There was a National Cotton Council DVD playing prior to the meeting starting at 1:05 p.m. Dr. Staten thanked everyone for their attendance, especially his colleagues from Mexico. It serves to illustrate how the multiple program entities work so well. Every entity runs things independently yet we are able to work well together. Dr. Staten requested that the presentations are as brief as possible. Individual program reports will be tomorrow at the Action Committee meeting. Native confirmation is of particular importance and there is a lot of ground to cover today.

Dr. Staten requested that everyone introduce themselves:

Leighton Liesner, ACRPC, AZ;
Jim Ed Miller, Producer, TX;
Bruce Tabashnik, University of Arizona;
Bobby Sloan, Producer, NM;
Keith Deputy, Producer, TX;
Jim Schoenholz, USDA APHIS PPQ, MD;
Larry Antilla, ACRPC, AZ;
Jim Rudig, CDFA, CA;
Michelle Walters, USDA APHIS PPQ CPHST, AZ;
Greg Murphree, Cotton Board, AZ;
Ty Whitten, Monsanto, MO;
Jesus Escarcega Tarin, Chihuahua, Mexico;
Juan Carlos Ramirez, Chihuahua, Mexico;
Mario Zaragoza, Mexico City, Sena sica, Mexico;
Larry Smith, TXBWEF, TX;
Lizandro Gonzales, USDA APHIS IS, Reynosa, Tamaulipas, MX;
Ruben Tapia, USDA APHIS IS US, General Consulate Juarez, MX;
Bill Norman, NCC, TN;
Nathan Moses, USDA APHIS CPHST, AZ;
Alfredo De La Torre Rivera, Juarez, Chihuahua, Mexico;
Earl Andress, USDA PBWRF, AZ;
Ricardo Toribio Mora Armenta, Mexicali, Baja California;
Eduardo Gutierrez, USDA-APHIS-IS BW, Mexicali, Baja California;
Mike Whitlow, ACRPC, AZ;
Leobardo Morenez, Durango, Mexico;
Richard Zink, USDA APHIS CPHST, CO;
Jerry Levitt, USDA APHIS, AZ;
Ernie Miller, USDA PBWRF, AZ;
Joe Friesen, SCNMPBW, NM;
Mike Bruderman, NCC, AZ & CA;
Ted Boratynski, USDA APHIS PPQ, El Centro, CA;
Charles Allen, Texas AgriLife Extension, TX;
Larry Turnbough, Producer, TX;

Greg Wuertz, Producer, AZ;
Bob Hull, Producer, CA;
Clyde Sharp, Producer, AZ;
Craig Brown, NCC, TN;
Tish Tamulis, ACRPC, AZ;
Dennis Palmer, Producer, AZ;
Robert Staten, PBW, AZ;
Don Parker, NCC, TN
[* there were a few names that I just couldn't make out on the recording]

Dr. Staten called the meeting to order and asked Dennis Palmer to come up.

Dennis discussed an article that featured Dr. Staten and Larry Antilla in reference to the Pink Bollworm Program in Farm Press. He passed it around for everyone to view. Dennis expressed gratitude for everyone's attendance, especially from Mexico. It has been gratifying to see how the United States and Mexico have been working together. Our next challenge is to properly identify the sterile versus native moths concerning the DS Red. We need to know exactly. That is the main charge for the Technical Committee. There have been so many that have gotten us to this point.

Dr. Staten requested Don Parker to give announcements. Don expressed gratitude for the minutes, our interpreters and the Cotton Foundation's assistance. Don advised that there are no special dinners or receptions this year. Don requested everyone leave their contact information. Please give Don correct information for everyone so we can make sure everyone receives notices.

The video that was playing in the meeting room prior to the start of the meeting was put together by the National Cotton Council in an effort to help others understand this program and its success. The Action Committee meeting starts at 8 a.m. tomorrow.

TAC roll call is as follows:

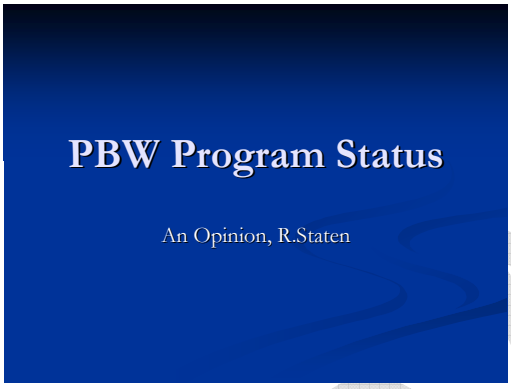
Present - Charles Allen	Present - Larry Antilla	Present - Ted Boratynski
Present - Craig Brown	Present - Joe Ellington	Present - Robert Hull
Present - Jim Ed Miller	Absent - Thomas Miller	Absent - Steven Naranjo
Present - Don Parker	Present - Jim Rudig	Present - Robert Staten
Present - Bruce Tabashnik	Present - Jim Schoenholz	

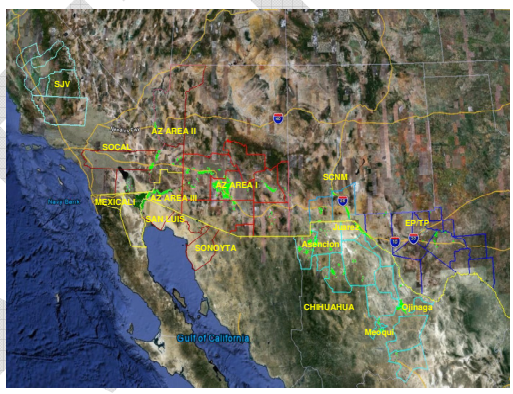
Don advised Chairman Staten there was a majority present.

Dr. Staten would like to address the minutes. If anyone has concerns, bring them up now. (There was none). If there are any minor corrections, such as spelling, let me know. Can we have a motion?

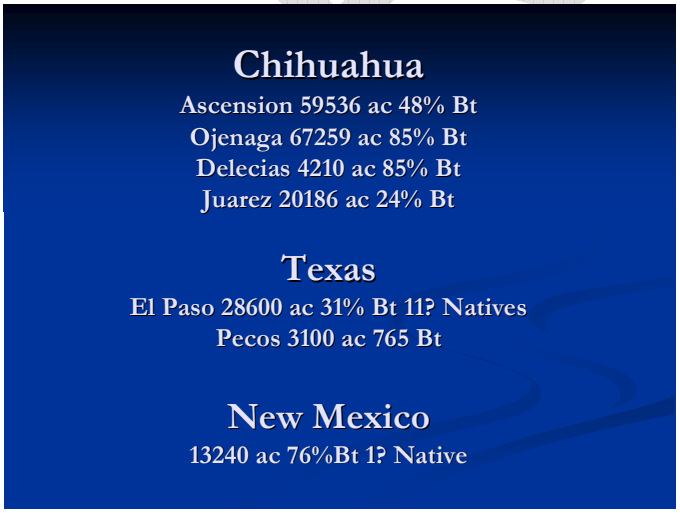
M/S/P **Bobby Hull moved and Craig Brown seconded that the minutes pass as a final. The motion passed unopposed.**

Dr. Staten summarize the overall position of the program and address the issues of most concern this year more than any other year. We will have to get a lot of direction and activity to get answers. We are hoping to get very close to an absolute surety in what we are calling sterile and what we are calling native moths when we have identified a positive pink bollworm. At no time have we put as many insects per acre in this program over such a large area. That is probably why this has become a symptom of concern. It may well be that what we are doing is correct, but we will have to prove it to ourselves.



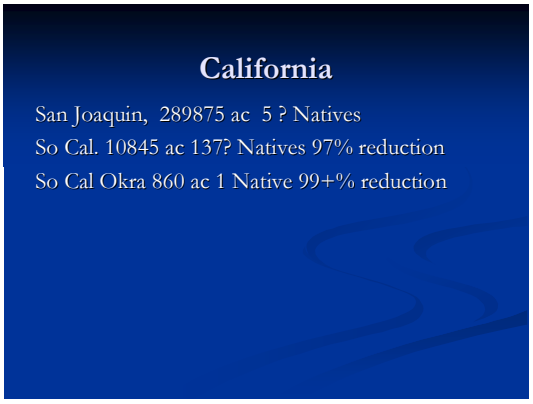


Dr. Staten showed a map of the Pink Bollworm Program areas. There were no natives found in Chihuahua. It is a very heavily sampled area. The only sterile release left is in Juarez and El Paso. There is a limited release in the Trans Pecos area.



These figures are estimates due to his e-mail crashing. Last year we had a very large number of non-dyed native moths in the Fabens Texas area. It was all treated with Rope. There were no natives captured in the Fabens area. This verifies the wisdom of what we did there.

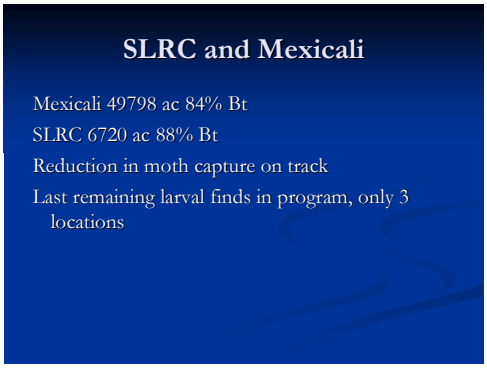
The Pecos area is largely one block of organic cotton near Van Horne, in an area we should consider for Eradication Confirmation mode next year. Unless there is any movement later this year, we are good in that area.



In New Mexico, we are in very good shape, but have a concern in the very north corner of El Paso. The NM TX line runs right through the middle of it. It was all in the release zone. We thought we dodged a bullet mid-season. That area has four non-dyed moths. The last one in NM was a very robust moth, which happens this time of the year. It is in the freezer, and if we can get a gossypol analysis, we will certainly look at it. We want to treat that little block as one block next year regardless of where the state line falls, and be very careful with it. There is a lot of variation in culture there with a checkerboard of organic cotton. We want to protect it, while protecting the whole area. This is not an indication of a failing. We had an incident and we are moving on.

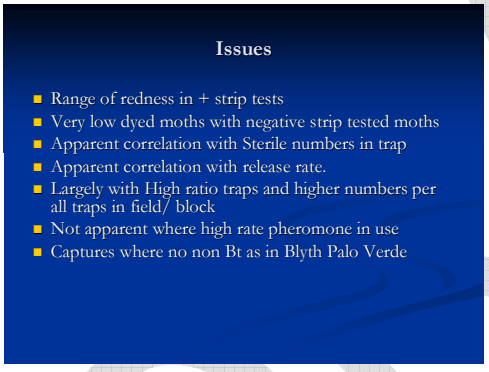
Leighton Liesner advised that they had moths in Coolidge, which have similarities in what we are seeing over a lot of this program. There's a 48% reduction from 2009, but there was a significant period where we were ahead of 2009, which totally correlated with how many sterile insects we captured. Ninety-percent of these finds were within the sterile release zone and located in traps with large numbers of steriles.

