



# Current Report

Cooperative Extension Service • Division of Agriculture • Oklahoma State University

## Weed Control in Pecans, Apples and Peaches

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A weed may be defined as any plant growing where it is not wanted. Weeds compete with other plants for water and plant nutrients, reducing the growth and yield of these plants. Tillage practices can be used to control many weeds around young orchard trees, and proper use of herbicides can reduce the number of cultivations necessary to decrease competition from the weeds for water and plant nutrients.

Federal and state laws and regulations pertaining to the use and application of herbicides are frequently changed and revised. Thus it is necessary that growers be informed as to the status of label clearances for herbicides. Labels on the container give information on application restrictions, common rate, timing, directions for use and other facts which will allow for the most efficient use of these herbicides.

### PRINCIPLES IN USING HERBICIDES

The following basic principles are important in using herbicides for weed control:

1. Know the weed problem before choosing the herbicide. The susceptibility of weeds to different herbicides varies with the weed species.
2. Read the label for registration approval, precautions, limitations and directions of use. See Fact Sheet 7454.
3. Choose the type of herbicide that will do the most good for the weed problem and the crop system you have. In pecans, grazing often must be considered. If the area will be grazed, only herbicides that are labeled for grazing area can be used. Information on types of herbicides and some of the factors affecting the choice of the correct herbicide is available in Fact Sheet 2750.
4. If the herbicide is new, try it on a small acreage the first time you use it. Even though researchers have shown the herbicide to be effective, field use by growers on small areas is suggested before the herbicides are used on a large acreage. This gives the grower a chance to

learn how to properly use the herbicide and to determine if there are any adverse effects from use of the chemical.

5. Time of application is very important in herbicide usage. Check the label to determine when the herbicide should be used in relation to crop growth, fruiting and weed growth.

6. Apply the herbicide accurately and at a uniform rate. It is important to apply the herbicide so that it will be only in the area where you want it. Drift can be a major problem in herbicide application. For information on precision calibration of a sprayer see Fact Sheet 1216.

7. It is not necessary to treat the entire orchard floor. A strip 3-8 feet on each side of the tree is usually kept clear of weeds and the vegetation in the row middles is allowed to grow and kept mowed. Keeping the row middles in sod makes getting orchard equipment through easier, and mowing reduces competition with the trees.

Many factors affect herbicide performance. Some of these can be controlled by time and methods of application or by the formulation of herbicide used. Study these factors before selecting or applying herbicides. For further information on factors affecting herbicide performance see Fact Sheet 2768.

### TYPES OF HERBICIDES

Herbicides differ tremendously in the mode of action by which they kill weeds. The different types of herbicides are discussed in Fact Sheet 2750. When choosing a herbicide, consider the age of the trees, kind of weeds, other uses of the area and size of the weeds. It is very important to know if the orchard floor will be grazed. Many of these herbicides cannot be used in areas where grazing will take place. There are three different types of herbicides that are approved for use in orchards: contact, preemergence and foliage applied translocated herbicides.

## Contact Herbicides

The contact herbicide that is approved for use in orchards is Paraquat. This herbicide works best when applied at relatively high temperatures and in large gallonage per acre so that good coverage of the weeds is obtained. A non-ionic surfactant should be added in order to get maximum results. It is important not to allow the spray to contact green stems or the fruit or foliage of the trees. This means that the spray should be applied with a shielded sprayer, directed away from the trees and be applied when there is little or no wind. If the chemical is applied in strong winds, trees can be greatly damaged. Paraquat can not be used when the area will be grazed. Paraquat kills by contact and must be used on small weeds for best results. It also requires repeat applications for season long control. Study the label before using to be sure that your operation meets the conditions of use of the herbicide.

## Preemergence Herbicides

Simazine, diuron, norflurazon, oryzalin, terbacil and napropamide are all preemergence type herbicides that are taken up from the soil. They are applied to the top of the soil and must be activated by rainfall. These must be applied to a clean soil before the weeds germinate. If rainfall occurs and they are activated, they will kill the young germinating weed seedlings as they start to grow. These preemergence type herbicides are the same chemicals that are used in row crops to keep the crops clean.

Preemergence herbicide rates are based on soil type. It may be necessary to sample the soil and have it classified if this information is not available. Heavy clay soils or soils high in organic matter require more herbicide to control weeds than sandy soils. Usually a range of rates is given on the labels, where the lowest rate is for sandy soils and the highest rate is for clay soils. If the high rate is used on sandy soils, usually injury to the crop will occur. If the low rate is used on clay soils, often weed control will be poor. Some herbicides cannot be used on sandy soils, so be sure to consult the label before applying these chemicals.

## Foliage Applied Translocated Herbicides

Roundup is applied to the foliage of the weeds and translocated into the plant. It is necessary for the weeds to be growing at the time of application for effective control. This herbicide is effective for control of many perennial weeds such as johnsongrass, bermudagrass, horsenettle and other weeds that are usually considered very difficult to control. Most of these weeds are controlled more effectively if they are sprayed after they have started to bloom. Be sure to check the label for the rate needed for the particular weed problems that you have.

Do not allow the spray to drift or mist to contact the green foliage or green bark or suckers of the trees. If this herbicide can get to the cambium layer of the trees it will translocate and injure the trees. Do not apply the herbicide during heavy stress periods in midsummer when the weeds are not growing or poor results will be obtained. Best results on many perennial weeds are obtained in September or early October if adequate moisture is available. Johnsongrass can be controlled any time it is in the bloom stage or beginning to head out and adequate moisture is available so that the grass is not stressed.

