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TEXAS AGRICULTURAL
EXTENSION SERVICE

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Texas Pecan Pest Management Newsletter



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General

Hot dry conditions are prevalent across most of the state. Some scattered showers were reported last week in the southwestern part of the state around Fort Stockton and Garden City, but even this moisture is drying up.

Nut drop has been observed to varying degrees in all orchards. Drop during this time of year can be attributed to many different factors including insects, disease and weather related conditions. Overall, the crop still looks good for both natives and improved varieties.

Insects

Black Pecan Aphids: A spotted but heavy infestation of black aphids was observed in Bastrop county on July 29 and a light to moderate infestation on August 2 in Burleson county.

Feeding by black aphids is characterized by the angular yellow or brown necrotic areas on the leaflets. This angular appearance plus the presence of aphids easily separates this damage from disease or nutrient deficiencies.

Infestations tend to start in the lower shaded portion of the canopy, eventually spreading outward and upward. Feeding by black aphids will result in premature defoliation. With most

areas of the state having a good nut set, it is important to maintain healthy foliage into October or until the first frost.

Black aphids are generally easy to control in the United States, however there are reports that some control problems exist in parts of Mexico.

Infestations at this time of year are usually controlled with insecticides applied for hickory shuckworm.

Pecan Weevil: Although control measures for the pecan weevil are generally not initiated until later this month, it is now time to set up traps or plan for a system to for monitor adult weevil emergence.

In managing pecan weevils there are two very important points; 1) monitoring kernel development and 2), monitoring adult emergence from the soil.

For female weevils to successfully oviposit, kernel development needs to be in the late gel or early dough stage. The key to weevil management is preventing females from ovipositing. By identifying early maturing varieties, treatments can be made prior to oviposition. The first application of carbaryl is made around August 23 with a

second application around September 2.

The benefit of using traps is identifying late adult emergence due to drought. If drought has delayed adult emergence a third treatment will be needed.

Hickory Shuckworm: Treatments for the hickory shuck worm have started in the southern and central part of the state.

Treatments guidelines are not as refined for shuckworm as they are for casebearer. Treatments for shuckworm are initiated based on the crop development stage of half shell hardening. This stage can be determined by making cross sectional cuts of nutlets with a knife. Half shell hardening was observed July 29 on Wichita in Bastrop county.

Shell hardening starts at the tip end of the nut and develops toward the stem end. Where several varieties are planted in an orchard, an average development will have to be considered.

All insecticides that are labeled for the pecan nut casebearer can be used for shuckworm except insecticides containing *Bacillus thuringiensis*. Although the hickory shuckworm is the larva of a moth, shuckworm larvae do not feed outside the shuck prior to

entry and this offers very little opportunity for larvae to ingest the Bt.

Nut Curculio: Some nut drop from the nut curculio, *Conotrachelus hicoriae* was observed in Longview (Gregg county) during late July. Adult feeding punctures and larval feeding will cause a bleeding of brown sap from the nutlet. Curculio larvae are creamy white and legless. This absence of legs is an easy way to separate curculio from shuckworm.

Beneficials - The Parasites

Trichogramma: Some of the smallest insects known belong to the family Trichogrammatidae. Adults of these parasitic wasps are less than 1 mm in length. Species of this group are exclusively egg parasites and have been widely studied for biological control of a wide range of insect pests. Two species of Trichogramma that have been associated with pecan are *Trichogramma minutum* and *T. pretiosum*.

The adult females deposit their egg(s) in a host egg and under the right conditions the parasite egg hatches will hatch in a few hours. Upon hatching the parasite larva will begin feeding on the host embryo. This feeding causes and immediate cessation of host development and the host egg will turn black within a few days. The number of eggs deposited per host depends upon the size of the host egg. Trichogramma are usually solitary but as many as 50 adults have been obtained from some hosts.

The Trichogramma larvae completes their development with in the host and after pupation the

adult chews a hole through the egg shell to escape.

The length of the life cycle depends upon temperature. Development time can range from 7-75 days but usually takes from 7-16 days during the summer. Adult longevity is estimated at 2-5 days. Females will deposit 40 percent of her eggs within 12 hours and 76 percent within two days.

Mites

Mites are not insects but are closely related. Mites belong to the class Arachnida which also contains scorpions, daddy long legs, ticks and spiders. As with insects, there are many species of mites that are associated with pecan. A survey of pecan foliage in Georgia identified 22 species and a Louisiana survey found 27 species of mites.