The River Expansion had thirty-five natives, which was a good reduction, with two percent in non-Bt. Yuma is doing very well. It is part of the cotton ecosystem that Bob thinks about with San Luis, Mexicali and Yuma. There have been no non-Bt finds in the vast majority of that area. Leighton confirmed there was not one in non-Bt in Yuma. The San Joaquin had five natives there and way down from last year. Southern California had very good reductions. Okra had one native for the year. Ted called this morning and advised that there have been a couple reported in the Niland area. That is very good, so we are doing very well there.



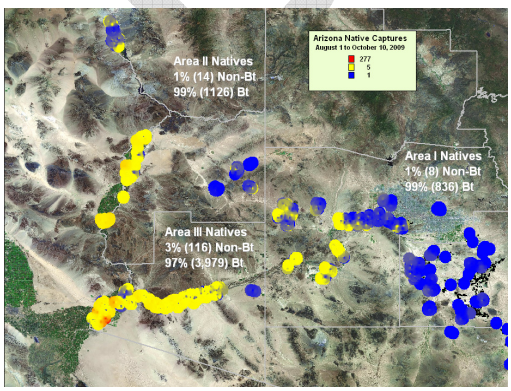
Mexicali has done an incredible job. Imperial Valley, San Luis, Mexicali, Blythe, and Parker are probably the best habitat and the most desirable for pink bollworm. With Mexicali at 84% Bt and San Luis at 88% Bt, reduction of moth captures are on track. Dr. Staten reported at no time during October were they less than ten-fold below the previous year. They are doing a very good job of suppressing that population.

It is critical to continue the momentum going throughout the entire area. Dr. Staten recalls there were only three locations with larvae in the entire Mexicali area with 55,000 acres of cotton with a fairly large chunk of non-Bt cotton. They are living with the standard refugia requirements, so they have higher ratios. The population is obviously suppressed. If we can keep this trend going, they will have some ID problems next year if we do not solve them now.



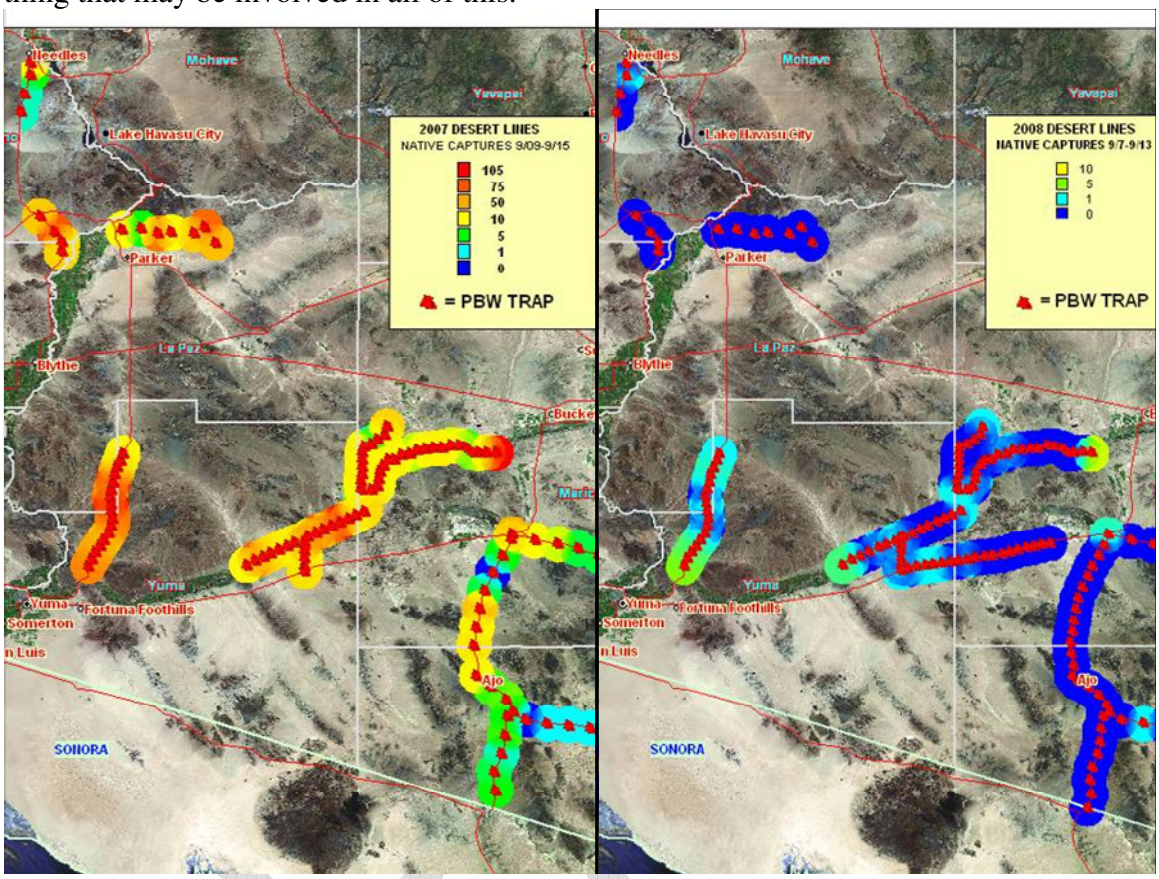
We will need to address the concerns over dye depletion, and think about how this applies to what you have seen and how it meshes. When you have a range of redness or dye in the sterile insect populations, what are the bottom limits of that range? Over the season, if you strip tested every moth that you got, you will notice a wide range of dye. There are those that are of concern.

There were several instances of low-dyed moths in Arizona, Texas, as well as San Joaquin. They were red in a strip test, but you could not see red in the moth right next to it on the strip test. They were identical in appearance, low in scales, etc. Are we seeing a moth that is living long enough to have metabolized all of the dye? Or are we looking at a potential sterile progeny?



There is usually a correlation, in Arizona in particular, that we have been watching this. Leighton has done some spatial analysis. It is not apparent where any high rate pheromone system was used. As a matter of fact, we had virtually no moth capture in Indio. There is residual in that Rope for a long long time, and apparently it did give us some of that. We did not get a capture in Faben's. We Roped all of

Faben's. Larry did not get captures in Yuma. Larry roped all of Yuma. That is another thing that may be involved in all of this.



Lastly, we have Blythe at 100% Bt. We had shadows of non-marked moths found in areas like that. Those are the questions that we need to think about and address. Jim, would you like to review the San Joaquin.

Jim reported six natives were caught in the San Joaquin Valley. The phenomenon of a poorly dyed sterile is not new, but has been more dramatic this year. The number of steriles stood out in comparison to the number of natives in the same trap, as noted by San Joaquin's primary entomologist, Dan Keaveny. He does all of the taxonomy for their ID work and been involved with pink bollworm since the early 1970's.

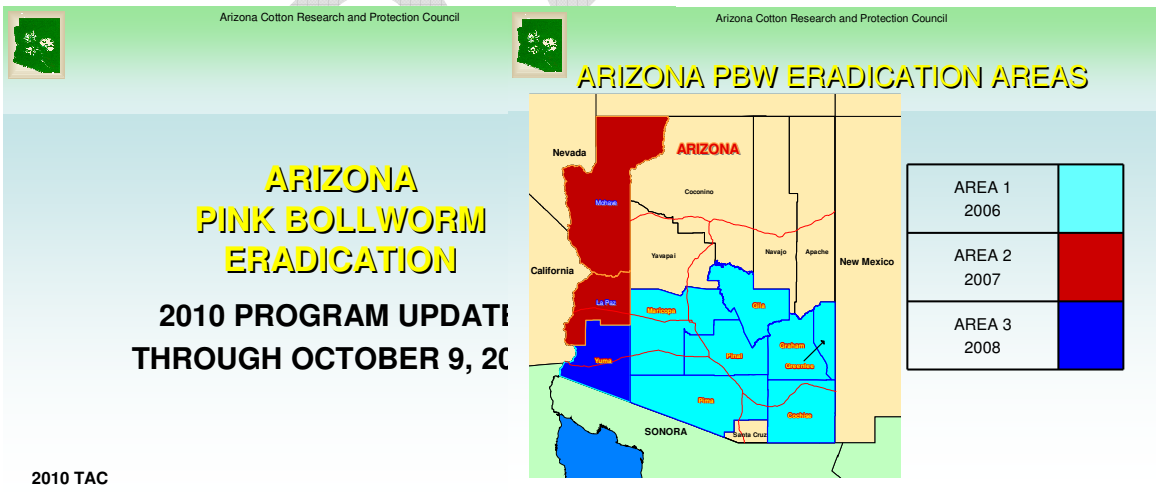
Out of the six that were trapped, there was one that Dan felt was of medium size. All of the other moths were small. They looked like poorly dyes steriles, but when he ran a simple chromatography test, he could not see any dye. As a result of that, he had to call them natives even though his gut was telling him that they were sterile. The lowest number of steriles that we caught in a trap with a native was thirty-nine; the highest number was three hundred and sixty-four.

San Joaquin releases over defined sections. A few of these moths were in adjacent sections, where steriles move on over and off the primary release section. Through out the season, on these six native moths, we caught over 81,000 steriles. We had a very high sterile ratio in there. We were way above ratios.

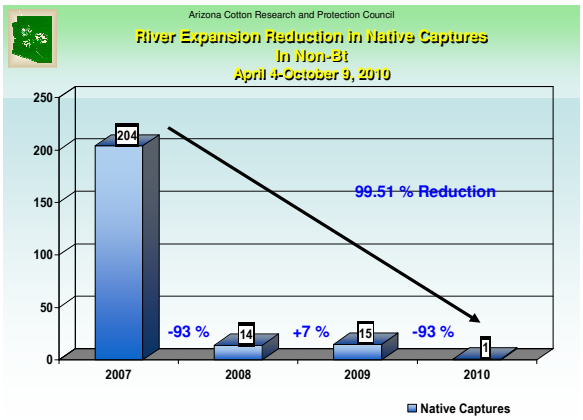
Dr. Staten inquired if he has anything further about the Blythe area. We caught 135 natives to date in Southern California.

