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FOCUS on Entomology

For South Plains Agriculture

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IN THIS ISSUE

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EDITOR'S EXIT COMMENTS

This truly is my last issue of FOCUS as contributor for the "cotton insect" column and as overall editor. I have now been doing these duties for a total of 30 years. I had intended to finish with last year's season with retirement January 1, 2006 but my replacement was not found in time (still searching) for the 2006 season so I volunteered to continue a less frequent newsletter this season. But this really is my swan song. Not a very good season to end with although insect problems (my area) were unusually absent for most folks. I just got back from Colorado and my house is progressing well (see pictures). Jeanne and I expect to move up soon after Thanksgiving. My house in Lubbock has sold and I'll be moving to a rental for 3 months (actually to the Forrest Heights United Methodist parsonage). God does watch over you! I will continue to attend the Plains Cotton Growers meetings (every two weeks now) until I leave. It will be hard to leave the many friends and acquaintances I have known over the years but as I said last time---Colorado beckons. Good luck to you all and may all your insect problems disappear as I finally cross the border into Colorado (I have been accused of bringing our problems from Arizona 30 years ago). **JFL**

COTTON INSECTS

With bolls popping open in many fields, **it is time to call it quits on this year's insect wars**. Actually more of a minor skirmish than a war. This has got to be one of the lightest if not the lightest cotton pest year on my watch. There were a few fields sprayed for bollworms, maybe one or two for Lygus bugs and maybe even a field for aphids but you would be hard pressed to make a living spraying cotton pests this year. We did have a pretty good run of thrips problems in seedling cotton but it didn't last long.

With cotton opening across the area, **it is unlikely that there are many fields left to worry about** as far as insects are concerned. There are some very late fields that are growthy and lush and still vulnerable to late insect damage but I am not sure we have enough time to mature bolls that can be damaged. It takes about 850 heat units to make a good boll and at least 650 heat units to make a boll with lowered fiber quality. By now there is less than a 50% chance for any boll to mature no matter where the field is in the High Plains. With cooler and rainy weather, it is unlikely there will be many heat units accumulated in September.

We continue to experience a **bollworm egglay but it appears to be declining** as we move into September. We did not experience a big bang of activity once corn matured and moths moved to cotton. We also did not experience much movement of moths from the down state areas of Texas. These long distance movements are usually necessary to cause our most damaging bollworm years. There are some beet and fall armyworms mixed in with bollworm caterpillars this time of year but generally not enough to get us to shift our insecticide chemistry. Bollworm caterpillar numbers as high as 15,000 per acre have been reported in the late, lush fields but these are few and far between. Treatment decisions can no longer be based on caterpillar numbers alone. Look at the kind of damage resulting from your infestation. It may be only surface feeding or on small bolls of little consequence. Wait to spray until you can get a decent damage assessment. This means waiting until most caterpillars are 3/8 inch long or larger. Hard to do but be patient.

Now back to the rain. The good news is that we can always use more rain, it will help the wheat crop; it will bank moisture in the soil for next year and there has been no hail. The bad aspects of this rainy period is that heat units are being lost from lower temperatures and lack of sunlight, increased bollworm survival, more difficult to scout and spray for pests, and we may have increased problems "killing' this cotton.

The pink bollworm situation remains unchanged. Low numbers of moths continue to be trapped across the northern and southern High Plains. There have been a few traps that have caught more than 5 per night but only in Gaines, Reagan, Upton, Runnels and Hockley counties. With the exception of Upton County, the county average for all traps for last week never surpassed 5 per trap. Even so, I am detecting an increase in trapped moth numbers as the crop matures and moths begin searching a wider area for last minute egg laying. All in all there has been no problem with pinkies in cotton fields this year in the surveyed area. The spread into the more

Pinkie moth

northern counties of the High Plains appears to have abated but moderate numbers persist in the southern counties.

For more information on Texas cotton insects, including a list of recommended insecticides, go to: Managing Cotton Insects in the High Plains, Rolling Plains and Trans Pecos Areas of Texas 2006 (E-6) and Suggested Insecticides for Managing Cotton Insects in the High Plains, Rolling Plains and Trans Pecos Areas of Texas 2006 (E-6A).

