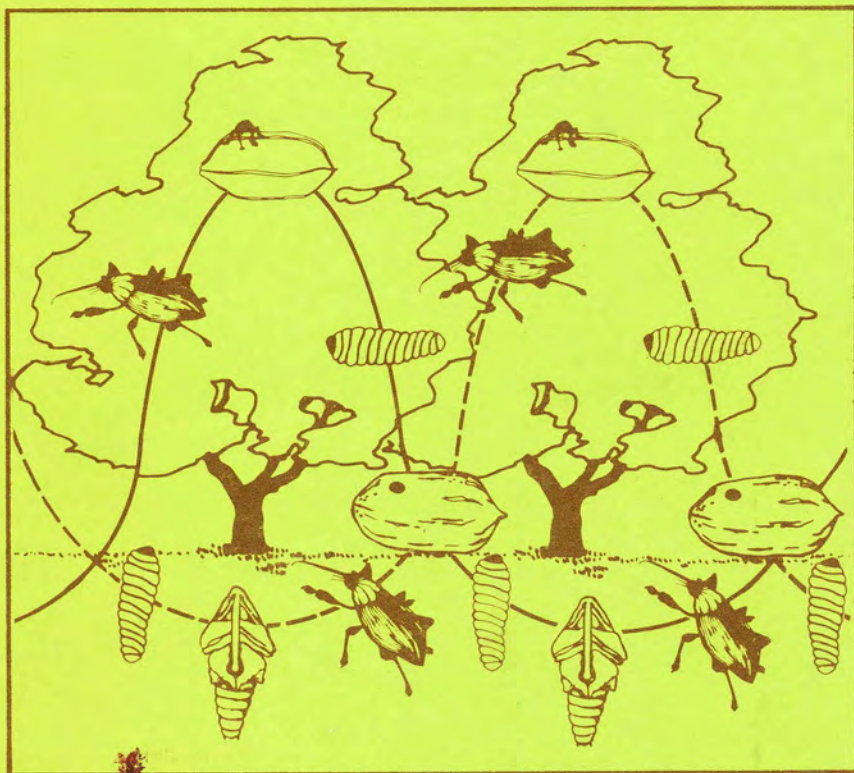


Pecan Weevil Distribution on Pecan Across the Pecan Belt



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Preface

Bulletin 238, like others in the Southern Cooperative Series of bulletins, is in effect a separate publication of each of the Agricultural Experiment Stations listed below.

Since the bulletin is identical for the several stations, it is suggested that a copy, or copies, be requested from only one source. Requests from outside the cooperating states should be addressed to the Department of Agricultural Communications, Texas A&M University, College Station, Texas 77843.

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COVER: Completion of the pecan weevil life cycle may take 2 to 3 years. Because of the variation in weevil development, overlapping of weevil populations can be expected in heavily infested orchards. Therefore, control measures for weevils in the first year may not greatly reduce the number of weevils emerging in the second year, but will affect the population in the third year. Continued weevil control in the second year will reduce populations in the fourth year. A precisely timed weevil control program is needed over several production seasons to effectively control weevil infestations.

Pecan Weevil Distribution on Pecan Across the Pecan Belt

written by

Marvin K. Harris

under the auspices of and assisted greatly by the

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Introduction

The pecan weevil, *Curculio caryae* (Horn) (Coleoptera:Curculionidae), is considered by some to be the most important problem facing pecan growers. The development of area-wide, pest management strategies for control of the pecan weevil is facilitated by knowing the general areas in which it occurs across the pecan belt. This report represents the best information available to the Technical Committee on pecan weevil distribution as of 1978. It is anticipated that this report will be periodically updated.

The pecan weevil is an obligatory nut feeder of plants in the genus *Carya*, family Juglandaceae. These hosts include the pecan, *Carya illinoensis* (Wang) K. Koch, which is the most horticulturally important plant that is native to the United States (Brisson 1974). The pecan weevil has been characterized as the most important arthropod pest of the pecan (Neel and Shepard 1976).

The general distribution of the pecan weevil is “west from New York to Iowa and south to Oklahoma, Texas and Georgia” (Gibson 1968). The distribution reported in this bulletin is an attempt to provide a more detailed picture of the pecan weevil and its association with pecan in the primary pecan producing states.

A knowledge of the distribution of the pecan weevil on pecan is important for many reasons, including the development of pest management strategies for pecan.

The distribution map presented in Figure 1 was developed by consulting numerous sources. These sources are cited in Table 1. If pecan weevil was reported from a given county, the entire county is considered to be infested.

