Check with your local seed dealers for details. Conservative sorghum grain yield possibilities with current moisture prospects might be 18-25 cwt./acre dryland and 45-60 cwt./acre irrigated.

Soybeans: Note maturity group suggestions in the initial options discussed last week. Data from TAEX-Amarillo suggests that realized soybean yield potential declines about 1 bushel per day for plantings after June 20 in the Northern Plains. Historical data from Lubbock on Group IV soybeans indicate that yields decline significantly after early July planting (Table 1). Seed costs depend on the company and Round-Up Ready status. Many producers are concerned about the high water demand of fully irrigated soybeans, but soybeans can still produce attractive yields on limited irrigation, especially when we consider soil profile moisture in many areas. Conventional soybean seed prices are about 2.5 to 3.0 times the market value ($4.50/bu). Expect soybean seed to run $11-15/A then add $6.50/A for the technology fee for Round-Up Ready (RR) soybeans. Prices on RR soybeans vary. Deltapine has quoted $19.25 per 50 lb. bag plus $6.50 per bag tech fee for RR soybeans. Asgrow quoted $19.50 per 50 lb. bag plus $6.50 per bag tech fee ($17.50 for conventional). Other RR soybean prices with the tech fee included are $22/bag (Production Plus, Plainview) and $18/bag (Triumph Seed, Ralls).

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Asgrow is offering reduced soybean pricing for growers who have previously planted Roundup Ready cotton. Asgrow growers with RR cotton should get the replant back from Paymaster ($17.50 per bag of RR seed they purchased) then the tech fee would be refunded by Monsanto. Evidently one still has to pay the tech fee on RR beans at purchase of seed Inquire with your seed dealer about refunds on the cotton RR tech fee. We have been told that plenty of Group IV Roundup Ready soybeans are available.

Some growers have asked about using RR soybeans in fields where they had planned to produce RR cotton. Tolerance of RR soybeans to Roundup is excellent, and gains could still be made on long-term goals of cleaning up perennial weed patches in cotton fields. One caution about RR soybeans however, is that volunteer soybeans the following year will survive a weed control program featuring RR cotton. Such are the challenges of herbicide-tolerant crops. One may want to consider STS soybeans for planting in fields where Staple herbicide has been applied. We were informed that NO Group IV STS soybeans are currently available, but early Group V varieties can be obtained.

Brent Bean, TAEX-Amarillo, recommends planting about 150,000 seeds/acre with a planter (40" rows) and 190,000 seeds/acre if drilling. In order to drill soybeans, 40" beds would probably need to be shallow else lower pods be too low to harvest relative to the top of the bed. Often with late-planted soybeans many pods set near the ground and are hard to harvest. In this case higher seeding rates and narrower rows may encourage higher pod set which is more important with late-season soybeans. Typical soybean seed ranges from 2800-3400 seeds/lb. Thus for 40" rows anticipate about 50 lbs./acre of seed ($15/acre for conventional) plus up to $1/A for *Rhizobium* inoculant. For best results with soybeans, inoculation of planting seed is a must. Estimates of yield potential for 1999 are 30-35 bu/acre with modest irrigation levels slightly above that of cotton if planted by about June 25.

Many producers may consider soybeans as a cover crop and soil builder. Even soybean hay might be a possibility. As a soil builder, growers may reduce their seeding rates by one-third to reduce costs. Experiment station data from other states suggest that soybeans may add 100 lbs. nitrogen/acre or more to the soil, but plow up the cover before seed development. Much of the nitrogen is potentially available to the subsequent cotton crop. Because of soybean taprooting of deep soil moisture, 1999 may be a more favorable year to consider production vs. soil building after failed cotton.

Table 1. Reduction in group IV soybean yield potential from delayed planting at Lubbock

Date of Planting	Yield bushels/acre	Yield Potential (% relative maximum)
May 20	32.5	100
June 1	31.9	98
June 10	21.4	66
June 20	28.0	86

Response of soybeans to planting date in the Southern High Plains of Texas, Harvey and Brigham (1971).