Boll weevil trap catches have remained low all year but with the advent of harvest in south Texas, the danger of weevil transport into our area appears to have been realized. Two weevils were trapped in the Southern High Plains/Caprock zone, one inside the Lubbock loop and another north near the Hale County line. Everyone must make sure that all equipment coming into this area from a more heavily infested area is clean of cotton debris. These hitchhiking weevils can even come in on cars and trucks---so beware.

Boll weevil numbers increased in traps in both the Permian Basin and St. Lawrence zones with the biggest increase by far occurring in the STL zone. Seventy weevils sound like a lot but compared to last year, that is nothing. Still, we want no weevils in our area. As area cotton begins to open in earnest and harvest aids are applied, I do expect to see increased weevil catches, but nothing like we have seen before. Folks, we are nearing the end of our battle in west Texas---an eradication effort spanning about 10 years if you count the earlier Plains Cotton Growers efforts. But of course this does not cover the years of the diapause control program initiated in 1964 that kept the weevil from permanently establishing infestations on to of the Caprock for over 30 years. What a battle!! But we are now in the cleanup phase and soon to be weevil free---at last!! **JFL**

Average number of boll weevils caught per trap inspection and sprayed acreage through August 20. Number of boll weevils caught for the week ending August 20, 2006.

High Plains Zone	2005	2006	Sprayed acres	Total weevils caught this week
Permian Basin	0.0211	0.0003	18,000	1
Western High Plains	0.00001	0.00001	299*	0
Southern High Plains	0.00003	0	0	0
Northern High Plains	0	0	0	0
Northwest Plains	0	0	0	0
Panhandle	0	0	0	0
St. Lawrence	0.2106	0.0009	11,887	8

*Not sprayed this week.

Average number of boll weevils caught per trap inspection and sprayed acreage through August 27. Number of boll weevils caught for the week ending August 27, 2006.

High Plains Zone	2005	2006	Sprayed acres	Total weevils caught this week
Permian Basin	0.0195	0.0003	19,532	6
Western High Plains	0.00002	0.00001	299*	0
Southern High Plains	0.00003	0.000003	466	2
Northern High Plains	0	0	0	0
Northwest Plains	0	0	0	0
Panhandle	0	0	0	0
St. Lawrence	0.1913	0.0011	16,594	70

*Not sprayed this week.

COTTON AGRONOMY

The cotton crop continues to progress across the region. Some areas have again obtained some rainfall, with very significant amounts on some fields. For a quick look at regional rainfall for the month of August, click here: http://www.mesonet.ttu.edu/Aug06rain.htm **(Note: this does not count the rainfall amounts from the downpours of the last 3 days as Randy wrote his column last Thursday. JFL)**

Heat unit accumulation has moderated due to somewhat cooler temperatures over the last several days. For about the last week, temperatures have been such that heat unit accumulation at Lubbock has been as low as 12 per day **(now even less. JFL).** However, from a May 1 standpoint, for the season, heat units were still about 20% above normal and we now have a total of about 2375.

Predictions indicate near normal to somewhat cooler than normal temperatures are to be expected for the next 10 days or so. Certainly this will slow down fiber development somewhat in the area, but I still believe that we will have some fields moving rapidly toward harvest aid application. After taking good look at fields in some areas over the last several days during various county crop tours, the cotton looks good to excellent in fields with adequate irrigation.

The recent rainfall events in some areas have allowed producers to turn off the irrigation wells in some fields. This is a much-welcomed situation. The cotton in the low irrigation treatments at the Lamesa AGCARES facility have a significant number of open bolls, indicating that harvest aid applications may begin soon. Some dryland cotton has initiated new growth in areas where good rainfall amounts were obtained, however, it is past the date where a new bloom can likely make a mature boll in most of the High Plains.

Countdown after cutout. Many fields hit cutout early this year due to moisture stress. As with some of the dryland that obtained rainfall, some low irrigation capacity center pivot systems may also encounter new growth. Other higher yield potential fields have recently reached cutout (here defined as NAWF=5 on a steep decline). COTMAN uses 850 heat units past bloom as a point at which a flower can make a “normal” boll. In the High Plains, heat unit accumulations of 750 past flower will probably make an "acceptable boll" that may not have "normal" lint production and may be lower in quality (low micronaire). We have developed a table that indicates where we are as of August 31. It is based on actual Lubbock 2006 heat units from July 25 (due to extremely early cutout dates for some fields), August 1, and August 9, and from that point forward, it uses the 30-year long-term average for each day.

