

# Weed Management in Blackberry<sup>1</sup>

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Weeds compete with blackberry plants for light, nutrients, and water. Weed interference can be minimized with proper cultural practices and herbicides. General maintenance such as controlling weeds in adjacent areas (i.e., nearby fields, ditches, and driving paths), preventing weeds from producing seeds, and cleaning mowing equipment of weed seed, will prevent weeds from becoming a serious problem. Cultivation can be used but should be shallow to prevent root pruning and soil erosion.

## Chemical Control

Herbicides available for weed control in blackberry are included in Tables 1 and 2. Because soil types in Florida vary, consult the labels for application rate restrictions based on soil type. Bearing plants are blackberry canes that are currently producing fruit. Nonbearing plants are blackberry canes that will not produce fruit for a year after application. The tables include preharvest intervals (PHI).

All herbicides should be directed to the base of the plant; this method provides coverage of the weeds while minimizing the contact to the plants. Young plants should be protected with nonporous wraps or growth tubes to minimize uptake of the herbicide. This is especially important for systemic postemergence herbicides (for example,

glyphosate) and contact burndown herbicides (for example, paraquat, diquat, and glufosinate).

Tank mixing can broaden the spectrum of weed control. A preemergence herbicide may only control the most problematic weed in the orchard and leave some weed species unaffected. A preemergence herbicide can be tank mixed with another preemergence herbicide that controls several weed species but not the most problematic weed in the orchard.

The most common method of tank mixing is a postemergence herbicide with a preemergence herbicide. This method provides control of the weeds that are above the soil surface and controls weeds for a longer period. Consult the label for compatible tank mixing partners. If concerned, use a jar filled with the herbicides and water, then agitate the jar to see if the herbicides mix.

Practices for improving weed control with herbicides are as follows:

1. **Herbicide selection.** Preemergence herbicides control the weeds before they emerge from the seed or break the soil surface. Postemergence herbicides control weeds that have emerged through the soil surface.

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2. **Optimal timing.** Preemergence herbicides should be applied in the early spring or fall before annual weeds emerge. Postemergence herbicide efficacy decreases as weeds grow. Consult the label for the correct size of weed to control.
3. **Sufficient coverage.** Herbicide labels require certain nozzle types or applications of a certain number of gallons per acre (GPA) or nozzle types to ensure proper coverage. Before spraying, check that all nozzles have a correct spray pattern and correct output.
4. **Adequate activation.** Preemergence herbicides require rainfall or irrigation to move the herbicide into the soil profile where the weed seeds are present. Postemergence herbicides require a nonionic surfactant, crop oil concentrate, or methylated seed oil for increased herbicide uptake.

## Herbicide Resistance

Herbicide-resistant weeds are a continuous and growing concern for farmers. Methods for reducing the chances of herbicide resistance include:

1. **Rotate herbicide's mode of action.** Each herbicide's mode of action (MOA) is assigned a numerical group. Tables 1 and 2 list the MOA for each herbicide. Rotate between modes of action/numerical groups.
2. **Include multiple MOA.** Many herbicides allow for tank mixing. It is often suggested that preemergence herbicides be tank mixed with postemergence herbicides. This method controls weeds that will emerge, as well as weeds that have already emerged.
3. **Managing known resistance.** If an area of the field is known to have a resistant weed species, use mechanical weed removal to prevent the weed from producing seeds or other methods of propagation. Please contact your county Extension agent to have the weed resistance confirmed and documented.

