

2023 PEST MANAGEMENT GUIDE: WEEDS



Cultural Weed Management

Why culturally manage weeds? To increase yield and reduce pesticide exposure to off-target organisms, such as bees.

Weeds Compete with Wild Blueberry for:

- Water
- Light
- Nutrients

The method for controlling one weed may encourage another. A combination of careful ID and monitoring of the weed situation in a field, with cultural management and the wise use of herbicides (only when critical) forms the basis of a sound weed management program.

THERE IS NO QUICK FIX. One method will not control all weeds.

CULTURAL WEED MANAGEMENT FOR WILD BLUEBERRY		
WEEDS MANAGED	METHOD	COMMENTS
Most weeds, especially grasses	Test soil for pH and reduce with sulfur if above 4.0	Add fertilizer only if leaf analysis indicates a deficiency. Maintain soil pH at 4.0.
Most weeds except grasses	Hand pulling	Effective against spot infestations. Pull before any weed flowers go to seed.
Weeds spread by seed or vegetative parts carried on equipment, especially mechanical harvesters	Field sanitation	Steam clean and inspect equipment before entering a field.
Bracken fern, sweet fern, dogbane, seedling or sprouting trees, flowering weeds	Mowing above blueberry plants	Most successful if done during the vegetative year. Cut flowers off before they go to seed.
Coniferous trees, some weeds spread by seed	Fire pruning	When burning with straw or hay, use weed-free material.
Weeds that form crowns at or above ground level	Cut or mow woody weeds three times in the non-crop year	Mow or cut plants to ground level.
Some weeds spread by seed	Mulching on bare spots	Apply mulch 2" to 4" deep. Use one of the following: bark, woodchips, shavings, sawdust, peat, or sand.

Chemical Weed Management

THIS CHART IS NOT A SUBSTITUTE FOR READING AND FOLLOWING THE LABEL. It is unlawful to use any pesticide for other than the registered use. Read and follow the label on the product container. The user assumes all responsibility for use inconsistent with the label. Trade names are used for identification. No product endorsement is implied, nor is discrimination intended against similar materials. Cooperative Extension makes no warranty or guarantee of any kind concerning the use of these products. Check with your processor regarding PHI restrictions or MRL restrictions for export sales. Please note: This revised version replaces any previous charts.

- Extremely toxic to fish
- Moderately toxic to fish
- Extremely toxic to bees
- Moderately toxic to bees
- Extremely toxic to birds
- Moderately toxic to birds
- Extremely toxic to people
- Moderately toxic to people

