

Cotton Newsletter, August 2013, Volume 4, Number 2

The drought and availability of irrigation water continue to challenge New Mexico growers. Apart from these problems, the cotton season started on a good note and has continued without major incidences of pests or diseases. Recent monsoon rains will be a great help to cotton as the crop enters the boll forming stage. The cotton production situation in New Mexico is still experiencing fluctuations due to unstable lint prices. About 30,000 acres of cotton has been planted in NM, which is about a 35% drop in acreage compared to 2012.

Please, send your comments and contributions to John Idowu (email: jjidowu@nmsu.edu; phone: (575-646-2571). Previous editions of the Cotton Newsletter are posted on <http://aces.nmsu.edu/ces/ifcpm/cotton-production.html>

PROSPECTS OF GLANDLESS COTTON

Animal and plant protein will be in high demand as the world population increases. One way to meet this protein demand may be through the glandless cotton seed. Glandless cotton varieties produce seed that have no or low amount of gossypol.

This is in contrast to the conventional cotton seed that has high levels of gossypol. Gossypol is toxic for most animals and humans. Ruminant animals such as cattle can tolerate gossypol to an extent; therefore, conventional cotton seed is primarily used in limited amounts as cattle feed.

Figure 1 shows a close-up view of conventional and glandless cottonseeds. The dark spots on the left picture (Figure 1A) are glands that produce gossypol and other chemicals that make conventional cotton seeds toxic. These glands are either absent or very few in glandless varieties (Figure 1B). With the absence of significant amounts of gossypol, the glandless cottonseed becomes a very valuable cotton product.

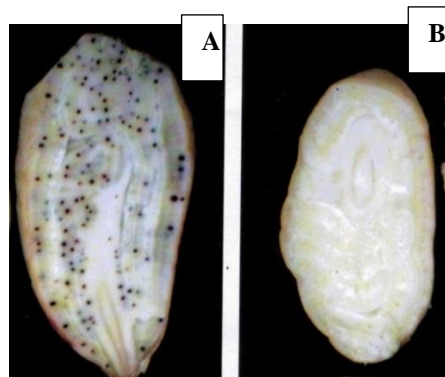


Figure 1. Cross section of conventional (left) and glandless (right) cottonseed.

NEWSLETTER HIGHLIGHTS

PROSPECTS OF GLANDLESS COTTON

BAGRADA BUG – IS IT IN YOUR COTTON?

GINNING UPDATE

COTTON PRICES

Glandless cottonseed has more than 35% protein and can be used for human consumption, aquaculture feeds, and other high value products.

What if the cotton seed had as much or more value than the lint? This goal could be realized in the next 10-20 years through the development of glandless cotton varieties. One bale of cotton produces about 700 pounds of seed. Three bales of cotton (480 lb/bale), will produce about 2,000 pounds of seed or about 1,400 pounds of dehulled glandless cotton seed kernels.

What is the value of glandless cotton seed? The NMSU Agricultural Experiment Station and Extension Plant Sciences Department are exploring the utility of glandless cotton seed as a source of protein. Research efforts are focused on different applications.

Several varieties of glandless cotton are being evaluated at several locations in New Mexico. One of our projects is focused using glandless cotton seed as a protein replacement in aquaculture feeds specifically for the salt water pacific white shrimp. Current prices of fish meal exceed \$1,100.00 per ton. Glandless cotton seed protein as replacement protein would cost less for shrimp producers and be more sustainable.

Food technologists at NMSU also are experimenting with glandless cotton seed in different food products. These include high protein snacks, brownie mixes, meals for baking, butters, flavored cooking oils and flavored salad toppings. Specialty oils, biofuel, glycerin, soaps could also be produced from glandless cotton seed.

Glandless cotton seed is gluten free, has zero cholesterol and an amino acid complex very similar to soybeans. It has a nutty flavor and could even compete on the nut market with a price ranging from \$1.00-\$8.00 per pound. While the exact value of the glandless cotton seed is not yet known because the demand has not yet been established, projected price estimates of glandless cotton products are illustrated in figure 2, based on the market prices of similar high protein nuts.

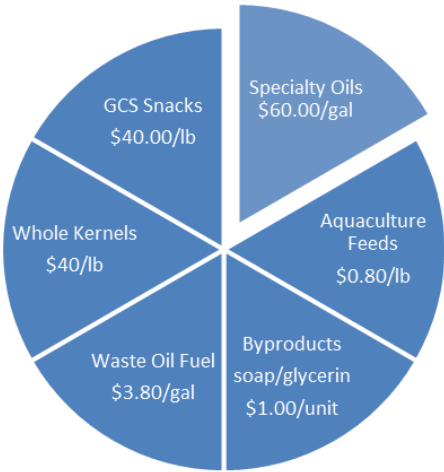


Figure 2. Potential values of products produced from glandless cotton seed.

Report by Tracey Carrillo (Assistant Director, Campus Farm Operations) & John Idowu (Extension Agronomist), New Mexico State University, Las Cruces, NM.

BAGRADA BUG – IS IT IN YOUR COTTON?