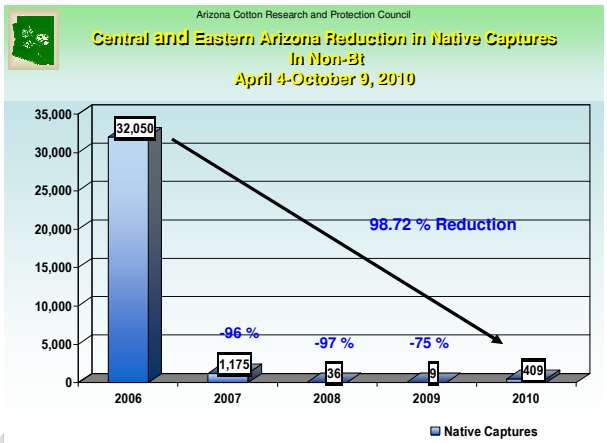
Upon inquiry, Jim advised roughly sixty-percent of the cotton in San Joaquin Valley is Pima. We have not seen a correlation in San Joaquin in most of the years that we have trapped to where we could identify any particular preference. Last year, we trapped three hundred eighty-one natives in the San Joaquin Valley. Over eighty percent came out of one 100-acre field in the immediate vicinity, and all of that cotton was long staple.

Ted advised that in years passed, late season, you could see migration in southeastern California or Mexico, but you didn't see that this year, did you? Jim replied he did not. He answered that it is not unusual in the San Joaquin Valley to pick up late season natives. Those are ones that the taxonomist refers to as bombers. They are big, healthy, dark, full-scale, 9-10 mg, sometimes 11 mg moth. We didn't have any at all this year. Bob asked how many sections Jim will be releasing on next year. Jim answered approximately about 30 sections because they will be buffering some of the farms.
Dr. Staten requested that Larry Antilla to give his presentation.



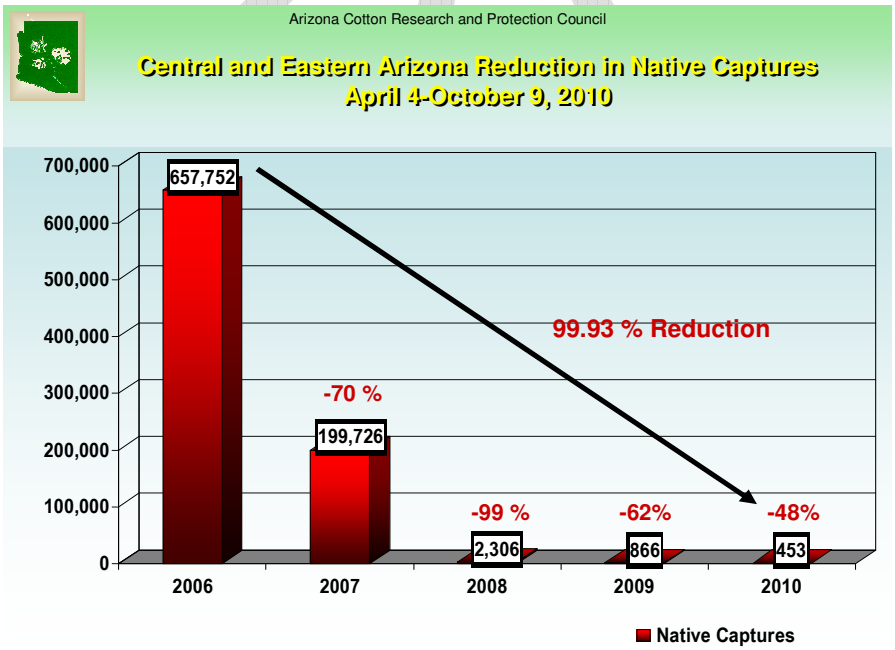
Larry showed how the three areas are broken down in Arizona. Area I is done. Area II finished this season. Area III (Yuma) will be completed next year.
Larry discussed Arizona's acreage, citing the 202,000 figure. He noted the 9,000 acres of non-Bt which is up from last year.

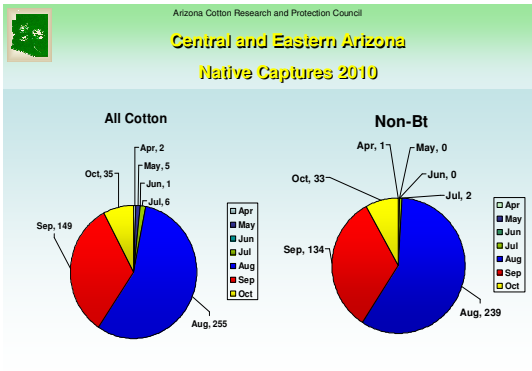


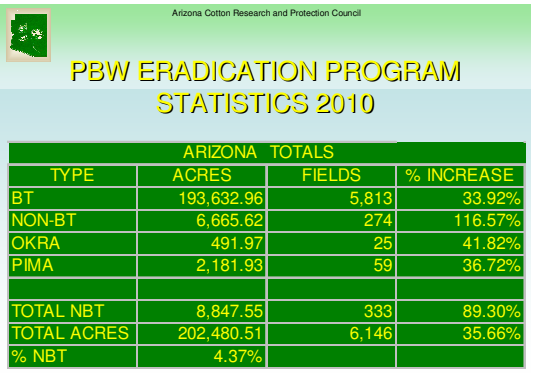


This is the reduction over time which has been very encouraging. If you look at 2009 and 2010 though, our total 'native' captures, unfortunately there is a problem.

If you are talking about non-Bt cotton, we only had nine captured in 2009 and 409 in 2010. If this were in reverse, we would not be worried at all. We would have potential natives or mis-marked steriles in Bt cotton with no harm no foul. Unfortunately, virtually everything we have found has been in non-Bt and that is the problem. Upon inquiry by Clyde, Larry advised that he did think that not putting Pheromone Rope out was a contributing factor. We think that the pheromone has a much longer period of residual over time than we ever thought before. With no pheromone, there is nothing to mask the captures of pink bollworm whether they are native or steriles.



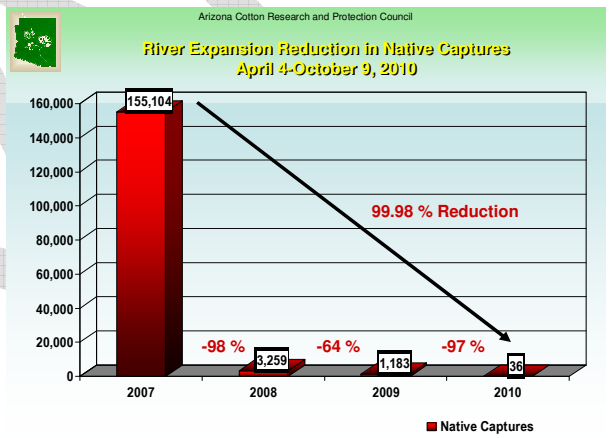




ARIZONA TOTALS			
TYPE	ACRES	FIELDS	% INCREASE
BT	193,632.96	5,813	33.92%
NON-BT	6,665.62	274	116.57%
OKRA	491.97	25	41.82%
PIMA	2,181.93	59	36.72%
TOTAL NBT	8,847.55	333	89.30%
TOTAL ACRES	202,480.51	6,146	35.66%
% NBT	4.37%		

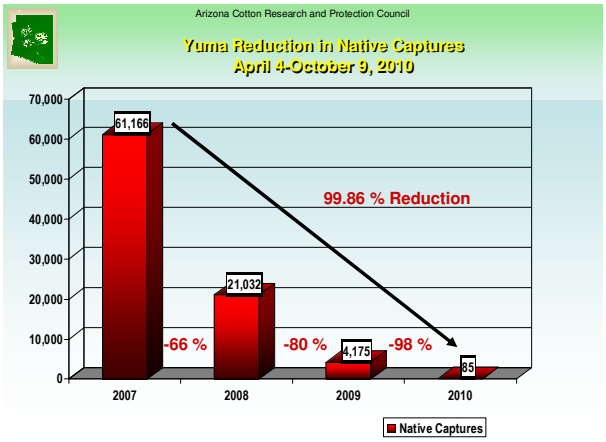
This will give you an indication of when these were captured. The vast majority of all of these insects were captured in August, September and October. This is also where we have the highest amount of sterile build up. Also, you would think that you would get the highest populations of natives later in the season. This was not the case. This may or may not be of any comfort to us.

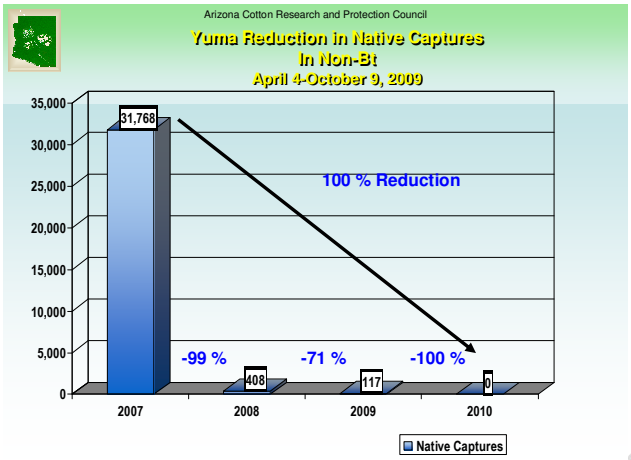
The River Expansion, the northern two counties (LaPaz and Mohave), have a good reduction once again in 2009 and 2010.



We've only caught one in non-Bt in that area. That's more of a normal reduction that we would look for.

We are in the third year of the program. The program actually began in 2008. This was a pre-program year in 2007. There is good reduction. This is encouraging. This has all been Pheromone treated, so low pink bollworm pressure and Pheromone may work the best.



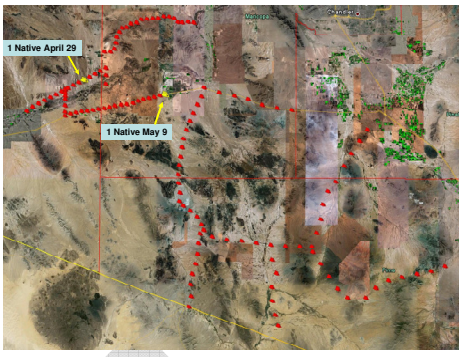


This is another picture of what you will see. In Central and Eastern Arizona, the River Counties and Yuma there is a 100% reduction. There were no larvae found.

