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1980 PECAN INSECT AND DISEASE CONTROL

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Pecans are native to Oklahoma. Records reveal that native Indians were the first to know of pecan trees and respect the value of this nut crop.

Until the past decade, Oklahoma pecan tree owners were accustomed to harvesting pleasing crops of pecans while providing little or no care to the trees.

Today, more and more pecan growers are realizing that a full management cultural program must be employed if consistent, high quality, profitable pecan crops are to be expected. In the modern pecan tree management program, attention is given to (1) annual fertilization, (2) reduction of weed and grass competition plus irrigation where practical (3) relieving over-crowding of trees and (4) control of insects and diseases.

The influx of insects and incidences of diseases in recent years has made the application of sprays to control these pests a very important factor in pecan production. In many seasons, insect and disease control will be the difference between a good pecan crop and no crop.

Even with the best chemicals and the most modern equipment, insect and disease control is not an easy job. Approximately seven months are required for growth and development of a pecan crop. At some time during this period, weather conditions are likely to be favorable for numerous pests.

To apply an effective pesticide spray to pecan trees, follow these rules: (1) use an effective chemical(s), (2) at the proper rate (concentration), (3) apply throughly, (4) at the proper time. When one or more of these four rules is not carried out properly, the spray will be reduced in effectiveness or be a total failure.

The amount of spray applied to an individual tree or acre of trees varies greatly depending on the type of equipment used and the manner operated. For example, 300 gallons of spray may be required to spray an acre with a high pressure or hydraulic sprayer while an aircraft may use less than 10 gallons per acre. Many pecan growers in Oklahoma use ground machines calibrated to deliver 100-200 gallons of spray per acre. Regardless of the gallonage of spray applied the amount of chemical (pesticide) applied to an acre should remain the same.

Suggested chemical rates in this publication are given as rate/acre and amount per 100 gallons. Either of these two methods may be used to determine the amount of chemical for mixing. The rate/100 gallons is based on a dilute application of 300 gallons/acre and is further broken down into amount/gallon for the convenience of those mixing smaller portions.

The dilute spray (listed as rate/100 gallons) is based on 300 gallons of spray required to properly cover an acre of optimum spaced mature trees to the point of run-off. Optimum spaced trees are stocked at the rate of 30 sq. ft. of cross sectional trunk per acre. More than 300 gallons of spray may be required per acre when the stocking rate is higher (over-crowded).

A dilute spray (300 gallons per acre) is approximately equal to the following number of gallons required to spray individual trees measured 4 1/2 ft. above the ground surface.

Trunk Diameter	No. Trees recommended/acre	Gallons/Tree (dilute)
13"	30	10
19"	15	20
23"	10	30

If less gallonage than 300 gallons per acre is used, increase the amount of chemical per 100 gallons proportionately.

EXAMPLE: It has been determined that the spray rig is calibrated at 150 gallons per acre which is equal to 10 gallons of spray per 19" diameter tree and 15 gallons for a 23" diameter tree, etc. The amount of chemical to add per 100 gallons would be double the amount given in the rate/100 gallon column.

The second method of determining the amount of chemical for mixing is to refer to the rate/acre and add the amount specified to the gallonage used to spray an acre. This method may be especially convenient for low volume applications.