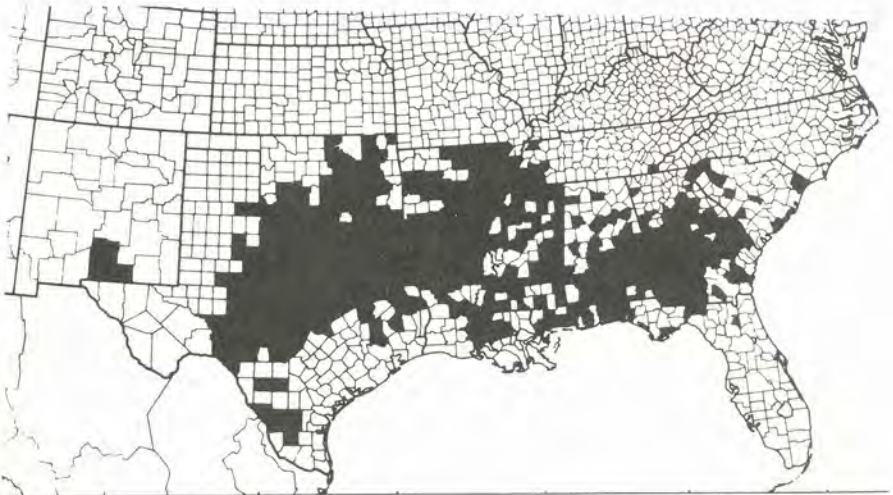


Figure 1. Distribution of pecan weevil by county across the pecan belt.

Several factors need to be kept in mind when interpreting the map and Table 1. First, the pecan weevil distribution was obtained primarily by examining information on pecan weevil on pecan from the states listed in Table 1. Thus, the map is not applicable to the states on the northern edge of the native pecan distribution, namely Kansas, Missouri, Iowa, Illinois, Kentucky, Indiana and Ohio (native pecan distribution obtained from Little 1971). Second, other *Carya* hosts of the pecan weevil have not been as closely surveyed as was the pecan in compiling this information. The water hickory, *C. aquatica* (Michx.) Nutt.; pignut hickory, *C. glabra* (Mill.) Sweet; and shagbark hickory, *C. ovata* (Mill.) K. Koch, in particular are widely distributed (Little 1971). These hosts may have been the original sources of infestations for the pecan weevil in states such as Georgia and Florida where the pecan is a recently (about 100 years ago) introduced species. This may also help to explain why the distribution of the pecan weevil is not contiguous with pecan in these states. Third, it is difficult if not impossible to prove a negative. The negative being in this case, the pecan weevil does not occur in a given county in the pecan belt. For some states like Arizona and California and for some areas of some states like most of New Mexico and far West Texas, where the pecan is an introduced plant and natural barriers and lack of alternate hosts prevent natural pecan weevil infestation, reasonable certainty exists that the distribution indicates pecan weevil absence as well as presence. In the case of south central Texas, where about one-third of the pecans sold in Texas are produced, again reasonable certainty exists that pecan weevil infestations in this area would have been discovered and reported. Yet no infestations are known from this area. In other areas where a pecan producing county reports no pecan weevil, but joins counties that do, closer observation may serve to substantiate the status of the pecan weevil in the county.

No substantiated reports of pecan weevil infesting pecan have been received from Mexico, and the pest is presently considered to be absent there.

Assistance from knowledgeable individuals is sought to improve on this distribution map in future printings. Interested persons may contact the individual in their area listed at the beginning of this bulletin.

TABLE 1. PECAN WEEVIL DISTRIBUTION ON PECAN BY STATE AND COUNTY FOR THE MAJOR PECAN PRODUCING STATES OF THE U. S.

State	County	County	County	County
Alabama	Autauga	Clay	Franklin	Montgomery
	Baldwin	Conecuh	Geneva	Morgan
	Barbour	Coosa	Greene	Perry
	Bibb	Covington	Henry	Pike
	Bullock	Crenshaw	Jefferson	Russell
	Butler	Dale	Lee	St. Clair
	Calhoun	Dallas	Lowndes	Tallapoosa
	Chambers	Elmore	Macon	Wilcox
	Choctaw	Escambia	Mobile	
	Clarke	Fayette	Monroe	

Total number of counties reporting pecan weevil is 38.

(Infested counties were determined from National Cooperative Economic Insect Reports published by the Extension Service during the years 1952 through 1975 and from a report by Dr. P. M. Estes.

Arizona No Pecan Weevil reported.