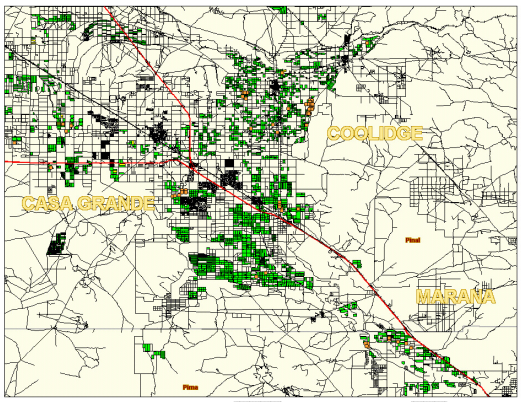
Arizona Cotton Research and Protection Council

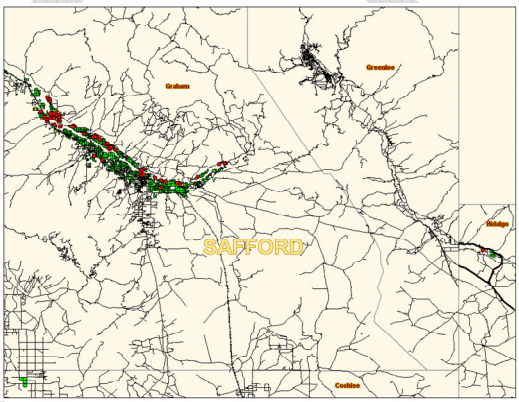
ARIZONA
PINK BOLLWORM ERADICATION PROGRAM
SUMMARY BOLL DATA 2010

Central and Eastern (Area 1) Boll Data					
Year	Samples	Total Bolls	Total Larvae	% Infested	Reduction
2006	767	55,367	1,126	2.03%	
2007	709	40,075	31	0.08%	97.25%
2008	322	13,240	2	0.02%	93.55%
2009	272	8,325	0	0.00%	100.00%
2010	512	16,050	0	0.00%	
River Counties (Area 2) Boll Data					
Year	Samples	Total Bolls	Total Larvae	% Infested	Reduction
2006	19	1,900	784	41.26%	
2007	50	4,750	31	0.65%	96.05%
2008	123	4,200	0	0.00%	100.00%
2009	131	3,275	0	0.00%	
2010	93	3,675	0	0.00%	
Yuma (Area 3) Boll Data					
Year	Samples	Total Bolls	Total Larvae	% Infested	Reduction
2007	54	2,650	44	1.66%	
2008	132	3,550	7	0.20%	84.09%
2009	107	5,300	2	0.04%	71.43%
2010	116	2,900	0	0.00%	100.00%



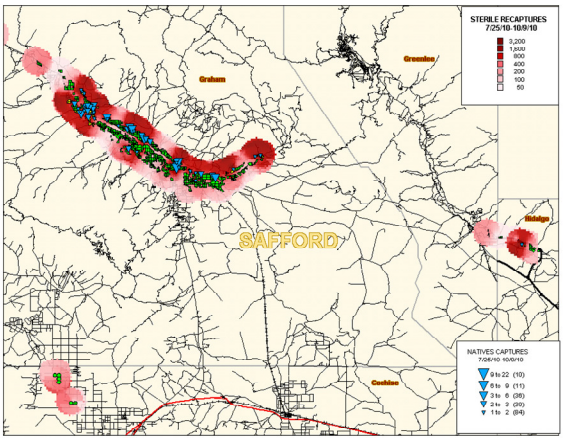
This is our Desert Trap Line from western Arizona moving into the Central part of the state. It also runs near the southern part of Arizona along the border. We have run the Desert Trap Line for several years. This year we only had two captures (one in April and one in May). From what we are seeing, there is no indication of any movement.





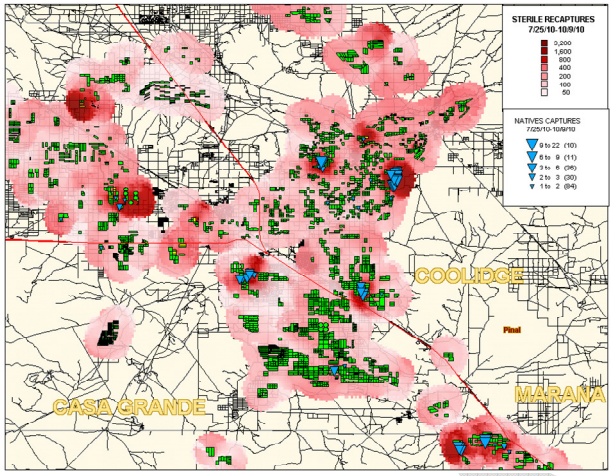
We were so proud of Dennis in Safford with only two captures last year the entire season. These red dots represent the moth captures that we have had in Safford this year. We cannot say that they are steriles. Notice there is no pattern.

The Casa Grande area was also discussed. Larry advised there is a pretty good scattering amongst the entire area even down into Marana, with the highest number near the Coolidge airport. Again, nothing to indicate an infestation and there was a lot of boll sampling. Upon inquiry, Larry answered that in early September there was a capture in Virden. Larry showed different slides of the specific cotton growing areas in Arizona where the captures occurred. There was a good scattering of these captures in Yuma (all in Bt). The only thing we are catching is in non-Bt.

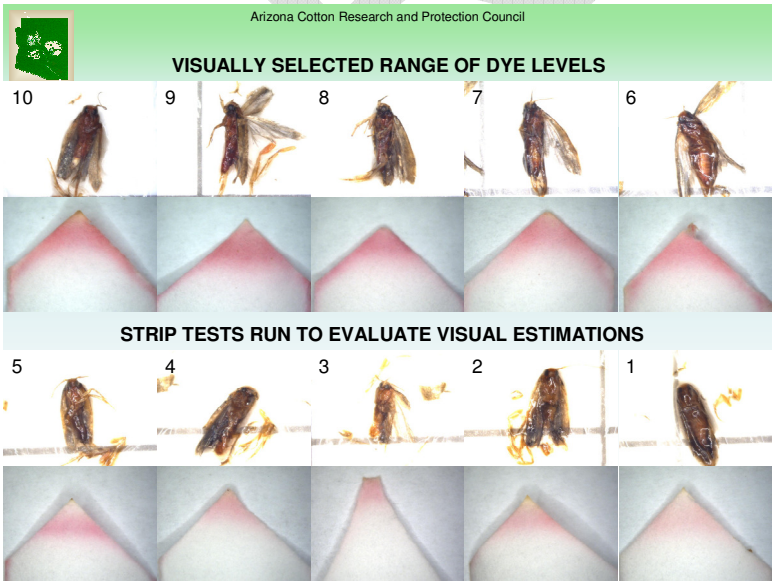


The lower right triangles represent native captures. The upper legend reflects a total

sterile recapture. Blue diamonds are actual moth captures. Superimposed over in a thematic manner is the total number of sterile moths captured in that area. Higher numbers are in excess of 3,000+. You will see a pattern. Almost everywhere you see captures of "possible natives", there are very high release rates. Notice, in the Virden area there are very high release rates as far as steriles.

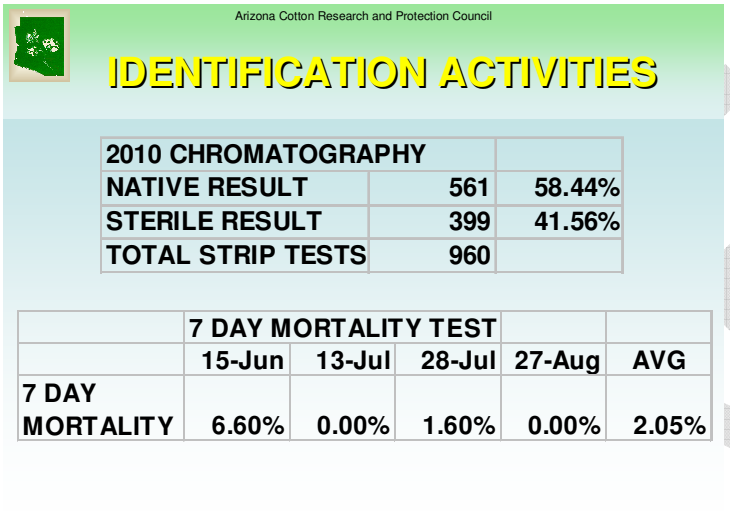


Going into the Central part of the state, the Coolidge area is where we have the highest numbers. Notice how high the sterile release is in conjunction with the insects we have questions about. In Tonopah, you can see the same pattern. In Wenden Salome, there isn't much going on. Going into Mohave, there are a few, but lesser amounts of release because you will notice it was a Bt area, as well as Parker and Cibola. Finally, then on into Yuma, there is a pretty thorough general pattern of release, and we see a higher release rates over the small acreages that were in non-Bt during the course of the season. With all of these instances with the exception of two instances, we had a ratio of very high numbers of steriles, certainly above the 61 ration in all of the areas where we caught questionable moths. From the standpoint of native to sterile, we were okay there, but certainly not where we are talking about over 450 moths scattered all over to give us concerns to such a degree that we can't say they are steriles. Larry asked Leighton to discuss the quality control slide.



Leighton advised that when we have a moth that has questionable dye or no dye, we crush up the moth in about a half mil of acetone. You move that solution up the paper so that it concentrates everything on the strip. We wanted to be able to explain what they see in the traps. We looked for ten moths visually that had different levels of moths. This is all visually done. We ran strip tests on them. These are the results.

We ran 960 strip tests, and 561 had a native result, and 399 had a sterile result. In terms of quality control, we think that it may be the high quality of moths we are getting out in the fields in Arizona. We ran four different series at the airport and collected moths right out of the release tube of the airplane before it took off. We took them back to our office, transferred them to cold storage in vials, and then counted seven days in an incubator. We think these are outstanding results. These are leftover moths in a hopper and had a 1.6% percent mortality for seven days. We think this also helps to explain some of the things we see here in Arizona.


Arizona Cotton Research and Protection Council

IDENTIFICATION ACTIVITIES

2010 CHROMATOGRAPHY		
NATIVE RESULT	561	58.44%
STERILE RESULT	399	41.56%
TOTAL STRIP TESTS	960	

	7 DAY MORTALITY TEST				
	15-Jun	13-Jul	28-Jul	27-Aug	AVG
7 DAY MORTALITY	6.60%	0.00%	1.60%	0.00%	2.05%

Larry advised that we think there are some very interesting results that have been found to lead the discussion on what the explanation or concern is.

Jim Rudig asked Larry about differences in release rates or recapture rates. Larry clarified, he meant recapture. The other interesting point Larry ran into while looking at his data for last year, was looking at the total sterile recapture in central Arizona. This year it was almost 1.2 million. Remember, this is late season, in July and August. You would have expected the pheromone to have already played out. There were three plus times more recapture than 2008 or 2009.

Dr. Staten yielded the floor to Larry Smith and Larry asked that Edward give the presentation. Larry advised that they have had quite a bit of reduction from last year to this year. He advised that they caught a couple more a few hours ago. Larry said that he will give more in his presentation tomorrow. Speaking of the depletion problem, he requested Edward to give the presentation.

Larry Smith advised that he especially appreciated Leighton's particular slide on the moth dye. It is so hard to find color in these moths. At times, when you get the strips under the microscope, you may be looking at fibers off of the strip to find that color. It is very difficult to find color in some of these moths. We have caught thirteen and we are calling them natives, but it's sort of the gut feeling that Jim talked about earlier, where you feel that they are steriles that have lost their color.