Table 1. Preemergence weed control in blackberry

Common name (lb. a.i./acre)	Trade name (product/acre)	MOA	Crop age	Comments
<b>Dichlobenil</b> Up to 4 2.0–3.9	(Casoron®) 4G Up to 100 lb. (Casoron®) 1.4 CS 1.4–2.8 gal.	20	Bearing / nonbearing	<ul style="list-style-type: none"> <li>Annual and some perennial weeds</li> <li>Casoron 1.4 CS must be applied to well-established plantings. Do not apply during new shoot emergence. Do not apply to St. Lucie fine sand, Arzell fine sand, and other light, sandy soils. Apply soil treatments from November 15 to February 15 when temperatures are below 70°F.</li> </ul>
<b>Isoxaben</b> 0.5–1.0	(Gallery®, Gallery® T&V) 75 DF 0.66–1.33 lb.	12	Nonbearing	<ul style="list-style-type: none"> <li>Certain broadleaf weeds</li> <li>Direct spray solution to the base of the canes. Rainfall or a sprinkler irrigation of 0.5 in. or more within 21 days after application is required for activation. Can be applied to newly transplanted plants after irrigation or rain settles soil around the roots.</li> </ul>
<b>Isoxaben + Oryzalin</b> 2.0–4.0 + 0.5–1	(Snapshot®) 2.5 TG 100–200 lb.	12 + 3	Nonbearing	<ul style="list-style-type: none"> <li>Certain broadleaf and annual grass weeds</li> <li>Apply with a drop or rotary spreader. Requires 0.5 in. or more of rainfall or irrigation within 3 days of application for activation. Do not exceed 600 lb. product/acre in a year. Allow 60 days between applications.</li> </ul>
<b>Napropamide</b> 4	(Devrinol®) 50 DF 8 lb. (Devrinol®) 10 G 40 lb.	15	Bearing / nonbearing	<ul style="list-style-type: none"> <li>Small-seed broadleaf and annual grass weeds</li> <li>Can be applied to newly transplanted plants. Apply in fall or early spring before weeds emerge. Direct spray solution to the base of the plants to minimize contact with foliage and fruit. Cultivate or irrigate to a depth of 2–4 in. within 24 hours of application.</li> </ul>
<b>Norflurazon, MOA 12</b> 0.98–1.18	(Solicam®) 80 WDG 1.25–1.50 lb.	12	Bearing / nonbearing	<ul style="list-style-type: none"> <li>Small-seed broadleaf and annual grass weeds</li> <li>PHI 60 days</li> <li>Apply during the dormant season. Do not apply before 12 months after planting. Temporary loss of pigment (whitening) in leaf veins may occur with normal use. Rainfall or irrigation is required within 4 weeks of application. Can be applied as a sequential application, but do not exceed 2.5–3.75 lb. product/acre in a year.</li> </ul>
<b>Oryzalin</b> 2–6	(Oryzalin, Surflan®) 4 AS 2–6 qt.	3	Bearing / nonbearing	<ul style="list-style-type: none"> <li>Certain annual broadleaf and grass weeds</li> <li>Apply as a sequential treatment with 2.5 months between applications. Do not exceed 12 qt./acre per year. Irrigation or rain event of 0.5–1 in. must occur within 1 week of application.</li> </ul>
<b>Simazine</b> 2–4	(Princep®, Simazine) 90 WDG 2.2–4.4 lb. (Princep®, Simazine) 4 L 2–4 qt.	5	Bearing / nonbearing	<ul style="list-style-type: none"> <li>Annual broadleaf and grass weeds</li> <li>Do not apply more than 1 lb. a.i./acre on plantings less than 6 months old. Apply half the maximum in the spring before bud break and half in the fall. Do not apply more than 4 lb. a.i./acre per calendar year. Moisture is required to get the herbicide into the soil profile.</li> </ul>
<b>Terbacil</b> 0.8–1.6	(Sinbar®) 80 WP 1–2 lb.	5	Must be established for 1 year.	<ul style="list-style-type: none"> <li>Annual broadleaf and grass weeds</li> <li>PHI 70 days</li> <li>Make a single band or broadcast application. Apply in the fall or early spring before fruit set and weed emergence. Do not apply to soils containing less than 1% organic matter. Approximately 0.5–1.0 in. of rainfall or irrigation must occur within 2 weeks of application.</li> </ul>