For example, the table shows that for a field that reached cutout on August 1, that flower was able to obtain 250 heat units (probably safe from Lygus bugs) by about August 12. The 450 total (probably safe from a decent bollworm egglay) should have occurred around August 23. If we accumulate "normal" heat units from August 31 forward, this boll should obtain good maturity (850 heat units) about September 20.

Based on some irrigation termination projects with COTMAN, when using center pivot irrigation (see the August 4 issue of FOCUS), the possible irrigation termination date could occur sometime around August 31.

DD60 heat unit events based on date of cutout (5 NAWF on a steep decline) and actual Lubbock August 1-August 31, 2006 temperatures with subsequent long-term average values for the remainder of the season.

DD60 Heat Unit Accumulation	Date When Crop Achieved Cutout (5 NAWF)		
	Jul 25	Aug 1	Aug 9
+250 HU (safe from Lygus)	Aug. 5	Aug. 12	Aug. 22
+ 450 HU (safe from bollworm egg lay)	Aug. 14	Aug. 23	Sept. 2
+ 600? (terminate irrigation?)	Aug. 22?	Aug. 31?	Sept. 13?
+ 850 HU (mature boll)	Sept. 6	Sept. 20	Oct. 16
Total HU through Sept. 30	1100	934	760
Total HU through Oct. 15	1187	1021	847
Total HU through Oct. 31	1231	1066	892

2006 Harvest Aid Guide. As mentioned last time, we have now updated the High Plains and Northern Rolling Plains Cotton Harvest Aid Guide. This has posted on the Lubbock Center Web site. One of the main changes noted in the harvest aid lineup this year has been with our highly effective paraquat formulation used extensively in the region. Gramoxone Max is now out of the market and Gramoxone Inteon has replaced it. The most important change noted is in pounds of active ingredient per gallon. Gramoxone Max is a 3-lb/gallon formulation, whereas the Gramoxone Inteon is a 2 lb/gallon formulation. A conversion table that provides equivalent active ingredient rates in lb/acre for both formulations can be found at the end of the Decision Aid Table section of the 2006 version of the harvest aid publication.

The Texas Department of Agriculture has granted a 24(c) Special Local Needs (SLN) label for Gramoxone Inteon for most of Texas. This SLN has approved higher use rates for desiccation of stripper-harvested cotton. Applications of Gramoxone Inteon made in the late afternoon prior to a bright, sunny day appear to enhance the effectiveness of desiccation and tend to increase control of juvenile growth (regrowth). Use of a non-ionic surfactant (NIS) at the rate of 0.5% volume/volume (v/v) with paraquat is suggested. It may be necessary to increase the NIS rate to 1% v/v and spray late in the day to effectively desiccate some fields if extensive regrowth is problematic.

In some years, Aim 2EC and ET 2.5%EC (see product descriptions in the defoliant section of the 2006 guide) when applied at higher rates work well to desiccate juvenile growth and regrowth, which is many times, difficult to accomplish with paraquat.

Several harvest aid trials are planned at this time. Dr. Mark Kelley has established the first trial of the year on some lower-yielding cotton in Crosby County.

Yield estimation. Although a very risky endeavor, I have had a few calls concerning how to estimate cotton yields. There is a Texas Cooperative Extension publication that deals with this issue. This publication takes a fairly simple approach and is "user friendly".

For a more complicated and thorough treatment of the subject look at an older publication generated by Dr. Will McCarty, former Extension cotton specialist from Mississippi State University. I obtained this from a MSU Web site a few years ago. This publication considers many more factors such as numerous row spacings, boll sizes, and two estimated lint percentage levels (35% and 38% picked lint percentages of the seedcotton).

Dr. John Gannaway's Cotton Performance Tests **publication available on the Lubbock Center Web site with several years of reports.** In his tests one can find boll sizes and picked lint percentages for numerous varieties. In spite of considering more factors, yield

estimation should be approached with trepidation.