Edward stated that the El Paso / Trans Pecos area has been having issues with this. We would test the samples for longevity regarding the life span of these moths. We kind of have the same results. The longer these moths live, the less dye they would have on the test strips. Tests were obvious that there was dye depletion. It has been a challenge on personnel running QC when some of these things are more of a judgment call. A lot of people are concerned. We have the pinkies on the run. We need the tools to finish it. We need to do something different. This thing is dragging out because we are making judgment calls and there's hundreds of thousands of dollars on the line. Upon inquiry, Edward stated that we are picking up more moths mostly south from the ones that we caught on Friday.

Dr. Staten said that you err on the side of conservatism. If you have another tool that is independent of this marker, it will assure that you will get an accurate assessment of the situation. Dr. Staten had Michelle perform a statistical analysis. If we assumed our dye system is capable of finding everything down to one in a million, we could improve it by five fold with another technique that is only ninety-five percent accurate for the marker (whatever you are using), whether it be rubidium, gossypol analysis, that is independent of the red dye in the moth. That is really the ballpark we are after. There is a profound effect of having an independent test as far as identification of native moths. When discussing gossypol analysis, you have to remember that there is no cotton product in the pink bollworm diet at all. They (Monsanto) were very generous in working with us on some preliminary analysis, even though they are not profiting at all. Dr. Staten is very appreciative of them, in particular, Robert Roth, their Chemist. Graham has been most gracious. Dr. Staten will provide a brief summary.

A year ago in winter, we sent samples to Monsanto and this is the results. We didn't have a good source of native that weren't in a drop zone, so we went to Toreon and our colleagues helped us gather traps. By time we got the moths, they were two weeks old.

Gossypol Analysis, R. Roth

Torreon 2 weeks 09	26+	9-	Double/triple handled
Fabens Texas 09	24+	11-	Double/triple handled
APHIS Mass Reared RED	0+	35-	No handling
Torreon 24-72 Hours ST	53+	0-	Trap to ST to analysis
Mexicali Boll Box 2008	13+	21-	battered

We took them off of the traps and put them in a paper in an envelope. We took each one of them off with a fresh toothpick so there was no mixing any DNA, but the moths were not in the best condition. They were then shipped from Phoenix to St. Louis. Twenty-six were positive for gossypol with nine negatives. The Faben's moths were handled a little differently. They put them on a plate to look at them carefully underneath the microscopes. They are taken out

of the trap and put on the plate and then in a folded up piece of paper. The APHIS moths are placed into single vials unhandled and live. They were red. They had the dye in them. They were not analyzed with the first group. The Mexicali moths that came out of boll boxes were two years old. They had been in the freezer a long time and were badly dehydrated. Dr. Staten is not surprised that Faben's and Torreon were not one hundred percent. The chemist advised that sometimes he had trouble in "not getting enough bug" and stated that may have been more of the problem. The APHIS moths that were sent have not been run through. We took the moths that came in traps from Torreon late and did the determinations on the trap, dissected the genetalia, put them in, ran the strip test, and sent the strip test to Monsanto. The strip tested vial was used for the digestion chamber to put it into the mass spec and lo and behold we got 53 positives and no negatives. There was a very good reading of gossypol compared to APHIS moths, which were reared with no cotton in the diet, and we were at zero. There is promise that if we looked at your moth from Fabens, that has been strip tested, and it has not been handled too much, we may have been able to tell you if it came from the cotton plants around that trap. It still does not answer the question of whether or not it was an F1 sterile. Given the numbers of moths we are looking at F1 steriles are remotely possible, but we are looking for the remotely possible because of the numbers we are looking at. When you are looking at one hundred million or more steriles in a year, you are really looking at extreme far ends of a normal curve. That is the challenge we face here.

An F1 sterile would be the progeny that made it through the field from the cross between two steriles or a sterile and a native. It would carry inordinate amounts of chromosome damage, but because it came through the field, it wouldn't have any dye. It would be very sterile. Most of them can't fly. There is a paper by Ernie Miller and myself and a few others (1984). We had addressed the issue in the San Joaquin. With their release rates, we felt we could account for at most ten percent, but we couldn't duplicate that in cage trails in the San Joaquin, so we thought that they probably weren't trap competitive. That's an issue we also need to readdress.

Craig Brown asked if Bob is confident that an F1 DS Red will carry the gene. Bob said yes. Craig was asked to elaborate on his question. Craig advised that if you are looking at the F1 generation off of the dyed moths, which would have or may not have much dye, but an F1 off of a DS Red, will carry the DS red gene? Bob answered yes, and advised that the DS Red moth is a dominant marker. Additionally, the gene or trait itself has been introduced at two different points in the chromosomes. Your chances of getting anything to happen and getting through a screen there when you've already gotten through a screen with the red dye would be the best of all worlds. With a DS Red moth you can also get a pretty good assessment from PCR work as to whether or not it was an F1 outcross or an F1 sterile by sterile. That is very elegant technology. Dr. Staten feels it is very important.

Jim Rudig asked when Dr. Staten did the test in '84, if he was able to get an F1, was there any size differential in an insect that was raised in cotton as opposed to a lab reared insect. Bob advised there were no F1's reared through cotton. The only progeny we could look at were reared through the laboratory only. We took eight layer cages and the number was six thousand, and produced huge numbers, harvested all of those, because we were looking for rare individuals. It is a very low reproduction rate. The only other thing we did, was put cages in the San Joaquin and introduced very high numbers into those cages, and harvested large boll samples. We could never actually produce a field moth. Look at the numbers we were dealing with then. Look at the insect we are dealing with now. Look at the numbers we are dealing with now. We are looking for rare events and rare events cost us money.

Jim stated that if we were having F1 phenomena out in the field, he would expect that insect to be bigger than what we are picking up in these traps. Bob said not necessarily, especially when you consider the damage load you would have, having had both parents having random chromosome damage on different parts of the gene. That insect would have the highest possible chromosome damage level. Most of those insects that he (Ernie) would find in that study could not even fly. Ernie stated that is correct. Bob said this was native four. Ernie believes during the course of the season we released over a million insects with a 50-50 ratio. As Bob said, the lab is where we generated numbers and got progeny. The other thing is the ratio of male to female was about 2:1. It might even be a little higher than that. Again, the deformity level was very high.

Tabashnik asked Bob what his interpretation was. Bob answered the Dr. Robert Roth felt very strongly that by the time that insect got into digestion vial there was too little of it there. There was too little tissue to get a gossypol reading. Fabens was not know to be wild insects. Mexicali came out of bolls in the field. Now they were two years old and had been in a freezer for two years. He couldn't say whether or not gossypol would hold up in the freezer that long. There is no question to Bob that this is nowhere near a finished state.

We have, in the series that has gone to Monsanto right now, 48 slots, which Bob divided into five treatments and nine individuals per treatment. We have 9 of the earliest of Larry's Coolidge moths in July. We have 9 from a much later stage. We have 9 moths that are straight out of the rearing facility. We have 9 moths that are rearing facility released and held, and then only those that were recaptured 13 or 14 days later went in (so they had been on cotton plants with cotton nectar). Upon inquiry, Bob advised that we did not have any that were reared on cotton. Those are the kinds of studies that have got to come about.

We contracted a chemist recommended to us by Yves Carriere. He does not have all of the same equipment as Monsanto. He is now using Torreon moths getting very good positives. But when I threw him the red moths, he said that the red color itself was

interfering with the gossypol curve. That did not happen before. That has to be solved. One of the questions is that Michelle Walters and Rick will have to do a dye series and a gossypol series if we are going to pursue this technology, whether you do it, or whether we do it at the U of A, or whatever we need to do. We will have to make sure that very very tiny traces of dye that you can't see in a strip test might interfere with the gossypol line, and make sure that doesn't happen. That's where the contract chemist is. We are not real excited with the turn around, but finding a chemist with the instrumentation (mass-spec) is going to be no trivial task. We have tried working with the Arizona State chemist. Larry advised he got one e-mail.

The other issue we have on hand is rubidium. Being in the winter, we would want to rear some moths for a number of generations on the rubidium diet to make sure it's not going to effect production. That is more work that needs to be done. There is good published data on rubidium. There was a very elegant study where they used high rates to the extent that he could even measure rubidium and spermatophore. It is an elegant tool. It may be expensive but it needs to be examined.

Dr. Staten requested that Don advise where we stand on the possible regulatory issues concerning DS Red.

Clyde asked what kind of costs are we talking about and what are the problems with rubidium? Bob reported that it's huge. Ernie has put inquiries in. Ernie advised that there are about four different grades of rubidium. He may have an answer tomorrow. Bob Hull asked what exactly is rubidium. Dr. Staten advised that it imitates Potassium, is a rarely occurring element. Dr. Staten and Michelle Walters went into further details.

The only thing that would answer the most questions would be a genetically marked insect that unique genetically from anything in the field. We have no library from what we used to have as far as Bob knows. There might still be stuff at 40 degrees, he's not sure. Genetic mapping is probably not a good avenue, which leaves us with, can we use a transgenic insect. We tried to find other genetic markers for pink bollworm. Bartlett looking for conventional genetic markers (and went on to name a few), but they were not stable. The transgenic insect is the only thing we have on the horizon that would answer two questions. Everything we talked about from rubidium to gossypol and so on would tell us that the moth came from the facility or the moth did not come from the facility. It would not answer the F1 question.

Don stated that the biggest obstacle we faced was the organic issue. That simply stated says that no genetically modified organism can come into contact with organic production or they will loose their certification. Now if it's a part of the national program, then they don't loose their certification, but they cannot market that year's crop as organic. Their first question to us is how far do these things fly? (as far as a buffer).

How do we place buffers around the organic to be able to use DS Red in the program. That's pretty much where we stopped everything last year.

Craig Brown asked if there's a USDA certification process for organic cotton. There's an organic cotton industry that relies on certification to market their product. Do you think the bigger problem with DS Red would come from USDA or weather or not the industry was willing to accept the modification? Is it a regulatory or marketing issue in your opinion?

Don was not sure. USDA's nation organic program's goals and rules at this point would totally prohibit that. They did not seem to be a little bit flexible in their thought process. To further clarify, genetically modified, in their definitions, could mean anything genetically altered in a manner that would not have occurred naturally. It has nothing to do with science. For example, I asked if there was a need for water and reduce the need for nitrogen; they said that it would still be excluded from the organic program. It has nothing to do with any inherent dangers. Organic standards state that it cannot be genetically altered.