PECAN INSECT CONTROL

REVISED: January 1980

Pest/Time To Spray	Insecticide and Formulation[1]	AMOUNT OF MATERIAL NEEDED			Comments
		Per Acre	Per 100 Gal	Per 1 Gal	
PHLLOXERA (GALLS)	Dormant Oil (97% Oil emulsion) *or*	10 1/2 gal	3 1/2 gal	4.6 oz	Spray tree thoroughly when tree is dormant (winter)
Apply from bud-break to when new shoot growth is 2 in. long. Controls are not effective when typical symptoms appear.	Lindane 12.5 EC *or* Malathion 25WP *or* Malathion 57 EC *or* Zolone 34.8 EC The Zolone registration reads "for suppression of phylloxera	4 1/2 qt 9 lb 2 1/4 qt 2 1/4 qt	1 1/2 qt 3 lb 1 1/2 pt 1 1/2 pt	3 tsp 1/2 oz 1 1/2 tsp 1 1/2 tsp	Make one or two applications (only one for Lindane) and thoroughly wet the foliage.
NUT CASE BEARER First Generation May 20 to June 10 when eggs appear (When tips of nuts turn Brown) Second Generation July 15-25	Torak 40.5 EC *or* Guthion 50W *or* Malathion 25W *or* Malathion 57 EC *or* Sevin 80W *or* Zolone 34.8 EC	1 1/2 qt 3 lb 9 lb 2 1/4 qt 4 1/2 lbs 2 qt	1 pt 1 lb 3 lb 1 1/2 pt 1 1/2 lbs 1 1/3 pt	—4 —4 1/2 oz 1 1/2 tsp 1/3 oz 1 1/3 tsp	1 or 2 applications. If second application is needed, apply 7 to 10 day after the first. 1 application for second generation if needed.
SHUCKWORM July 1 - July 7 A repeat application two weeks later may be needed.	Torak 40.5 EC *or* EPN 25W *or* Guthion 50W *or* Zolone 34.8 EC	1 1/2 qt 6 lb 3 lb 2 qt	1 pt 2 lb 1 lb 1 1/3 pt	—4 —4 —4 1 1/3 tsp	1 application
PECAN WEEVIL[3] Late July, early August or when weevils appear	Torak 40.5 EC *or* Sevin 80W *or* EPN 25W *or* Zolone 34.8 EC	1 1/2 qt 6 lb 6 lb 2 qt	1 pt 2 lb 2 lb 1 1/3 pt	—4 1/3 oz —4 1 1/3 tsp	Apply at two week interval from first weevil spray or immediately after a heavy rain.
APHIDS When they appear	Malathion 57 EC *or* Malathion 25W *or* Guthion 50W *or* Zolone 34.8 EC *or* Di-Syston 15% G	3 3/4 - 4 1/2 pt 7 1/2 lb 2/3 pt 2 qt —4	1 1/4 - 1 1/2 pt 2 1/2 lb 1/4 pt 1 1/3 pt —	1 1/2 tsp 1/2 oz —4 1 1/3 tsp 10-20 lbs	One application Soil Application in May work granules into upper 2-3 inches of soil
WEBWORM OR WALNUT DATANA When caterpillars appear feeding on leaves (June to late August)	Guthion 50W *or* Sevin 80W	3 lb 4 1/2 lb	1 lb 1 1/2 lb	—4 1/3 oz	1 or 2 applications
TWIG GIRDLER When damage first occurs - Late August or early September.	Guthion 50W Sevin 80W	3 lb 4 1/2 lb	1 lb 1 1/2 lb	—4 1/3 oz	
STINK BUGS	Malathion 57 EC	2 1/4 qt	1 1/2 pt	1 1/2 tsp	

1. See table for harvest interval and grazing restrictions.
2. Gal = gallon, lb = pound, pt = pint, qt = quart, tbs = tablespoon, tsp = teaspoon
3. Pecan Weevil: This insect is a serious problem in most sections of the state. The damage may be observed in two ways: (1) shedding of the immature pecans because of the feeding punctures of the adult weevils; (2) mature pecans with a hole cut into the side. The presence of adult weevils may be found by shaking

(footnotes cont'd)

or jarring the branches of the pecan trees to dislodge the weevil. A sheet placed on the ground under the tree is the best method of collecting weevils when they are dislodged. A good rain following a dry spell in August or September usually results in the emergence of large numbers of weevils from the soil, and a spray should be made immediately after the rain. See Fact Sheet 7175 Sampling Methods for Adult Pecan Weevils.

4. Torak, Guthion, EPN, and Di-Syston are highly toxic insecticides. They should be used by the commercial grower only.

SPRAY SCHEDULE FOR VARIETIES SUSCEPTIBLE TO SCAB

APPLICATION AND TIMING	DISEASE INVOLVED	FUNGICIDE[3] AND FORMULATION	AMOUNT OF MATERIAL NEEDED		
			Per 1 Gal	Per 100 Gal	Per Acre
PRE-POLLINATION. Apply when leaves are emerging after night temperatures reach 55°F.	Scab	Cyprex 65 W Du-Ter Benlate 50W	1 tsp 1 tsp 1 tsp	1/2 lb 1/2 lb 1/2 lb	1 1/2 lb 1 1/2 lb 1 1/2 lb
FIRST COVER[1]. Apply when tips of nuts turn brown.	Scab				
SECOND COVER[2]. Apply 2 to 4 weeks after first cover.	Scab				
THIRD COVER. Apply 2 to 4 weeks after second cover.	Scab				
FOURTH COVER. Apply 2 to 4 weeks after third cover.	Scab				

1. The insecticides listed for case bearer control may be combined with the fungicides listed above.
2. To prevent the development of severe scab and other leaf diseases during periods with frequent rains and long dew periods, a fungicide must be applied at 10-14 day intervals. During very dry periods only limited applicatios may be needed. Benlate may be applied every 3 to 4 weeks.
3. See table for harvest interval and grazing restrictions.

Recommended Intervals Between Last Application and Harvest and Other Restrictions

Chemical	Interval Between Last Application and Harvest and Other Restrictions
Benlate, Malathion, Sevin	No time limitations or grazing restrictions.
Di-Syston	Do not harvest nuts within 80 days of treatment.
Lindane	Do not graze treated areas.
EPN, Dimethoate	Do not harvest nuts within 21 days of treatment, and do not graze treated areas.
Cyprex, Du-Ter	Do not apply after shucks have started to open, and do not graze treated areas.
Torak, Zolone	Do not apply after shuck split, do not graze or feed cover crops in treated area.

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