New module cover publications. Poor module covers can be a serious problem with respect to seed cotton storage when rainy weather is encountered. Dr. Steve Searcy and Shea Simpson have recently generated some publications dealing with module cover issues. Hard copies of these publications have been provided to gins. They provided me with the electronic copies. Their cover letter stated the following: "We are pleased to announce the arrival of posters and brochures pertaining to the handling of seed cotton modules. Back in 2003, research began at Texas A&M University regarding the handling and storage of seed cotton modules. Some results are in, and we know you will want to share this information with your producers…Research on this project is ongoing. For further information, please contact Stephen Searcy or Shay Simpson with the Biological and Agricultural Engineering Department at Texas A&M University (979/845-3931). The Texas State Support Committee of Cotton Incorporated, Texas Department of Agriculture – Food and Fibers Research Grant Program, The Cotton Foundation and Texas Agricultural Experiment Station, provided funding for this project.

An electronic copy of this brochure is available. An electronic copy of the poster is also available. **RB**

PEANUT DISEASES

Recent weather conditions may aggravate peanut diseases. Sclerotinia blight (*Sclerotinia minor*) and Botrytis blight (*Botrytis cinerea*) typically occur during the later part of the growing season when cooler temperatures (65-77 °F) and high relative humidity are present. Both *S. minor* and *B. cinerea* are capable of infecting vines, stems as well as pods. To further complicate issues, the two diseases exhibit similar symptoms and can be easily confused in the field. Infected stems or limbs initially appear wilted, and may have a

Sclerotinia sclerotia produced on peanut stem

bleached or shredded appearance. Specialized structures (sclerotia) are produced by both *S. minor* and *B. cinerea* as infected tissues are consumed. Differences in the color of the fungal growth (mycelia) can occasionally be used to distinguish the two. Under optimum environmental conditions, *B. cinerea* may also produce numerous seed-like spores, which can become airborne. Botrytis blight is not typically considered a major peanut disease; however, it has been identified in fields in the region. There is little information available regarding Botrytis blight development, distribution, and/or control in West Texas.

Botrytis blight in field
(note dense fungal growth and spores)

Maximum control of Sclerotinia blight is obtained by combining cultural practices with chemical options. The most important aspect of managing Sclerotinia blight is to avoid

moving soil out of fields with a history of the disease into fields without a history. Equipment leaving fields infested with *S. minor* should be carefully washed before moving into clean fields. Recent studies (conducted by Texas Tech Graduate student Jeff Wilson) indicate that clorox does not kill sclerotia. Early plantings can be used to avoid disease development late in the season.

Cultivar selection can directly or indirectly influence disease development. Cultivars with moderate levels of Sclerotinia blight resistance such as Tamrun OL 01 and Tamrun OL 02 are currently available, and material with improved resistance is being evaluated. The upright growth habit in certain market types (primarily Spanish) allow air movement in the lower canopy, resulting in a less conducive environment for the disease.

Fungicides play an important role in the control of Sclerotinia blight as well; however, proper application timing and method are critical. There are currently two products: Omega 500F (1.0-1.5 pints/acre, Syngenta Crop Protection) and Endura (10.0 fl oz/acre, BASF Corporation); labeled for control of Sclerotinia blight. The benefits of these products are maximized when they are applied in a preventative manner, and thorough coverage of the lower stems is achieved. For more information regarding Sclerotinia blight, Botrytis blight, or other peanut diseases please contact personnel at the Lubbock Center.

To view Chip Lee's peanut disease photo gallery go to: (http://plantpathology.tamu.edu/Texlab/Fiber/Peanuts/atlas-toc.html) **JW**

SORGHUM INSECTS

Fall armyworms, part of the sorghum headworm complex, have hit us with a vengeance. Late planted fields and those in the heading stage (panicle exertion) are especially at risk. I have received several calls asking whether it makes economic sense to treat these infestations, and my answer depends on the growth stage of the plant and the number and size of fall armyworms and corn earworms present.

The economic threshold is a sliding scale that considers the number of headworms present, the crop market value, and the control cost per acre. You can read the fine points of the threshold in, Managing Insect and Mite Pests of Texas Sorghum. In general, the threshold is 1–2 larvae per head. It is important to realize that these thresholds are for sorghum that has already headed out. Unfortunately, headworms can do an excessive amount of damage to heads that are still compacted and getting ready to shoot from the whorl. If a field has a significant number of plants in this condition, it would be wise to spray before the official threshold is reached.