Tabashnik asked if they consider the sterile insects genetically altered. Dr. Staten answered that the issue was taken off the table. When you expose something to irradiation, you are breaking the chromosomes. That is what you are doing, so there is no good logical argument that you can use to defend that position from a biological perspective. Dr. Miller put together a book of our experiences in trying to develop DS Red and addressing what transgenic technology really is, how it really works, and how it plays out. It gives you an experiment you can run in your kitchen to genetically alter a bacteria. The technology is there. It's that simple to do it. He outlines that experiment in the book. Transgenic technology is used everywhere.

Upon inquiry by Craig Brown, Dr. Staten advised that for the long term security, not just the United States, how are we passing up this type this type of technology. Craig stated that the company that developed the DS Red technology is not banking their future on pink bollworm. Dr. Staten advised that their primary interest is in mosquitoes. Craig expressed concern and stated that it may be part of our strategy to expand our emphasis more than just on the pink bollworm moth and look at pests in general. Dr. Staten advised that one of the best scientists will be in Washington next weekend. It would not hurt for people like you to have some conversations with him if at all possible. Dr. Staten thinks that we need to change the dialogue and where the dialogue is occurring. Larry Antilla contributed that he can't understand the rational, but if you assume that we are not directly releasing pink bollworm on organic crops, whether we release them 5 or 10 or 20 miles away, from an organic standpoint, we have drift of pesticides in minute quantities all over creation. How can they assume that everything in this world would remain pristine, from the point of having a rational discussion. Don Parker contributed that he thinks that the rational discussion will have to revolve around totally eliminating

technology that has not been developed yet. The phrasing and wording, and whenever we think of invasive species coming in, forward those issues to APHIS and what type of hindrance a rule like that could put on technology to protect us from invasive species. Tabashnik stated that's one way to address and deal with all of the issues on release. Another alternative is to develop an alternative genetic marker. He was not sure of the time frame or investment, but that appears to be an easy alternative to dealing with the situation. Bob stated that is the first reassuring thing I have heard from a geneticist in a long time from a geneticist. There are two or three avenues that we will have to examine rigorously. We may not necessarily find an answer, but we can develop some direction to try and solve this. Dr. Staten requested we take a 15-minute break.

There are three or four things that we need this Committee to help us get to before we go to the issue of sterile release equipment, which is extremely important. [BREAK]

Dr. Staten said that there things that need to be done in at least two if not three categories. First of all, the DS Red issue is obviously extremely perplexing. There is a lot that needs to be done with it. Some of it is political, and some of it is biological. The vast majority is political. There is some work that would be extremely valuable in looking at the selecting DS Red line or doing outcrosses and re-selection to get the most viable possible marked insect you can get. That is a piece of scientific information. Far more important is an issue to resolve the barriers to its use. The Tec Committee needs to understand is that it's going to be beyond just the realms of those of us in the Tec Committee.
The Tec committee should ask via resolution the AC for a task force to address this issue with resources over and above anything that we may have in the Tec Committee. Dr. Tabashnik might be on this task force. Dr. Staten thinks we are going to want to have the understanding that this needs to be done at as high a level as we can reach it. Dr. Staten requested input from the other members.

Dr. Tabashnik advised that before we get into the political arena, maybe there are some technical issues we can discuss. What about using Rope instead of steriles in some of these areas. If we are right and they are steriles, then we shouldn't catch any moths as all. Dr. Staten advised that Mr. Antilla would not allow it. Craig asked what the practicality is to that. Dr. Staten advised that we will want as much of the combined technology as we can get. We worked very hard at running without steriles in NM and only working with pheromone. The only place that we have actually used only Pheromone to eradicate is certain areas of Chihuahua. There are more vigorous winters, and considerable lower biopotential in certain areas. For example, Dr. Staten would recommend that Larry apply Rope in addition to steriles but would not advise to stop steriles from the routine. Dr. Staten used to have a running battle with a manager in the San Joaquin and we did not do that.

Bobby Hull asked if the Rope is allowable to use in the arena of organic use. Dr. Staten advised that the Rope is the only pheromone that is organically certified. Upon inquiry if

the red dye has always been a problem there, Bob replied that if the problem is there, the level was low enough that it did not create a concern of major importance. It has been debated at length. Upon inquiry, Bob reported that the dye has not changed. The best person to address that would be Ernie. There was one time we considered changing the dyes because of manufacturers more than twenty years ago. There is always an issue. Just like a pheromone formulation when a company changes some inert ingredient, there is a small amount of that that takes place, and you are always at risk of that. There were hundreds of thousands of insects we looked at last year as they went out the door. Dr. Tate was doing this with Leighton. It was a very high number. Many years ago, in San Joaquin, an employee rotated out of a supervisory task and his task was to look at 10,000 insects per day. He left shortly after that. Jim advised that it is really not a big issue, when you are catching hundreds and hundreds of natives, to pick up small number of what is considered poorly died moths. When you get down to these low numbers, now it's an issue.

Bob advised that they are concerned in Juarez. There has been a lot of time spent talking about it. The reality is that there have been some judgment calls and we need far more subjective information.

Larry Antilla stated that one of the issues relative to Pheromone Rope is that probably some different formulations. We know that they are not long lasting and have to be applied repeatedly are not inexpensive. In Arizona, the labor issues in getting the Rope out could be enormous. The mechanical transplanters have been a big benefit, but are slow. There are disadvantages to, and that needs to be figured into the mix. Dr. Staten advised that this is an incredibly complex problem and we are doing significantly well. There is a gamble in changing course right now and he would not advise it. If you want to do some experiments in Toreon or Lubbock, that would be fine.

Don Parker stated that prior to the regulatory issue (about three years), there were questions as to competitiveness and that was our main concern. Dr. Staten advised that we cannot get it into that facility for next year, logistically. There are some questions that need to be raised about competitiveness and that needs to be worked on. We really need CPHST to step up to the plate and work on that if we are going to go forward and that needs to be done simultaneously with going after some of the political questions, as opposed to waiting until those questions are answered. Don stated we have two big issues.

Dr. Tabashnik stated that another possible technical solution to avoid the political arena would be to look for genetic markers traits that are already there and do a complete genetic analysis. It might be probabilistic, in other words, if you look at ten different markers, the probability of APHIS insect having certain trait might be fairly high compared to a field insect. That's another way to go to avoid the legal and political aspect. Dr. Staten asked what the source of native moths do we have across the world to

deal with this? We don't have them here. That's what we are working against. There may be enough material to do that kind of thing in storage at CPHST, but there may not be. Dr. Tabashnik advised that he has quite a few frozen pink bollworm over the last decade. Dr. Staten said then we've got it. That's a second avenue. What kind of time frame are we talking about in doing the work? Dr. Tabashnik said that he was not sure, and the funding level would be a factor. If you want to set a couple scientists full time it may take six months to do it. Dr. Staten advised that if someone could convince ARS that is a priority, it may be useful. Dr. Staten advised that there is no question that we need to find a number of avenues. Rubidium is relatively simple. Dr. Staten had not thought about the fact that there is a lot of frozen material in Tucson from all of the resistance studies. That alone makes it a viable avenue.

Bobby Hull stated that he felt it would be a good idea to make a primary motion to set up a task force seeking solutions to our inability to make full standard applications of eradiated insects on organic cotton fields. Bob asked if he was proposing that the task force would also address the DS Red issues, or would this be a separate task force or a separate group. Bobby Hull advised that he feels it's all one task force, and they may divide the workload up, but they certainly need to work together anyway. Craig advised there are a number of different issues concerning false positives. Bruce brought up several. The biggest unknown is if you decide that DS Red is the answer, Craig feels before you make that commitment, you need to have a lot more information going to that approach and very practical questions and political questions to be answered, any of which could make it unfeasible. Craig suggests that this task force would concentrate strictly on DS Red, so that the Action Committee would then know what its options are. Dr. Staten advised there are two things. A group of us within the realm of technical committee should be addressing the questions that Bruce has raised and questions we may have about gossypol and those things. That should be done by the Tech Committee members and other. Dr. Staten prefers that be separate because the questions around the use of transgenic insects are so vexing by themselves and so specialized, they are above the means of the Tec Committee. Dr. Staten would fully support it, and wants to see some things pushed. Bruce is pushing some things very hard from a technical perspective. Don Parker advised that there is a motion on the floor. Bobby Hull withdrew the motion.

Ted Boratynski expressed concern regarding permits and the facility can only put out one type of moth. Dr. Staten advised that regardless of whether or not you deal with Mexico, we haven't solved our own problem. If he were sitting in Mexico listening to this discussion, he would tell them not to bring him in now. Dr. Staten said he would want us to go solve the problem and come back with most of the answers. (Hector nods his head yes). We are going to have similar questions in California and elsewhere. The biggest barrier that we have a chance of solving or dealing with is the barrier in our own government. Dr. Staten requested that a motion be made to form this task force and that the Tec Committee asks the Action Committee to pursue this.

M/S/P **Craig Brown motioned that the Technical Committee make a recommendation to the Action to make a task force specifically for DS Red. Bobby Hull seconds and the motion passed unopposed.**

Dr. Staten requested that another motion be made concerning gossypol and rubidium with a push for a good genetic analysis. The Technical Committee should make a motion that this technology be pursued, and in addition to that the Technical Committee should have two or three as a sub-committee in an effort to bird dog and work with however many people to try and get this done. It would be two phases. Bob would like a motion for support of rubidium and gossypol. There was some discussion. Bob said he would certainly want Bruce involved with that.

M/S/P **Larry Antilla motioned that we pursue alternate methodology concerning the additional technology marker of rubidium and gossypol analyses. Jim Rudig seconded and the motion passed unopposed. The motion passed unopposed.**

Upon inquiry, Dr. Staten discussed the "near-term result." Dr. Staten used an example of Bruce looking and finding something in the APHIS facility that is unique, and then he queries five populations from Arizona, then we can start looking at everything we bring in and see if it has it or doesn't have it. Then we would look at Toreon, Texas and other areas. It would be another piece of information we would have in forming our decisions as we go. That would be best scenario. It was noted that there are pieces of DNA that are much more common in APHIS. There are markers that are already there that we just don't know what they are yet.

M/S/P **Bobby Hull motioned that we emphasize the need for PCR / genetic analyses / genetic mapping information for pink bollworm, as well as major push to pursue funding and financial assistance from USDA. Jim Ed Miller seconds. The motion passed unopposed.**

Dr. Staten moved on to the next item of business concerning drop machine issues. These machines have been around a long time. We continue having to replace alternators, etc. Dr. Staten was hoping that Joe would be able to tell us the status regarding an auger that puts a lot less drag on the machine also an air compressor that is a much better unit to apply. Upon inquiry, Dr. Staten answered that he would like a motion.

M/S/P **Don motioned that the Action Committee to pursue insuring that we upgrade technology in the sterile drop machine. Jim Rudig seconded the motion. The motion passed unopposed.**

Dr. Staten advised that Michelle Walters will briefly discuss some new pheromone technology tests. Michelle Walters gave a report on the Refinements in the carrier in a sprayable formulation (pheromone).