Arkansas	Arkansas	Desha	Lawrence	Poinset
	Ashley	Drew	Lee	Pope
	Baxter	Faulkner	Lincoln	Prairie
	Bradley	Franklin	Little River	Pulaski
	Calhoun	Fulton	Logan	Randolph
	Chicot	Grant	Lonoke	St. Francis
	Clark	Green	Marion	Saline
	Clay	Hempstead	Miller	Sebastian
	Cleveland	Hot Spring	Mississippi	Sevier
	Columbia	Howard	Monroe	Sharp
	Conway	Independence	Nevada	Stone
	Craighead	Izard	Ouachita	Union
	Crawford	Jackson	Perry	White
	Crittenden	Jefferson	Phillips	Woodruff
	Cross	Johnson	Pike	Yell
	Dallas	Lafayette		

Total number of counties reporting pecan weevil is 62.

(The Extension Survey Entomologist of Arkansas, W. P. Boyer, in consultation with Gordon Barnes, Extension Entomologist, writes in a 1975 letter that "the species is state wide in distribution." Thus, every county containing pecans has been considered to be infested.)

California No Pecan Weevil Reported.

State	County	County	County	County
Florida	Bradford	Jackson	Okaloosa	Walton
	Franklin	Madison	Santa Rosa	Jefferson
	Holmes			

Total number of counties reporting pecan weevil is 9.

(Infested counties were determined by a survey conducted by county Extension agents in Florida and reported in letters in 1975 from Dr. Joe C. Ball.)

Georgia	Baker	Dekalb	Laurens	Schley
	Baldwin	Dodge	Lee	Screven
	Barrow	Dooly	Lowndes	Seminole
	Ben Hill	Dougherty	McDuffie	Spalding
	Berrien	Douglas	Macon	Stewart
	Bibb	Early	Madison	Sumter
	Bleckley	Effingham	Marion	Talbot
	Brantley	Emanuel	Meriwether	Tattnall
	Brooks	Evans	Miller	Taylor
	Bullock	Franklin	Mitchell	Telfair
	Burke	Glasscock	Monroe	Terrell
	Butts	Glynn	Montgomery	Thomas
	Calhoun	Grady	Morgan	Tift
	Candler	Greene	Muscogee	Toombs
	Carroll	Hancock	Newton	Treutlen
	Chattooga	Harris	Oconee	Troup
	Chattahoochee	Hart	Oglethorpe	Upson
	Clarke	Henry	Peach	Walton
	Clay	Houston	Pierce	Warren
	Clayton	Irwin	Pike	Washington
	Clinch	Jackson	Pulaski	Wayne
	Colquitt	Jasper	Putnam	Webster
	Cook	Jeff Davis	Quitman	Wheeler
	Crawford	Jefferson	Randolph	Wilcox
	Crisp	Jenkins	Rockdale	Worth
	Decatur	Lamar		

Total number of counties reporting pecan weevil is 102.

(Infested counties were determined from communications with Drs. R. M. Barry and S. G. Polles in 1975 and are based on a survey conducted in the state in 1974. In separate communications with Dr. J. A. Payne, more recent findings were added.)

State	Parish	Parish	Parish	Parish
Louisiana	Ascension	De Soto	Jackson	Ouachita
	Avoyelles	East Baton Rouge	Lafayette	Pointe Coupee
	Bienville	East Feliciana	Lincoln	Rapides
	Bossier	Franklin	Livingston	Red River
	Caddo	Iberia	Morehouse	Richland
	Claiborne	Iberville	Natchitoches	Saint Landry

State	Parish	Parish	Parish	Parish
	Saint Martin Tensas	Union Webster	West Baton Rouge West Carroll	West Feliciana Winn

Total number of parishes reporting pecan weevil is 32.

(Dr. David J. Boethel reported in a 1977 letter that based on his work in Northern Louisiana and conversations with Dr. Jack Bagent, specialist, and Dr. Warren Meadows, specialist, Louisiana Extension Service, the parishes listed were infested with pecan weevil.)

State	County	County	County	County
Mississippi	Adams	Harrison	Marshall	Sunflower
	Alcorn	Hinds	Monroe	Tallahatchie
	Amite	Holmes	Montgomery	Tate
	Benton	Humphreys	Neshoba	Tippan
	Calhoun	Itawamba	Newton	Tishomingo
	Carroll	Jackson	Noxubee	Union
	Claiborne	Jasper	Panola	Walthall
	Clarke	Jefferson	Pontotoc	Washington
	Coahoma	Kemper	Prentiss	Wayne
	Copiah	Lamar	Quitman	Webster
	De Soto	Lauderdale	Scott	Wilkinson
	Forrest	Lawrence	Simpson	Winston
	Greene	Lincoln	Smith	Yalobusha
	Hancock	Lowndes	Stone	

Total number of counties reporting pecan weevil is 55.