## POISON IVY CONTROL

Ammate is an excellent herbicide to use for poison ivy control in apple orchards. Mix a pound per gallon of water and wet the leaves of the poison ivy thoroughly. If new plants develop later, repeat the treatment.

## OTHER TREE FRUITS

Herbicides are approved for use in other tree fruits such as pears and plums. Most other fruits are not grown commercially in Oklahoma so these are not discussed here. If you have other tree fruits, check the labels of the herbicides discussed for apples and peaches to determine if these chemicals are approved for your crop.

WEEDS	TIME OF APPLICATION	HERBICIDE(S) USE LABEL RATE	COMMENTS
APPLES*, PEACHES* AND PECAN*			
Annual weeds and grasses	Preemergence	simazine (other formulations besides Princep are now available)	Use as directed spray in the spring to orchards established one or more years for apples and peaches, two years for pecan. Apply simazine to a clean soil before weeds germinate, or tank mix with paraquat to kill germinated weeds. Do not use on gravelly, sand or loamy sand soil.
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		Sollicam 80W (norflurazon)	Use as a directed spray in late fall to early spring prior to weed emergence or tank mix with paraquat to control germinated weeds. MAY BE USED IN NEWLY PLANTED PECAN AND APPLE ORCHARDS. PEACH trees must be established at least 6 months before use. Avoid contact with fruit or foliage. Do not apply when nuts or fruit are on the ground at harvest.
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		Surflan 75W (oryzalin)	Work all trash & established weeds into the soil before applying Surflan. Apply the spray directly to the ground prior to weed emergence or tank mix with paraquat to kill germinated weeds. MAY BE USED IN NEWLY PLANTED ORCHARDS.
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		diuron (other formulations besides Karmex are now available)	Use as a directed spray in the spring under trees established one year or more for apples or 3 years or more for peaches and pecans. Apply to a clean soil before the weeds germinate. Do not apply to soils with less than 1/2% organic matter for pecans. Do not treat apple varieties grafted on full-dwarfing rootstocks.
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		Sinbar 80W (terbacil)	Apply in the fall after harvest or spring before weeds emerge (spring only for pecan). Use only in peach or apple orchards established 3 or more years. Use only in pecan orchards established 1 or more years. Do not contact foliage or fruit. Do not use on sand, loamy sand or gravelly soils, or on soils with less than 1% organic matter.
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		Devrinol 50W (napropamide)	Apply to weed-free soil surface from fall to early Spring prior to tree growth. Do not apply to frozen ground. The treatment should be shallowly incorporated or irrigated into the soil within 24 hours if no rainfall occurs. Do not apply when fruit or nuts are on the ground during harvest. MAY BE USED IN NEWLY PLANTED ORCHARDS.
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WEEDS	TIME OF APPLICATION	HERBICIDE(S) USE LABEL RATE	COMMENTS
APPLES*, PEACHES* AND PECAN*			
		Sollicam 80W + simazine or diuron ..... Surflan 75W or Surflan AS + simazine or diuron or Sollicam 80W or Sinbar 80W ..... Devrinol 50WP + Sinbar 80W or diuron ..... Sinbar 80W (terbacil) + diuron	The tank mixes of preemergence herbicides at the left have been recommended on the label of at least one of the materials in the mixture. Check the label(s) for specific instructions. In general, any herbicide may be legally used in a tank mix, as long as the timing, rates, soil conditions, etc. do not violate the label instructions for each of the materials in the tank mix. However, THE USER ASSUMES ALL RISKS ASSOCIATED WITH TANK MIXES NOT SPECIFICALLY MENTIONED ON THE LABELS FOR THE MATERIALS IN THE MIX. It is advisable to check the compatibility of materials before application.
Seedling weeds	Emerged weeds contact herbicide	Paraquat <sup>R</sup> or Gramoxone <sup>R</sup> + nonionic surfactant	Use as directed spray with a surfactant to small emerged weeds. Be sure to read the label first for special precautions when using this compound. Retreatments may be necessary. May be used with certain approved preemergence herbicides for long lasting control. Avoid contact with green tree stems and leaves.
Poison Ivy, Woody plants Broadleaf	Growing weeds	Ammate-X (AMS)	Apply as a wetting spray to the foliage according to label directions. Keep spray off tree foliage and fruit. FOR APPLES ONLY.
Annuals and Perennials	Postemergence	Roundup (Glyphosate)	Rate, time of application, and days to harvest depends on weeds to be controlled and crop, so consult the label. Avoid contact with foliage or green bark in apples and pecans, and avoid contact with any part of the tree in peaches. Shielded boom sprayer or wiper application advisable.

\*Read and follow label directions, precautions and limitations. If label information contradicts information presented here, the label information takes precedence.

<sup>R</sup> Restricted Use Pesticide.

"The pesticide information presented in this publication was current with federal and state regulations at the time of printing. The user is responsible for determining that the intended use is consistent with the label of the product being used. Use pesticides safely. Read and follow label directions. The information given herein is for educational purposes only. Reference to commercial products or trade names is made with the understanding that no discrimination is intended and no endorsement by the Cooperative Extension Service is implied."

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