Some mite species are phytophagous or plant feeding while others are predaceous. One of the more important of mite pests is the pecan leaf scorch mite.

Pecan Leaf Scorch Mite:

Infestations and defoliation caused by the pecan leaf scorch mite have been observed or reported in Texas from Zavala, Frio, Burleson and Robertson counties and one report was received from southeastern Oklahoma.

Populations of PLSM start in the lower portion of the canopy, spreading upward and out as populations increase. Mites and the spherical eggs are generally found on the underside of the leaflets. Heavy infestations produce a scorching of the leaflets which will result in premature defoliation. Scorching

caused by PLSM is a liver-brown color and starts along the midrib of the leaflet. Fungal leaf scorch which is a disease starts along the leaf margins and should not be confused with PLSM infestations.

Mite populations can increase rapidly during periods of hot dry weather. In laboratory studies the life cycle from egg to adult under 24 hour constant illumination is approximately 9.3 days at 80 F and 8.5 days at 90 F. For a 14:10 hour light dark photoperiod at 70 F egg to adult is approximately 20 days. Approximately 40 - 48% of the development time is spent in the egg stage.

Treatments for mites should begin when scorching is observed. Recommended pesticides include dimethoate at 2/3 - 1 pint per acre or Vendex® 4L at 1 pint per acre.

Proper application is also important for mite control. With most of the mites on the underside of the leaflets, thorough coverage is important. Because mite populations tend to start in the lower portion of the canopy, spray nozzles may need to be adjusted so the lower portion of the canopy obtains adequate coverage.

Diseases

Pecan Scab: Pecan scab infestations have slowed with the hot dry weather. However, high scab infestations have been observed in the coastal area on susceptible varieties.

Stem end blight: Some nut drop due to stem end blight has been observed in most orchards. Nutlets that drop due to stem end blight will be black on the inside.

Yesterday

The eleventh annual meeting of the Texas Pecan Growers Association was held July 14-16, 1931 in LaGrange, Texas.

During the meeting S.W. Bilsing presented paper on "Forecasting Probable Nut Case-Bearer Damage To Pecans".

In his talk Dr. Bilsing states that "to predict the probable abundance of any insect and the consequent resulting damage might be compared to forecasting the weather. Both are liable to result in failure".

Dr. Bilsing felt that the two factors which seem to influence case-bearer populations the most are food supply and parasitism and that these two factors are interdependent.

Through out the paper Dr. Bilsing points out the many pitfalls in trying to predict a biological event.

Around The State

Bastrop County - A spotted but heavy population of black aphids was observed in an orchard. The area is dry but the crop still looks good. Wichitas were at the half shell hardening stage on July 29 and shuckworm applications were being made.

Burleson County - Pecan leaf scorch mites were observed on some Wichitas on August 2. The area is dry and crop is fair.

Brazoria County - Area needs a rain. Little insect pressure at this time. Crop is still looking good.

Tom Green County - Very few aphids. Crop is entering the water stage and the area is very dry.

Wharton County - Area is dry. Heavy scab on Wichitas, Mahans. Crop is fair.

Wichita County - Area is dry but crop is still looking good.

Upcoming Meetings

Texas Counties

August 10
Wichita County
Mark Terning - CEA
(817) 766-0131

August 12
Blanco County
Todd Swift - CEA
(210) 868-7167

August 17
Tom Green County
John Begnaud - CEA
(915) 659-6528

August 18

Comanche County
Bob Whitney
(915) 356-2539

State Meetings

September 2

Florida Pecan Growers
Monticello, FL

September 16-17

Alabama Pecan Growers
Gulf Coast Substation
Fairhope, AL
Jim Gilliland
(205) 947-5298

Texas Pecan Show

Results

For those of you that were unable to attend the Texas Pecan Growers Conference last month I have included the place winners from the pecan show.

The information given herein is for educational purposes only. References to commercial products or trade names are made with the understanding that no discrimination is intended and no endorsement by the Cooperative Extension Service is implied.