Pink Bollworm mating disruption: refinements to the carrier in a sprayable formulation

Michelle L. Walters[1], Jack Jenkins[2], Barry Barnes[3], Nick Jenkins[2], Mike Whitlow[4], Carter Whitlow[4], John Claus[1], Nelson Foster[1], Larry Antilla[4] and Robert T. Staten[5],

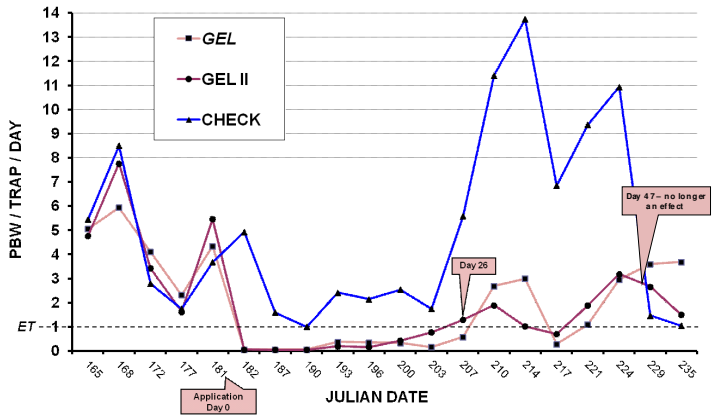
(1)USDA, APHIS, PPQ, CPHST, Phoenix, AZ, (2)Pacific Biocontrol, Litchfield, AZ, (3)USDA, APHIS, PPQ, CPHST (seasonal), Phoenix, AZ, (4)Arizona Cotton Research & Protection Council, Phoenix, AZ, (5)USDA, APHIS, PPQ, CPHST - Retired, Phoenix, AZ

Thanks to Chad Odom, cotton grower

David Ray, Tri-Rotor LLC

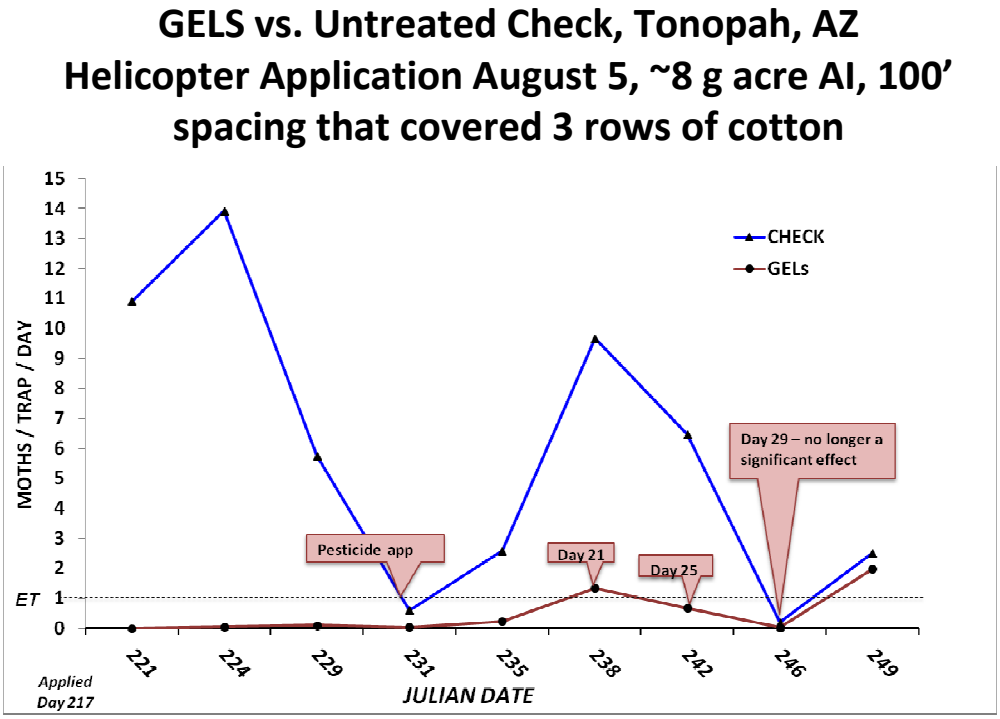
This new formulation was sort of forced upon us by the manufacturer. We compared it to the previous carrier using lab and field tests. We used Mike Whitlow's tractor adaptation. We also used a helicopter. We wanted to apply it with commercially available equipment by ground and by air. Michelle showed some pictures of the equipment.

GEL vs. GEL II, Tonopah, AZ – 2010
Tractor application, ~10 g AI/acre, 19'



In June, we applied by ground replicated tests in Tonopah, AZ of the two different gels and an untreated check. We had high population release pressure. We saw a blip on day 26, but saw significant reduction population through day 47. The two carriers were very similar. On August 5th, we applied the same formula and

With the helicopter, we calibrated the helicopter, but applied less material than we meant to. We got out 8g rather than 10g, which may have shortened its life out in the field. They day that we applied, it was 114° which may have effected the application in that it might have caused more satellite drops, so we may have gotten nicer bigger drops if the weather would have been cooler.



This is probably worst case scenario as far as when we applied. It looked like a nice application. We did get a lot of big drops. He flew at about 75 mph which is about as fast as he could go at 20' over the cotton. He flew at 100' spacing. The tractor was average of 19' spacing. It is a very different kind of application.

We got very reasonable results from the sprayable. If it gets registered, which we hope it does, it would cost about $10 per acre at a rate of 10g for the material which does not include application costs. It can be applied early season with the tractor or late season aerial.

Bobby Hull asked if any over the top aerial, regular spray tractor would make the application also. Michelle said it would. It would just effect the calibration. We used two different APHIS aircraft with very similar formulation and got excellent results.

We were also asked to do a study. We were curious about what happened to those moths in Texas. We looked at diapause in the rearing facility population. We set it up according to previous research done by Salama and Miller in 1993 (slide has particulars).

Preliminary Study - Diapause in the PBW Rearing Facility moth population

- **Diapause treatment** – Placed 250 active, lab-reared PBW larvae in vials with small piece of filter paper, in environmental chamber set at constant 13 C (55 F), ~80% RH, constant photoperiod of 10 light, 14 dark, for 60 days. These conditions are known to induce diapause in APHIS reared PBW larvae (Salama and Miller, 1993).
- Of the **treated** larvae, 4% diapaused (remained larvae). Once removed from the diapause conditions, only 2 of the 12 diapausing larvae survived to become moths, <1% of the original 250. Up to 73% of wild PBW larvae have been observed to diapause under similar conditions (Adkisson et al. 1962, Watson et al. 1974).
- **Control** - 250 larvae were also placed in vials and held at constant 27 C (81 F), ~80% RH, with 12 hours light/dark – normal PBWRF conditions. 99% pupated and became adults within 30 days.

If you really wanted to rely upon this data, we would want to run it again. There are some refinements we could make. We have a larger number here, but it is an extremely low rate of diapause in that population. We need to see if that's repeatable. That could be one of the reasons why we didn't have a big spring emergence in Texas this year.

Charles Allen wanted to verify that these aren't the moths that you are dealing with in Faben's last year. They were from the lab. Michelle advised that genetically they were from the lab, if that scenario is what really happened. Charles advised that we know the moths were non-marked, which means they were probably F1s, probably crosses between laboratory insects. Michelle advised that they were reared on cotton, as opposed to being reared on diet. Charles stated that would be a difference if there is a difference. Michelle agreed, elaborating that the rearing conditions obviously were different in having field experience. Charles asked that if it was an F1 between a lab colony and the wild colony, do we know anything about their ability to diapause. Michelle answered that we would not from this study. There weren't a whole lot of wild moths (unirradiated moths) out there for them to mate with, so most of them would be APHIS genetics.

Dr. Staten advised that based on the studies he is aware of; he doesn't recall him having much trouble getting them in. Dr. Staten went into a few details. He thanked Michelle for all of the work she is doing. Dr. Staten asked if diapause could be a marker gene.

Bruce agreed. Dr. Staten advised that the paper that Michelle is citing was the development of an Elisa test for the specific enzyme in diapause. The pathway to the gene might be an option.

The discussion moved to 24C / Section 18 Review of Needs for Completion by Don Parker. Don gave some background explaining that that Bollgard II are two gene Bt products now, have natural refuge, except in areas designated as pink bollworm areas and that includes CA, AZ, NM and western part of TX. Now, in the past, Arizona was the first that went to EPA and requested 24C extension to allow 100% planting of Bt with the release of sterile moths. That was the first time that EPA convened an EPA Scientific Advisory Panel on a 24 C request. We have had meetings with EPA concerning our idea of confirmation. We have had two meetings with EPA. They are comfortable with our concept of a confirmation phase, where we would have permission to plant 100% Bt as part of the pink bollworm program area without the release of sterile moths. That being said, we are working on some terminology, so they can be comfortable with label terminology. The way we would achieve this is to have an amendment to the 24 C.

Don requested Larry Antilla verify that the 24C was just renewed (Larry nods). That particular 24C is good for a three year period of time. Larry stated it is good through Dec 31st 2015. Don stated that all we have to do with that one is to have an amendment to it to include the confirmation of eradication phase.

California is a Section 18 that USDA has been kind enough to help us with. Jim reported it expires this year. Susan O' Toole was working on it. We can get with her to make sure that we include language that amends it to allow a confirmation phase as well.

Don verified with Larry Smith that the Texas 24Cs are two year old. Larry reported that they have one more year. Don stated that on those as well, we need to get in place an amendment for the confirmation phase.

Don reported that the paperwork is written for New Mexico. It was written in a language of confirmation. We have not gotten EPA's approval, so we have not sent it in yet. We are ready to send it in.

That is where we come into the specifics of these 24Cs covering specific areas. The New Mexico program consists of those three counties that are in the program that we will be including in the 24C. Joe reported that it is Sierra, Luna and Doña Ana counties. Don advised those would be covered by a 24 C that would allow planting of 100% Bt as part of program activities. Anywhere outside of those three counties requires refuge. That is something that we need to be careful about. Whenever you have these designations, any county that is not included in there, that is not part of the eradication program, would be required to have a refuge.

Upon inquiry, Don clarified that even though Arizona Zone 1 has been completed, they are still in the program. Don referred to the minimum standards document where we have three designations in our program including active eradication, confirmation phase (three years we want to make sure there are no moths), and then the post eradication phase. As long as you are a participant in those phases, you are in the program. There are some areas of New Mexico which have not participated in any phase or in any way with the eradication programs. There were some people found in violation this year of not having any refuge. That is a message that we are trying to get out that they are required to have a refuge.