(Dr. W. W. Neel reports in a 1974 letter that a canvassing of Mississippi county agents indicated the counties listed were infested with pecan weevil.)

New Mexico Otero

Total number of counties reporting pecan weevil is 1.

(Dr. H. W. Van Cleave, The Texas Agricultural Experiment Station and Texas A&M University, College Station, Texas, observed the pecan weevil infesting pecans in Otero county in 1970. The insect had apparently been inadvertently introduced as larvae in infested nuts imported from an infested area. Immediate steps were taken to eliminate the infestation from the county, and no pecan weevils have been observed there for at least the past 3 years. Future surveys results are expected to be negative from this county, but due to the long pecan weevil life cycle, it is considered infested in this report.)

Oklahoma	Atoka	Choctaw	Cotton	Haskell
	Bryan	Cleveland	Creek	Hughes
	Caddo	Coal	Garvin	Jackson
	Carter	Comanche	Harmon	Jefferson

State	County	County	County	County
	Kay	Mayer	Ottawa	Seminole
	Kiowa	Murray	Pawnee	Stephens
	Lincoln	Muskogee	Payne	Tillman
	Love	Noble	Pittsburg	Tulsa
	McLain	Nowata	Pontotoc	Wagoner
	McCurtain	Ofuskee	Pottawatomie	Washington
	McIntosh	Oklahoma	Pushmataha	Washita
	Marshall	Okmulgee	Rogers	

Total number of counties reporting pecan weevil is 47.

(Dr. R. D. Eijkenbary and Don C. Arnold found these counties listed as having pecan weevil infestations in the Oklahoma Cooperative Economic Insect Reports from 1956-1974 (published by the Extension Service).

South Carolina	Barnwell	Greenville	Laurens	Pickens
	Calhoun	Horry	Oconee	Saluda
	Charleston			

Total number of counties reporting pecan weevil is 9.

(Dr. R. L. Holloway reported infestations based on specimens in the collections of R. C. Fox, his own, and Museum records in the Entomology Department of Clemson University, Clemson, South Carolina. Information was also obtained from National Economic Insect Reports published by the Extension Service, 1952-75, and from a report by Dr. P. M. Estes.)

Tennessee	Fayette	Haywood	Obion	Shelby
	Hardeman	Madison	Polk	Tipton

Total number of counties reporting pecan weevil is 8.

(Dr. J. A. Payne reports these infestations based on damaged nuts found in the affected counties.)

Texas	Anderson	Childress	Eastland	Hamilton
	Angelina	Clay	Edwards	Hardeman
	Archer	Coke	Ellis	Harrison
	Bandera	Coleman	Erath	Haskell
	Baylor	Collin	Falls	Henderson
	Bell	Comanche	Fannin	Hill
	Blanco	Concho	Fisher	Hood
	Bosque	Cooke	Foard	Hopkins
	Bowie	Coryell	Franklin	Howard
	Brown	Crockett	Freestone	Hunt
	Burnet	Dallas	Frio	Irion
	Callahan	Delta	Gillespie	Jack
	Camp	Denton	Grayson	Jim Hogg
	Cass	Dickens	Gregg	Johnson
	Cherokee	Duval	Hall	Jones

State	County	County	County	County
	Kaufman	Mason	Rockwall	Throckmorton
	Kendall	Menard	Runnels	Titus
	Kent	Mills	Rusk	Tom Green
	Kerr	Mitchell	Sabine	Upshur
	Kimble	Montague	San Augustine	Val Verde
	King	Montgomery	San Saba	Van Zandt
	Knox	Morris	Schleicher	Walker
	Lamar	Nacogdoches	Schackelford	Webb
	Lampasas	Navarro	Smith	Wichita
	Leon	Nolan	Somervell	Wilbarger
	Limestone	Palo Pinto	Stephens	Williamson
	Llano	Panola	Sterling	Wise
	McCulloch	Parker	Stonewall	Wood
	McLennan	Polk	Sutton	Young
	Madison	Rains	Tarrant	Zavala
	Marion	Red River	Taylor	

Total number of counties reporting pecan weevil is 123.

(Infestation records were taken from Hoelscher, Clifford E., L. Reed Green, H. W. Van Cleave and Marvin K. Harris. 1975. Pecan Weevil: Where it exists in Texas. Pecan Quart. 9(2):24-25, and a letter from Dr. J. W. Stewart, Area Extension Entomologist, Uvalde, Texas, in 1976 which provided a new record for Bandera county.)

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