VARIETY AWARDS - CLASSIC DIVISION

VARIETY & GROWER	COUNTY	#/LB.	%KERNEL	AWARD
BARTON				
Charles Winkler	Wintergarden	42.96	56.60	1st
Lin Boch	Eastland	47.53	47.41	2nd
Hamman Ranch	Real	51.96	57.23	3rd
BRAKE				
Frank Kolek, Jr	Colorado/Fayette	51.32	59.16	1st
Shirley Werchan	Williamson	52.08	60.27	2nd
Harold R. Schmidt	Mason	51.54	59.00	3rd
CHEROKEE				
William McCullough	Bell	54.19	55.00	1st
Pecan Valley	Real	49.43	54.62	2nd
Jerry Egan	Runnels	43.69	50.79	3rd
CHICKASAW				
Dr. Vayden Stanley	Irion	55.59	52.81	1st
Cross Creek Valley Pecan	Real	56.29	53.40	2nd
Woodward Farms	Runnels	58.28	52.60	3rd
ELLIOT				
Plantation Pecan Grove	Bastrop	62.03	53.78	1st
Clarence Wurzbach	Wintergarden	60.24	52.01	2nd
Alta Mae Bush	Wichita	66.91	53.10	3rd
GRABOHL				
Irene Reagor	Llano	46.90	60.95	1st
Madden Pecan Farm	Bastrop	41.42	58.65	2nd
Alta Mae Bush	Wichita	57.92	58.93	3rd
GRACROSS				
Madden Pecan Farm	Bastrop	35.92	56.66	1st
Lee Roy Fritz	Washington	41.05	57.68	2nd
Doug & Jhan Hewitt	Navarro	33.15	57.99	3rd
GRAZONA				
Zinsmeyer Pecans	Wintergarden	31.77	54.47	1st
Bernard Kriska	Navarro	36.38	54.52	2nd
C.E. Reames	Midland	37.93	54.28	3rd
HOUMA				
James Rother	Victoria	54.45	52.89	1st

VARIETY AWARDS - CLASSIC DIVISION

VARIETY & GROWER	COUNTY	#/LB.	%KERNEL	AWARD
IDEAL				
Royce Burnett	Upton	67.78	52.37	3rd
IMPERIAL				
Morrowood Farms	Fort Bend	29.75	56.93	1st
Dr. Vayden Stanley	Irion	29.83	57.57	2nd
Fred Stockbauer	Victoria	30.35	55.36	3rd
JOHN GARNER				
A.C. Tackitt	Knox	50.98	63.33	1st
Raymond Smith	Midland	48.18	60.09	2nd
R.A. White	Martin	52.95	62.52	3rd
MCCULLEY				
Mr. & Mrs. W.E. Holland	Llano	46.13	57.29	1st
Harkey Pecan	San Saba	53.98	58.90	2nd
Walter Foster	Taylor	40.79	54.32	3rd
MELROSE				
Florian Pawlak	Austin	50.50	54.40	1st
Harold Graf	Wharton	52.86	57.26	2nd
Ruby Fritz	Washington	57.18	54.52	3rd
OCONEE				
Texas Pecan Farms	Comanche	38.95	59.00	1st R.C.
Harold Graf	Wharton	42.56	56.99	2nd
Fred Stockbauer	Victoria	48.99	60.81	3rd
ODOM				
Lee Roy Fritz	Washington	39.24	55.93	1st
Harold Graf	Wharton	47.40	57.71	2nd
Charlie Goertz	Austin/Travis	42.76	55.61	3rd
OSAGE				
Fred Stockbauer	Victoria	70.30	54.49	2nd
PODSEDNIK				
Sally & Bob Marx	Galveston	22.99	53.32	1st
Glen Fry	Fort Bend	24.32	55.32	2nd
Doug & Jhan Hewett	Navarro	23.11	57.55	3rd

1992 TEXAS STATE PECAN SHOW RESULTS

COMMERCIAL DIVISION

GRAND CHAMPION

James and Barbara Welch

'Forkert'

Brazoria County

RESERVE CHAMPION

H. Boening

'Pawnee'

Guadalupe County

CLASSIC DIVISION

GRAND CHAMPION

Olivia Weiser Mize

'Schley'

Burleson/Lee County

RESERVE CHAMPION

Texas Pecan Farms

'Oconee'