.Sunflowers: Oilseed sunflower contracts remain readily available (contact Northern Sun in Goodland, KS, at 800-542-7333) although seed for the new mid-oleic oil sunflowers may be in limited. Suggested planting date cut-off remains mid-June for mid- to mid-late (105-110 day) varieties near Plainview to the 25th at Lamesa. Shorter season (85-90 days) sunflowers planting is possible up to July 10-15 near Plainview to July 15-20 at Lamesa. With the good soil moisture, sunflower seeding rates for dryland may tend toward to the high end of 12,000-16,000 seeds/acre. Irrigated seeding rates run about 21,000-25,000 seeds/acre, but industry reps suggest later-planted irrigated sunflowers should lower seeding rates toward 21,000 seeds/acre to assist maturation late in the season by increasing sunlight within the canopy.

Sunflower seed for each variety may be sold in three sizes: #2, about 6,500 seeds/lb. (225,000 seeds/bag), #3, about 7500 seeds/lb. (250,000 seeds/bag), and #4, about 8700 seeds/lb. (300,000 seeds/bag). Experiment station research from other states concludes that seed size does not affect emergence, stand establishment, or yield. Thus it is cheaper to plant smaller seed due to its lower cost. Seed costs (#4) for dryland (16,000/A or 2.0 to 2.5 lbs./acre) may run about $9.00/A with mid-oleics $1/acre higher. For irrigated (21,000/acre or 3.0 to 3.5 lbs./acre) seed cost may be about $12.00/acre, and $1.50/acre higher for mid-oleics. Recent checks on sunflower contracts were about $8.95/cwt for mid-oleics and about $8.35/cwt on conventional oils whereas the loan value is $9.00/cwt. So far, oilseed

delivery will be available in Muleshoe and Plainview. Allow $0.50/cwt for shipping to Goodland, KS. Estimated returns for dryland sunflower may be based on 1000-1250 lbs./acre and irrigated, 2000-2500 lbs./acre with good moisture conditions in 1999 favoring the upper end.

One concern about sunflowers raised by producers volunteer sunflowers in succeeding years. Kerry Siders, TAEX-Hockley Co., suggests the problem may be largely due to improper setting of the concave bars since not many have harvesting experience with the crop. For the following years Round-Up Ready cotton may be a good option to control volunteer sunflowers if you anticipate a problem.

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In addition to sorghum, sunflowers, and soybeans, we've gathered information on some other possible alternatives after failed cotton not mentioned last week.

Guar: Rhodia, Inc. of Vernon, TX, processes guar, a nitrogen-fixing legume. Until this year virtually all guar acreage in Texas (50,000-100,00 acres) was located near Vernon. West Texas Guar Contractor (i.e., Klint Forbes, CC Grain, Brownfield) contracted 8,000 A at $14-15/cwt early on, but no further contracts are available there. As of June 15, there is limited contracting of guar available through Wes Campbell, 983-3073, in Floydada at $14/cwt, enough to plant about 2,000 acres at the recommended planting rate of 6-8 lbs./A (60 cents/lb.). Guar also requires specific guar *Rhizobium* inoculant at about $1/A (e.g., Urbana Labs). Guar should be okay with yellow herbicides but plant up on the bed. Fields with ample moisture for guar have potential to yield 1500 lbs./acre or higher with 750-1000 lbs./acre or higher for dryland. Examples of guar yields around Brownfield in 1998 ranged from about 900 lbs./acre (4" rain & irrigation) to 1400 lbs./acre (8" rain & irrigation). In West Texas, guar is usually terminated chemically to preserve bean quality prior to frost then harvested with a combine.

Guar is a good soil builder, and lint yield after guar is reported to increase notably. Volunteer guar next year might be a problem, but Round-Up Ready cotton may handle it okay (or atrazine/crop oil with sorghum). It appears that no guar beans are available without contracting production so using guar as a soil builder at lower seeding rates is probably not likely.