We have received some reports of headworm control failures with pyrethroid insecticides. These headworms were predominately fall armyworm, and some of the lack of control could be attributed to not enough water carrier applied per acre. Check the pesticide label and use the highest per acre amount of water suggested. Also, there are differences between pyrethroids as to how well they work on fall armyworm. Not all pyrethroids will give satisfaction. Our guide lists Baythroid and Karate as pyrethroid choices, and it also lists the non-pyrethroids Sevin, Lannate, and ethyl parathion. Before an insecticide can be listed in our control guide it must go through a rigorous screening process and prove itself. If it is listed in our guide it will work if properly applied. Insecticides that are not listed in the guide might or might not work. **PP**

WHEAT AGRONOMY

Varieties for grain. Wheat seed supplies for grain have been short for two months. Popular varieties that have performed well in recent Texas High Plains trials are essentially sold

out. Some older varieties and some older seed may be still on the market.

Based on long-term varietal testing, Texas A&M -- Amarillo's Dr. Brent Bean provided the following wheat variety recommendations for the Texas High Plains in a recent newsletter:

"**Under dryland conditions** in the past it was hard to go wrong with TAM 105, TAM 110 or Cutter. Some new varieties, however, have edged 105 off the list and should replace TAM 110 over time. Especially TAM 112, which like TAM 110, is greenbug resistant but also has better milling qualities and improved disease resistance (including wheat streak mosaic virus). Overall these varieties have good yield histories. Cutter tends to have a good package of disease resistance. Cutter has decent pasture potential and is moderately resistant to wheat streak mosaic virus. It does not emerge well if planted in hot soils (dormancy), and may tend toward some shattering and lodging losses if left in the field too long. Cutter tends to be slightly taller than TAM 105 or TAM 110. TAM 112 has had outstanding yields relative to other varieties and was at the top of all three dryland trials harvested in 2006. Likewise TAM 111 has demonstrated consistent performance, and was in the top 20% of all dryland trials harvested in 2006.

Unlike last year's irrigated tests, where TAM 111 was clearly the best variety, no one variety dominated the trials in 2006. However, in the irrigated trials several varieties consistently ranked in the top 20% including AP502 CL, TAM 112, and TAM 111. AP502 CL is a Clearfield wheat, which means Beyond herbicide can be used in it for control of grasses. Note that the labeled "imi" herbicide for a particular crop must be respected. For example, you would not use Ignite herbicide for corn on your wheat. AP502CL is very similar to TAM 110, with greenbug tolerance, and over the years does seem to occasionally have a higher yield. TAM 112 is greenbug tolerant, and generally yields more than TAM 110 by a couple of bushels. It should generally be positioned as a dryland or limited irrigated wheat. Although TAM 111 did not have the outstanding year it had in 2005, it still ranked in the top 20% in 3 out of 7 locations in 2006." You can look at Brent Bean's full 2006 Texas High Plains wheat grain report.

2006 Grain Wheat Variety Recommendations

Full Irrigation	Limited Irrigation	Dryland
Dumas	Dumas	TAM 112
Jagalene	Jagalene	TAM 111
TAM 111	TAM 111	TAM 110*
	TAM 112	Jagalene
		Cutter

Other Past Recommended Varieties (2000-2004)

Irrigated	Dryland
Jagger*	Jagger*
Ogallala	Custer
TAM 110*	TAM 110*
TAM 200	Thunderbolt
TAM 202*	

**Early maturity wheat varieties.*

Wheat grain production in Gaines Co. has increased due to the replacement of one year of cotton in the three-year cotton/peanut rotation. This reduces the number of acres that need to be irrigated in the summer, and the wheat stubble is maintained to eliminate the need to plant a protective cover for cotton or peanut.