If you are not familiar with *Bagrada*, perhaps now is the time---and for several reasons. This is an invasive, destructive plant-feeding insect (Figure 3) probably originating in Asia where it likely hitch-hiked aboard trade goods bound for southern California. Since it was first detected in Los Angeles County in mid-2008, it has become widely established in southern California, southern Arizona (2009) and an increasing number of counties in New Mexico (Luna, Dona Ana, Otero, Socorro, Valencia, and Santa Fe) since 2010. In September, 2012, *Bagrada* was found in a COTTON field in El Paso County, Texas. While this tiny stink bug has been associated mostly with weeds and vegetable crops in the mustard family (e.g. cabbage, bok-choi, kale, broccoli, mustard greens, radishes, even horseradish), it also may feed on and damage COTTON, corn, sorghum, wheat, millet, canola, potato, some legumes and other crops. If any of these are part of your farm's crop rotation cycle, it's time to add *Bagrada* to your field scouting target list.

Adult *Bagrada* bugs (Figure 3) are only 5-7mm long (abt. 1/5"); much smaller than our native stink bugs. Mostly black, their backs are marked with white and orange. Females are larger than males; both sexes can fly. As 'bugs' they have needle-like mouthparts in the adult and all nymph stages that permit the bugs to penetrate host foliage and suck the sap, usually leaving tiny white spots along leaf margins. Unfortunately, damaged foliage usually curls and dies; young plants are soon killed. When handled, nymphs and adults release a pungent odor---typical of 'stink bugs.'



Figure 3. Adult *Bagrada* Bug

Unlike other familiar stink bugs, female *Bagrada* can lay up to 100 tiny, sticky eggs in the soil. These hatch in 4-8 days, producing wingless but very mobile nymphs that initially resemble minute 'lady bugs' with brownish heads and red abdomens. As the bugs feed, molt and grow, they become blacker and add external (non-functional) wing pads visible in mature nymphs. Several generations may occur in warmer regions with peak numbers usually occurring in late summer and fall. These bugs can be quite active; running, flying and mating on sunny days. They should be fairly obvious on the top foliage of the host plants. They could be easily detected using 'beat sheets' or 'beat buckets' on sections of cotton rows if the use of sweep or aerial nets becomes impractical.

As invasive species with unusual egg-laying habits, these bugs do not seem to have any effective natural enemies in the U.S.; their populations may increase rapidly, especially later in the growing season. Spiders kill some *Bagrada* bugs, but the bugs seem distasteful to birds. In addition to scouting for these potential pests, commercial producers of any host-crop should review insecticides labeled for that particular crop to determine if ‘stink bugs’ are included, if treatments should be necessary.

Contribution by Dr. Carol Sutherland, Extension Entomologist, NMSU & State Entomologist, NM Dept. Agriculture

GINNING UPDATE

On behalf of the New Mexico Cotton Ginners Association, we wish to thank our Speakers and Sponsors for the invaluable contributions which make this year’s conference a great success. Our guest speakers during the conference were **Ed Hughs** (Research Leader, USDA Ginning Laboratory); **Tracey Carrillo** (NMSU, Assistant Director of Campus Farms Operations); **Craig Brown** (National Cotton Council, Senior Government Relations Representative); **Marc A. Lewkowitz** (Exec. Vice President of Supima); **Russell Sutton** (Vice President of Domestic Sales, Lummus Corp); **Harrison Ashley** (Executive VP, National Cotton Ginners Association); **Greg Townsend** (Area Director of USDA Classing Office); **Richard Kelley** (President of National Cotton Ginners Association); **Brent Murphree** (Regional Communication Manager , Cotton Board); **Paul and Brenda Offutt**.

Our sponsors were All-Tex Seed Company; R&C Supply Company; Artesia Alfalfa Growers Assn. Smith Fans, Inc.; Calcot LTD Samuel Jackson, Inc.; Feazell Gin Service, Inc.; Supima; Jess Smith & Sons Cotton LLC.; West Gaines Seed, Inc.; Langston Companies; Mesa Farmers Co-op; Nationwide Agribusiness and RSM Company.

Finally, we want to thank all our members for attending the conference and for their support and cooperation over the years.

Contribution by Alberto Pando, President, New Mexico Cotton Ginners Association

COTTON PRICES

	Prices Received by Farmers (Upland cotton)* cents/pound	Cotton "A" index* cents/pound
November, 2012	68.40	80.87
December, 2012	71.30	83.37
January, 2013	72.20	85.51
February, 2013	75.30	89.71
March, 2013	75.30	94.45
April, 2013	75.40	92.68
May, 2013	75.30	92.74
June, 2013	75.60	93.08

*Source: National Cotton Council of America

Publication Team: John Idowu (jidowu@nmsu.edu); Tracey Carrillo (tcarrill@nmsu.edu); Jinfang Zhang (jinzhang@nmsu.edu); Robert Flynn (rflynn@nmsu.edu); and Jane Pierce (japierce@nmsu.edu).



_____, John Idowu, Extension Agronomist, New Mexico State University is an equal opportunity employer. All programs are available to everyone regardless of race, color, religion, sex, age, handicap or national origin. New Mexico State University and U.S. Department of Agriculture cooperating.