Cowpeas (blackeyes), pinto beans, mung beans, etc.: Cowpeas have been planted in the past after failed cotton, however, due to the most recent federal farm legislation, caution is in order. Blackeyed peas are considered a fruit and vegetable (FAV) crop by USDA-Farms Services Agency (FSA), and have very specific production guidelines. Before planting peas (for yield or for a green manure crop), it is HIGHLY recommended that you visit with your local FSA office for clarification of regulations pertaining to compliance procedures. If peas are harvested for yield, then a subsequent small grains crop (wheat, oats, or barley) IS ALSO REQUIRED to be taken to yield (grain, grazing, or haying). Ernest efforts must be made to plant and carry the small grain crop to harvest; otherwise Agricultural Market Transition Program (AMTA) payments will be jeopardized. In order to participate in such a program, the county has to be designated as a double-cropping county.

For 1999 we found no contracts available through Muleshoe Pea & Bean where existing acreage under contract was reduced because 1) contract price has fallen from near $20/cwt to $13/cwt since early this year, and 2) seed availability is tight. Contracts may be still available through James Brown, E&J Ag., in Sudan. Optimum planting dates for some cowpea varieties has passed according to Roland Roberts, TAEX-Lubbock, but others may be planted past mid-June although maturation could be slowed by cooler early fall weather and quality may be reduced. Cowpea is a good

soil builder comparable to soybeans but with perhaps lower water requirement. As of June 17th Richardson Seed in Lubbock has a very limited supply of black-eyed pea seed. On June 16th Carl Smith of Peas, Inc. (Pleasanton, TX; 830-569-2140) indicated that new harvest blackeyes south of San Antonio could possibly be available on the High Plains the last week of June at about $45/cwt if demand warrants. T&S Produce in Brownfield has handled their seed in the past, but no current arrangements are in place. Some low germ (70%) blackeyes may be available. If Peas, Inc. ships to the High Plains farmers can expect to pay for seed upon delivery.

On 40" rows production seeding rates are 30-35 lbs./acre, but one might reduce seeding rates for soil building to near 20 lbs./acre ($8/acre) plus the all-important inoculant specific for cowpeas ($1-2/acre for LiphaTech's EL seedbox treatment, or Urbana's granular RhizoFlow or seedbox RhizoStick).

Pintos and mung beans: We know little about possibilities for mung bean or pinto bean. The contracts manager for Muleshoe Pea & Bean said pinto beans at $13-14/cwt is not a viable option. We imagine these types have possible uses as a soil builder, but seed costs are potentially quite a bit more than conventional soybeans planted at a reduced seeding rate.

A special caution on castor beans: We have received several inquiries about castor beans. Castor bean is not a true bean (not a legume), and thus does not biologically fix nitrogen. Castor plants produce toxic alkaloid compounds in stems and leaves. Due to preharvest seed losses, volunteer plants or seeds in forage or food crops the following year could be fatal if consumed. Due to potential problems with elevator contamination and subsequent volunteer problems in fields, castor beans are probably not a good option.

Hybrids of forage sorghum/sudan, forage sorghum, and pearl millet: A few producers may be interested in considering forage production with these drought tolerant forages if grazing or harvesting can be done. Manage the seeding just like sorghum. For conventional materials with 16,000-17,000 seeds/lb. for 40" rows on irrigation, target 15 lbs./acre; 10 lbs./acre on dryland. For smaller seeded sorgo-sorghum/sudans, cut the seeding rate by up to 20%. These forages may be planted to July 10 to 15, but for later plantings consider straight forage sorghum which could be either ensiled or grazed after frost without prussic acid concerns. Tall forages may offer some weed suppression. Most conventional sorghum/sudans will range from $12 to $23 for a 50-lb. bag. Newer materials such as brown mid-rib sorghum/sudan (lower plant lignin content, $17-25/bag) or photoperiod sensitive sorghum/sudan (no reproductive stage until late September, about $18/bag) may offer some advantage. Remember, harvest (or graze) at boot stage or earlier. Once heading begins forage quality declines drastically. Hybrid pearl millet, which can be fed to horses, costs more per bag, but seeding rates for 40" rows are about 6 and 8 lbs./acre for dryland and irrigated.

See our website at: http://taexsoilcrop.tamu.edu