Wheat varieties that performed well over the past three years (2004-2006) in Gaines Co. (51-54 bu/A; avg. = 46.2 bu/A) include:

Dumas	TAM 111	Jagalene
Jagger	Cutter	TAM 112

These yield results are consistent with other Texas A&M trials in the northern South Plains and Panhandle. All of these varieties are medium maturity but have a mixed bag of susceptibility or resistance to leaf rust and stripe rust. Varieties that have not performed well include all beardless wheat, the older TAM 200 & TAM 202, and NK 812. For a full

report of the three-year results for Gaines County see Irrigated Wheat Grain Yields.
Wheat streak mosaic virus (Courtesy of Brent Bean), year in and year out, is the worst disease we have in the Texas High Plains. Every year at least a few fields are infected with wheat streak mosaic virus. More recently the "High Plains disease," discovered in 1993, has caused damage. It was recently given and an official name and is now called **'**Wheat Mosaic Virus' or WMoV. Why did they make the name so similar to wheat streak mosaic virus? I have no idea, but from now on we will be using the new name in all of our discussions.

Both diseases produce very similar symptoms in wheat, that being severely chlorotic (yellow) leaves, some stunting, and in the worst cases, death of the plant. Impact on the wheat plant is most severe when infected with both diseases, which we saw a lot of in 2006. The wheat curl mite transmits the two diseases. The best control measure is to eliminate volunteer wheat in and around the fields where wheat will be planted in the fall. Volunteer wheat should be destroyed 21 days prior to planting wheat. Neither disease is transmitted nor survives in wheat seed or in the soil of previously infected fields. For a very good discussion on these two diseases, go to the following web site: http://varietytesting.tamu.edu/wheat/docs/e337wheatstreakmosiacvirus-2.pdf

All commercially available wheat varieties are susceptible to wheat streak mosaic to some degree. However, a few varieties have been identified that seem to perform better in wheat streak mosaic infested fields. To call these varieties 'resistant' might be a stretch, but at least some tolerance to either the disease or possibly the wheat curl mite seems to be occurring.

Seeding rates for grain yield. Whereas in earlier issues of FOCUS I have described increasing the seeding rate if looking to enhance forage production, especially in the fall, we have reduced the recommendations for irrigated and dryland seeding rates for grain yields. Traditionally, for irrigated grain yields, we have recommended 90-120 lbs./A, but increasing evidence from Texas A&M-Amarillo/Bushland suggests that 60 lbs./A is just adequate. Most of the time higher grain seeding rates (unless planted very late) have not increased grain yield. Likewise for dryland, the standard recommendation of 45-60 lbs./A for grain is now reduced to 30-45 lbs./A. Seed quality is as important for good grain yield as it is for forage yield (e.g., minimum germination of 85%, minimum test weight of 58 lbs./bu; see the previous issue of FOCUS).

Planting dates for grain. In general, for the Texas South Plains, there is little or no yield benefit planting wheat for grain before October 1 (more susceptible to insects, excess water use, etc.). This is especially true south of Lubbock.

Also, yield potential planting into early November is not significantly diminished, especially south of Lubbock. But keep in mind that the onset of colder soil temperatures, especially if below 45º F will retard wheat stands if planted later. If I could pick my date to plant wheat for grain at Amarillo I would pick October 1, but at Lubbock I would like October 15th. At Lubbock, I would expect over time, yields would begin to significantly diminish if planting after about November 10 in most years, especially in late November into December. The rainfall you receive in March after jointing and in April, however, might have far more impact on whether a grain crop is going to yield well. **CT**

ALFALFA CROP BOOKS STILL AVAILABLE

We still have some alfalfa crop books remaining from the recent alfalfa workshops in Hereford and Dalhart. Comprehensive information for Texas High Plains alfalfa is included. Most of these resources are on the web at http://lubbock.tamu.edu/othercrops, but

we can mail them to you for $20. Included are current recommendations, variety and herbicide information, and a color forage insect management guide. Contact Dena Griffith at 806-746-6101, or dgriffit@ag.tamu.edu **CT**

MORE CROP TOURS AND INDUSTRY FIELD DAYS

Although fall crop tours have already begun, we still have several on the calendar. Also, industry field days may be of interest. Here are the ones of which I am aware. For specific information, call Extension agents or industry representatives. **RB**

Yoakum County Crop Tour	12-Sep
Floyd County Crop Tour	19-Sep
Mitchell County Ag Tour	21-Sep
Crosby County Crop Tour	29-Sep

Industry Field Days

Deltapine	7-Sep
FiberMax	21-Sep
Stoneville/Monsanto	26-Sep
Americot	28-Sep

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