Comanche County

NATIVE DIVISION

GRAND CHAMPION

Alton Reedy

Palo Pinto County

RESERVE CHAMPION

Charles Rose

Tom Green County

VARIETY AWARDS - COMMERCIAL DIVISION

<u>VARIETY & GROWER</u>	<u>COUNTY</u>	<u>#/LB.</u>	<u>%KERNEL</u>	<u>AWARD</u>
APACHE				
Georgia Mount	Wilbarger	44.09	60.50	1st
John Trendwell	Tom Green	39.18	58.83	2nd
Olan Tisdale	San Saba	41.12	58.45	3rd
BURKETT				
C.T.Thomas	Wilbarger	43.72	59.22	1st
Wayne Ward	Llano	41.17	58.61	2nd
Wild Horse Pecan Farm	Pecos	44.53	58.43	3rd
CAPE FEAR				
James & Barbara Welch	Brazoria	37.78	53.34	1st
Jerry & Jeanne Knapp	Navarro	39.39	53.44	2nd
Thurman Gibson	Anderson	41.61	54.97	3rd

VARIETY AWARDS - COMMERCIAL DIVISION

VARIETY & GROWER	COUNTY	#/LBS.	%KERNEL	AWARDS
CADDO				
Cecil Burns	Galveston	52.70	55.44	1st
Womack's Nursery	Comanche	55.65	56.45	2nd
Charles R. Ramsey	Lamar	55.14	55.83	3rd
CHEYENNE				
Robert Kaderka	Williamson	48.07	55.82	1st
Paint Creek Ranch	Kimble	44.91	58.30	2nd
Fred B. Beckermann	Washington	54.37	55.33	3rd
CHOCTAW				
Mize Pecan Co.	Wintergarden	32.97	56.34	1st
Pete Holubec	McCulloch	36.31	59.39	2nd
Whispering Hills Pecan Farm	Kerr	39.90	60.21	3rd
COMANCHE				
Harkey Pecan Farm	San Saba	38.77	56.43	1st
Mr. & Mrs. W.E. Holland	Llano	34.26	55.82	2nd
Vera Cluck	Baylor	37.64	55.75	3rd
DESIRABLE				
Mize Pecan Co.	Wintergarden	38.42	55.30	1st
Rhonda Wolynski	Bell	33.59	53.79	2nd
Reinhard Schneider	Milam	38.54	54.70	3rd
FORKERT				
James & Barbara Welch	Brazoria	36.39	63.06	1st G.C.
Olan Tisdale	San Saba	35.61	62.02	2nd
E.C. Nitschmann	Victoria	38.30	63.26	3rd
GRAKING				
Walter Williams	Dewitt	27.93	53.86	1st
Madden Pecan Farm	Bastrop	29.52	52.57	2nd
Pieprzica	Guadalupe	34.55	54.31	3rd
GRATEX				
Walter Williams	Dewitt	39.47	65.01	1st
Frio Pecan Farm	Real	39.17	66.68	2nd
Joel Morrow	Matagorda	40.16	65.36	3rd

VARIETY AWARDS - COMMERCIAL DIVISION

VARIETY & GROWER	COUNTY	#/LBS.	%KERNEL	AWARD
KIOWA				
Mize Pecan Co.	Wintergarden	35.82	59.21	1st
Doug & Jhan Hewett	Navarro	33.21	58.04	2nd
Fred Speck	Kerr	37.44	58.75	3rd
MAHAN				
Fry Brothers	Robertson	31.62	59.48	1st
Allen McGaughey	Knox	36.27	60.75	2nd
Frank Messina	Galveston	30.91	57.95	3rd
MARAMEC				
Paul Muhle	Redbud Trail Pecan	40.13	59.13	1st
Womack's Nursery	Comanche	45.49	60.46	2nd
Virgil & Joann Holbrook	Hood	42.31	57.52	3rd
MOHAWK				
Wayne Ward	Llano	28.92	60.24	1st
J.L. Greer Jr.	Edwards	29.23	58.17	2nd
Melvin David	Galveston	28.92	58.26	3rd
PAWNEE				
H. Boenig	Guadalupe	40.49	58.84	1st R.C.
E.C. Nirschmann	Victoria	39.07	59.29	2nd
Horace Brown	Edwards	41.40	60.39	3rd
SAN SABA IMPVD				
John Warlick	Redbud Trail Pecan	58.09	58.06	1st
Wade Schmidtzinsky	Gillespie	65.06	60.21	2nd
Virgil Woodfin	Wichita	78.60	58.68	3rd
SHAWNEE				
Pete Holubec	McCulloch	45.91	59.54	1st
Frio Pecan Farm	Real	43.36	58.59	2nd
Lewis Ranson	Kimble	43.99	59.61	3rd
SHOSHONI				
Horace Brown	Edwards	41.51	56.12	1st
Olan Tisdale	San Saba	38.09	52.49	2nd
Chester Funderburg	Wintergarden	38.02	52.43	3rd