Table 2. Postemergence weed control in blackberry

Common name (lb. a.i./acre)	Trade name (product/acre)	MOA	Crop age	Comments
<b>Carfentrazone</b> 0.013–0.031	(Aim®) 2 EC 0.8–2.0 fl. oz. (Aim®) 1.9 EW 0.8–2.0 fl. oz.	14	Bearing / nonbearing	<ul style="list-style-type: none"> <li>Broadleaf weeds</li> <li>PHI 15 days</li> <li>Consult label for appropriate rate based on weed species. Do not apply more than 6 fl. oz./acre in a year. Apply with hooded sprayer direct to the bottom 18 in. of the cane to reduce contact with green stem tissue, desirable fruit, blooms, and foliage. Applications must be 14 days apart. Include a nonionic surfactant at 0.25% v/v or crop oil concentrate at 1% v/v.</li> </ul>
<b>Clethodim</b> 0.14–0.25	(Arrow®, Select®) 2 EC 6–8 fl. oz. (Select Max®) 1 EC 9–16 fl. oz.	1	Formulations vary	<ul style="list-style-type: none"> <li>Annual and perennial grass weeds</li> <li>PHI 7 days</li> <li>Include a nonionic surfactant at 0.25% v/v. Direct the spray to the base of the canes.</li> </ul>
<b>Diquat</b> 0.7–0.9	(Diquat) 2L 1.5–2.0 pt.	22	Nonbearing	<ul style="list-style-type: none"> <li>Broadleaf and grass weeds</li> <li>Direct spray to the base of the plant to minimize contact with green stems and foliage. Include a nonionic surfactant at 0.06%–0.5%. Apply for site preparation before planting and do not apply within 1 year of harvest.</li> </ul>
<b>Fluazifop</b> 0.25–0.38	(Fusilade® DX) 2 EC 16–24 fl. oz.	1	Bearing / nonbearing	<ul style="list-style-type: none"> <li>Annual and perennial grass weeds</li> <li>Direct spray solution to the base of the canes to minimize contact with leaves. Do not apply more than 72 fl. oz./acre per season. Include nonionic surfactant at 0.25%–0.5% v/v or crop oil concentrate at 1% v/v.</li> </ul>
<b>Glyphosate</b> 0.47–4.5	(Various formulations)	9		<ul style="list-style-type: none"> <li>Broadleaf and grass weeds.</li> <li>PHI 14 days.</li> <li>Glyphosate has various formulations. Consult individual labels for rates. Do not exceed 9.6 lb. a.i./acre in a single season. Direct spray solution to the base of the canes to minimize contact with desirable vegetation.</li> </ul>
<b>Paraquat</b> 0.5–1	(Gramoxone Inteon®) 2 SL 2–4 pt. (Firestorm®) 3 SL 1.3–2.7 pt.	22	Before new canes emerge	<ul style="list-style-type: none"> <li>Broadleaf and grass weeds</li> <li>PHI 21 days</li> <li>Direct spray to the base of the canes to minimize drift to foliage, flowers, and fruits. Do not make more than five applications per year.</li> </ul>
<b>Pelargonic acid</b>	(Scythe®) 3%–10% v/v	27	Bearing / nonbearing	<ul style="list-style-type: none"> <li>Broadleaf and grass weeds</li> <li>Contact herbicide that should be applied with a shielded sprayer and direct spray to the base of the plant to minimize contact with foliage and green bark. Apply before new growth or crop emerges from the soil. Should be tank mixed with preemergence herbicide to broaden spectrum of weed control.</li> </ul>
<b>Sethoxydim</b> 0.3–0.5	(Poast®) 1.5 EC 1.5–2.5 pt.	1	Bearing / nonbearing	<ul style="list-style-type: none"> <li>Annual and perennial grass weeds</li> <li>PHI 45 days.</li> <li>Include crop oil concentrate at 2 pt./acre or methylated seed oil at 1.5 pt./acre. Do not apply more than 2.5 pt./ in a single application. Do not exceed 5.0 pt./ per season.</li> </ul>