Don was asked when the paperwork for New Mexico goes forward, when does that trigger? Don advised that those three counties only would be okay as soon as the State approves it, so you will have your state people write it and Don will submit the 24C (state special needs label). After that, EPA has 60 days to over ride the state's label. It should be in place for 2011 for those three counties only.

Joe Friesen asked how complicated does that make it now that we have found a native in that area? Don answered it will not be complicated because EPA will be comfortable with it. Initially, they were comfortable because we were we said we don't want to plant a refuge because we are going to release sterile moths. They were comfortable with that. Now we are saying we don't want to release sterile moths anymore because we do not have natives anymore. Now if there is a native, our Minimum Standards document lays out the details of how we are going to respond to it. The EPA said okay, we are comfortable with that. They understand. One of the key things Larry was talking about earlier is how we also should stress to them that if we are not releasing steriles and we are not spraying pheromone during our confirmation phase, our traps become much more sensitive. There is no trap competition. If there were something there, we are more likely to catch it as well. It just means that we have to respond according to our Minimum Standard document.

Craig asked a question to follow up on the issue in New Mexico. New Mexico is a regulatory issue for those growers. There is a fiduciary responsibility. There is a general case where they were in no mans land, do not particularly producers who live in West Texas and farmed across the border. They had to have a refuge in West Texas and had to have one in New Mexico. It's hard to understand why, but that's the way it is. It looks like that's the way it's going to be in the foreseeable future. There are a number of growers who are in a border area like Texas who need to be educated. The Council is going to work with the ginners and the Boll Weevil Foundation in Texas and Monsanto, who are the leaders, to educate them on the fact that they have to have a refuge for Bt cotton, and because they are not in a program, to say that New Mexico is considered a pink bollworm state, when they are really in a no mans land situation. It's easy to see how there could be a general misunderstanding. Our task is going to be from now and

next planting season to make sure that they are at least aware of that circumstance. We need to get words out to those other growers. We don't have the option to let that slide.

Ty Whitten, Monsanto, commented that if there is anything we can help with from an industry standpoint, please engage industry. He further stated that regardless of whether or not it is Monsanto products as well as competitor products, this is the making of all of those products. We will help you all we can. Don Parker advised that we will be working with Monsanto, Dow, Bayer, and all of these companies that have some of this transgenic technology they are utilizing. Our next challenge on this respect will be working closely with Monsanto, Dow, Bayer and whoever else concerning getting a pooled registration of a Section 3 label, rather than asking for renewals on 24Cs and Section 18s over and over again. At some point we will be seeking a Section 3 label and we will need those companies assistance very much on that. There were no questions.

Dr. Staten commented that there are several realities we have to face. Aside from the price of cotton, there are places that can expand production and probably will. There will be some expansion. I've asked program managers across the board what they expect. The biggest increase will be in Mexicali and probably in Chihuahua, although Chihuahua will not affect sterile insects. In Juarez we have not had a native capture. Dr. Staten has left two shipments a week on the books for Juarez because they are across from the finds in Texas, and we want to address those.

	2009	2010	2011	2011/ddst
TEXAS SEP	58	30	22.5	15
JAUREZ	15	7.5	5	0
	O			
N.M./N EP	(4)	0	15	7.5
AZ	51	43.5	42	30
SO CAL	2	2	2	2
SAN JO.	9(12)	12	6	0
N.W. MEX	45	45	47.5	50
				0
Total	182	140	140	104.5

Dr. Staten separated out the 2009 and 2010 stuff next to 2011. With what we know now, we are going to need to keep a robust number of steriles in Arizona. We are facing a thirty-percent increase in non-Bt cotton. The San Joaquin would drop one million insects/day. Dr. Staten anticipated making every program manager in the room unhappy. Texas is labeled south El Paso.

Dr. Staten does not anticipate using a huge amount of resources on single finds. We should target them and get everything around them. We can use a smaller number there

than what you had last year. We are going to have to have something in north El Paso / New Mexico, that's all one area as far as Dr. Staten is concerned. It is one zone and we are going need the resources available between these two to work within those two zones. Both sides need to work together to make sure we are distributing this correctly.

Arizona is staying roughly the same, but he's really counting on the fact that there are some areas in Arizona where we can drop all Bt release. Parker is an example that should be considered for Confirmation of Eradication as there is no evidence of reproducing populations there. This is 140 million total. That is what we have in the budget.

DDST or F1, is if we knew we were getting a lot of that, this is really probably what we would need in this program. We'd have a lot more room in here. That would be the Chairman's view of the initial cut of how we are going to look at moth distribution this next year.

Upon inquiry, Dr. Staten explained that the last column shows if we found a very marked percentage of those moths had gossypol in them; we would be a lot more comfortable about reducing the release rates in Arizona and even in Texas where the single finds have been captured, if we were comfortable. It is what you are looking at in the real costs of making a mistake. Also, if we find there's no gossypol, that's what it would look like.

Dr. Tabashnik asked how much money the program would save if we had this technology and we knew it would go down to 36 million moths to that last column. Dr. Staten said that there are several costs including the cost of airplane. That's in essence 15 million insects a day. For example, you'd be flying only 20-30% less in Arizona. The rearing cost will go down due to economy of scale and might be $500k or so. The real savings would be the luxury in upping the auntie in Mexicali. You would have a lot more assurance with what you could do with that number, or you could go to a higher number in Mexicali and end the program a year earlier. That is a huge cost, so it is hard to determine. There are a lot of ancillary questions.

Don asked if this 2011 recommendation assume that we are going to classify the areas in confirmation phase. Dr. Staten advised that he would put most of New Mexico's program in confirmation except that area right under El Paso so that they're not releasing there again this year to maintain their 24Cs. They can still maintain their 24Cs without being in Eradication. We would have to say that the small area that is shared across both borders of El Paso and Texas define those as in a reaction phase for Confirmation of Eradication. We are going to treat nine square miles around those finds as a minimum. We are going to do at least the minimum of our Action Plan in those locations. Dr. Staten's recommendation is to put the Trans Pecos are in Confirmation of Eradication Phase unless Larry finds two native moths there and there is evidence of reproduction.

Dr. Staten does recommend extending resources unless our protocol dictates that action. The Technical Committee needs to consider whether they are comfortable. The reality is we are comfortable in Column E knowing what we know today is the question. Upon inquiry, Dr. Staten advised that each program area has the ability to do more, but they are always to adhere to the Minimum Standards Document as the minimum required. Don Parker elaborated that the Confirmation Phase says that we have not found anything in this area, and it does stipulate that upon a capture this will be the procedure, so that's still within your Confirmation. Dr. Staten advised that the Minimum Standards does not tell you that you can't do something.

M/S/P **Charles Allen moved to recommend placement of the SCNMPBWEP and the Pecos part of the El Pecos / Trans Pecos area into Confirmation Phase with the exception of the area immediately around the native find in New Mexico. Bobby Hull seconded the motion and the motion was unopposed.**

Upon inquiry, Dr. Staten elaborated that there are two flights a week in southern California. There is also a question of whether or not we can go to Confirmation of Eradication in Parker and Blythe. Given that we are talking about evidence of reproduction and given that those are 100% Bt cotton areas, there is also another question of how many sterile insects we letting run over. That has been the allocation of Southern California all along, and that's a high number given the acreage in Southern California. Jim verified that the numbers reflected are in million of moths per week. Dr. Staten clarified that Jim is getting six million moths for the San Joaquin.

Some discussion ensued concerning a larger amount of cotton acreage grown. Bob expressed concern over whether or not that cotton will be Bt or non-Bt. Next year our strategy initially is to release all of last years cotton until we see where everything is, and then we'll have to make adjustments. Dr. Staten anticipates those adjustments being made through the Committee.

M/S/P **Bob Hull motion to recommend to the PBW Action Committee that we shoot for 140 million insects per week as shown in Column E on Bob's spreadsheet for the initial distribution of the sterile moths for next year. Don Parker seconded the motion and the motion passed unopposed.**

Don Parker requested everyone keep him apprised of updated contact information. Clyde Sharp advised that we have not said a thing about the High Plains of TX. Dr. Staten advised that there are a lot of questions that need to be answered biologically first. There is some work underway by Charles Allen and Rick Zink. Dr. Staten believes they just started this year, and he recommends them having it a little further down the line before we take a good look at it.

Dennis Palmer invited any cotton growers who would like to meet with Ty Whitman from Monsanto, to please see Dennis up front.

Upon inquiry, Dr. Staten requested that Program Directors tell us how many organic acres of cotton they have for our information when they report tomorrow. Dr. Staten asked Ted and his Mexican counterparts if Mexico has organic cotton, and if so, do they have the same rules that apply in what we are dealing with.

M/S/P **Jim Ed Miller motioned to adjourn (4:45 p.m.) Don Parker seconds the motion. The motion passed unopposed.**

10/25/2010
NCC PBW TAC RESOLUTIONS (MOTIONS)

DRAFT (MINUTES NOT APPROVED until next meeting in October 2011)

M/S/P **Bobby Hull moved and Craig Brown seconded that the 2009 minutes pass as a final. The motion passed unopposed. (***page 3***)**

M/S/P **Craig Brown motioned that the Technical Committee make a recommendation to the Action to make a task force specifically for DS Red. Bobby Hull seconds and the motion passed unopposed. (***page 22***)**

M/S/P **Larry Antilla motioned that we pursue alternate methodology concerning the additional marker technology of rubidium and gossypol analyses. Jim Rudig seconded and the motion passed unopposed. The motion passed unopposed. (***page 22***)**

M/S/P **Bobby Hull motioned that we emphasize the need for PCR / genetic analyses / genetic mapping information for pink bollworm, as well as major push to pursue funding and financial assistance from USDA. Jim Ed Miller seconds. The motion passed unopposed.** (*page 22*)

M/S/P **Don motioned that the Action Committee to pursue insuring that we upgrade technology in the sterile drop machine. Jim Rudig seconded the motion. The motion passed unopposed.** (*page 22*)

M/S/P **Charles Allen moved to recommend placement of the SCNMPBWEP and the Pecos part of the El Pecos / Trans Pecos area into Confirmation Phase with the exception of the area immediately around the native find in New Mexico. Bobby Hull seconded the motion and the motion was unopposed. (***page 30***)**

M/S/P **Bob Hull motion to recommend to the PBW Action Committee that we shoot for 140 million insects per week as shown in Column E on Robert Staten's spreadsheet for the initial distribution of the sterile moths for next year. Don Parker seconded the motion and the motion passed unopposed. (***page 30***)**

M/S/P **Jim Ed Miller motioned to adjourn (4:45 p.m.) Don Parker seconds the motion. The motion passed unopposed.**

DRAFT (MINUTES NOT APPROVED until next meeting in October 2011)