VARIETY AWARDS - COMMERCIAL DIVISION

<u>VARIETY & GROWER</u>	<u>COUNTY</u>	<u>#/LBS.</u>	<u>%KERNEL</u>	<u>AWARDS</u>
SIOUX				
J. Boenig	Guadalupe	49.34	58.89	1st
Frio Pecan Farm	Real	52.48	60.24	2nd
Hamman Ranch	Real	58.18	59.40	3rd
STUART				
Billie Carroll	Anderson	39.91	49.71	1st
Lee Roy Fritz	Washington	40.51	50.01	2nd
Stewart Glen	Wintergarden	38.78	49.79	3rd
TEJAS				
Winkler Pecan Farm	Bell	53.46	54.19	1st
Whispering Hills Pecan Farm	Kerr	56.34	55.08	2nd
Lewis Ranson	Kimble	48.89	51.33	3rd
WESTERN				
Frio Pecan Farm	Real	48.87	57.80	1st
Josephine Hughes	Burnet	54.04	61.14	2nd
A.C. Tackitt	Knox	55.95	56.79	3rd
WICHITA				
Chester Funderburg	Wintergarden	42.43	61.87	1st
Leroy Olsak	Schleicher	44.76	62.76	2nd
Mize Pecan Co.	Wintergarden	49.09	62.71	3rd

VARIETY AWARDS - CLASSIC DIVISION

<u>VARIETY & GROWER</u>	<u>COUNTY</u>	<u>#/LB.</u>	<u>%KERNEL</u>	<u>AWARD</u>
SCHLEY				
Olivia Weiser Mize	Burleson/Lee	47.22	59.91	1st G.C.
Morrowood Farms	Fort Bend	45.12	61.03	2nd
Price Gloor	Victoria	44.44	59.91	3rd
SUCCESS				
Lois Royal	Atascosa	38.38	54.39	1st
Nolan Werchan	Williamson	38.28	54.77	2nd
Robert Montgomery	Taylor	41.25	55.11	3rd
TEXAS PROLIFIC				
Olan Tisdale	San Saba	58.20	52.52	1st
Brandi Thompson	Young	54.82	53.50	2nd
Harold R. Schmidt	Mason	59.44	53.08	3rd
TEXHAN				
Sugar Hill Ranch	Burleson/Lee	50.80	53.02	1st
Gus H. Kieschnick	Austin/Travis	69.00	52.47	2nd
Bud Adams Ranches	Milam	59.45	52.95	3rd
KNOWN HYBRIDS				
Olan Tisdale	San Saba	41.46	62.33	1st
Buckley Pecan Farms	Bell	48.39	63.55	2nd
Buckley Pecan Farms	Bell	49.57	61.50	3rd
VAR. SEEDLINGS				
Boyd Reece	Midland	50.28	57.80	1st
Zinsmeyer Pecans	Wintergarden	42.26	56.61	2nd
Mize Pecan Co.	Wintergarden	67.02	59.30	3rd
OTHER VARIETIES				
Horace Brown	Edwards	35.18	58.46	1st
Pecan Grove Plantation	Bastrop	32.23	62.77	2nd
Harold Graf	Wharton	37.29	57.25	3rd

VARIETY & GROWER	NATIVE DIVISION			AWARD
	COUNTY	#/LB.	%KERNEL	
NATIVE				
Alton Reedy	Palo Pinto	64.45	60.42	1st G.C.
Charles Rose	Tom Green	50.36	56.76	2nd R.C.
Dick Logee	Lamar	68.66	55.06	3rd
ST CHAMP NATIVE				
Robert & Beth Luedeker	Austin	74.19	57.04	1st
Walter Williams	Dewitt	57.75	58.89	2nd
Franklin Bohuslav	Lavaca	70.32	57.23	3rd
LIGHTEST NATIVE				
Adolph Kutach	Wharton	522.38	0.00	1st
Barry Austin	Navarro	491.33	0.00	2nd
Perry Kloesel	Lavaca	397.46	0.00	3rd