HERBICIDES WITH ENVIRONMENTAL PERSISTENCE¹

GROUP ²	USE & TOXICITY	HERBICIDE	ACTIVE INGREDIENT & SIGNAL	TIMING: CROP CYCLE & WEED EMERG. (PRE OR POST)	RATE: PER/ACRE & MAX/ACRE/YR	PHI DAYS	REI HOURS	NOTES
1	GRASSES	Arrow 2 EC Intensity One Tide USA Clethodim 2E and others	clethodim	WARNING PRUNE EARLY CROP	POST Broadcast*: 4 to 8 oz. Arrow & Clethodim 2E no NIS spot: 0.33 to 0.65 oz /1 gal-water. Arrow & Clethodim 2E NIS spot: Add 0.33 oz/1 gal-water NIS Intensity One no NIS spot: 0.44 to 0.85 oz/1 gal-water Arrow & Clethodim 2E (TideUSA) max: 32 oz (0.5 lb ai); 8 oz per app (at least 14 days apart), 4 apps per year. Intensity One max: 16 oz per app (at least 14 days apart), 4 apps, 64.0 fl oz/A (0.485 lb ai/A) per year	45	24	*Read label for rate, use higher rates for perennial grasses. Arrow & Clethodim: add 0.25% v/v NIS in 5 to 40 GPA water. Intensity One: add 0.25% v/v NIS, no COC (not listed in crop-specific table) in 5 to 40 GPA water. Apply as broadcast spray minimum 30 psi. (all) Spot Treatment: Treat until wet but do not allow runoff. Caution: Tank mixing with certain post-emergence broadleaf herbicides may reduce grass control. Do not use if rainfall expected in 1 hour. Human & Environment: Arrow 2 EC: High aspiration toxicity. Intensity One & Clethodim 2E: moderate eye toxicity. MP, S
		Selectmax	CAUTION	PRUNE EARLY CROP	POST Broadcast*: annual 9 to 16 oz, perennial 12 to 16 oz Spot**: 0.44 to 0.85 oz /1 gal-water. Max: 64 oz (0.485 lb ai); 16 oz per app (at least 14 days apart), 4 apps/yr.	45	24	*Add NIS 0.25% v/v in 5-40 GPA water. **Add NIS at 0.33 oz/gal water. Spot Treatment: Treat until wet but do not allow runoff. Caution: Do not apply when grass is stressed. Do not apply post-emergence broadleaf herbicides within 1 day of application. Do not use if rainfall expected in 1 hour. Human & Environment: High toxicity for aspiration, skin, mutagenicity and carcinogenicity. MP, S
		Fusilade DX	CAUTION	PRUNE CROP *POST-HARVEST*	POST Broadcast*: 8 to 24 oz Spot**: 0.75 oz./1 gal-water Max: 2 app of 24 oz/app (at least 14 days apart); Total 48 oz (0.75 lb ai)	305	12	*Add 0.25-0.5% v/v NIS in 5-40 GPA water. Application: Apply in the interspaces and around the base of plants while avoiding contact of spray with plants. Caution: Do not use if grass is drought-stressed or if rainfall is expected within one hour. Crop injury: Injury may occur if other herbicides are applied within 5 days, also reducing control efficacy. Human & Environment: High aspiration toxicity. MP, S
		Poast	WARNING	PRUNE EARLY CROP	POST Broadcast*: 1.0 to 2.5 pints Spot**: 1.3 oz (1.0%) or 1.9 oz (1.5%) in 1 gal water Max: 5 pints; 2 apps/yr; 2.5 pints/app (at least 14 days apart)	30	12	*Add 2 pints/acre COC in 5 to 20 gallons water per acre. Minimum 40 PSI. **Add 1.3 oz COC. Must add crop oil concentrate (COC) or surfactant. Caution: Do not apply when grass is drought stressed. Human & Environment: High aspiration toxicity. MP, S
2	BROADLEAF, GRASSES & SEDGES	Sandea (24c label expires 12/31/27)	halosulfuron-methyl	CAUTION PRUNE	PRE 0.5 oz to 1 oz per acre Max: 1 oz (0.047 lb a.i)/yr	14	12	Mixing Apply in minimum 15 gallons water per acre. Do not apply by rope-wick wiper. Applications: Should be made 1 to 2 months prior to breaking dormancy in the spring. Caution: Phytotoxicity may occur with overlapping boom swaths (overapplication). Do not apply when frost is present or where soil is saturated. Do not apply in areas where water ponds after significant rainfall. Do not apply to plants that have progressed into budbreak. Do not apply to plants under stress or less than one year of age. Human & Environment: LP, S
		Express Herbicide with TotalSol soluble granules (24c label expires 12/31/25)	tribenuron-methyl	CAUTION PRUNE CROP *POST-HARVEST*	POST 1 oz per acre Spot**: 1 oz/20 gal water Add NIS 0.25% v/v Max: 1 oz/acre/yr	365	12	*Add NIS at label rate. Spot Treatment: apply during summer of prune year. For special use on bunchberry. Field Conditions: Apply in the spring of a prune year or fall after harvesting and up until killing frost. Fertilizer applications before or after applying Express will help blueberry plants recover. Caution: Do not use COC or an MSO. Do not use in solutions below pH 6.0. Do not apply to drought-stressed plants. Prolonged cool temps (<50F) or wide fluctuations in day-night temps around time of treatment may cause temporary crop yellowing or stunting. Do not apply within 365 days of blueberry harvest. Human & Environment: Moderate toxicity for skin. MP, S
3	RESISTANT GRASSES	Kerb SC	propyzamide	CAUTION PRUNE OR CROP *POST-HARVEST*	PRE POST 2.5 to 5 pints per acre Max: 1 app/5 pt (2 lb ai)/yr	See notes	24	May only be applied in fall/winter of either year (before ground-freeze or snow). Rate depends on the weed species present (see label). Field Conditions: Most effective in soil with <4% OM and when temperature is <55°F. Activation: Rain/snowmelt is required to move into root zone. PHI: There is no specific PHI for lowbush listed. PHI ranges from 25 – 55 days. Human & Environment: moderate carcinogenicity. HP, S
5	GRASS & BROADLEAF	Velpar L CU Tide Hex. 2SL Velpar DF CU	hexazinone	DANGER PRUNE	PRE 4 to 12 pints, min 20 GPA Max: 8 pints if treated with hex. in past 8 yrs 1.2 to 3.6 lb, min 20 GPA Max: 2.4 lb if treated with hex. in past 8 yrs 3.3 to 10 pints, min 20 GPA Max: 6.6 pints if treated with hex. in past 8 yrs	450	48	Apply in spring of prune year pre-emergence; only apply once per year. May be impregnated on fertilizer. Field Conditions: Use lower rates on poorly drained soil and steep slopes. Use higher rates on heavier soil or soils high in organic matter. Activation: Moisture required within 2 weeks of treatment; high temps and humidity help. Caution: Maintain a 50-foot buffer from any well head or water reservoir and do not apply to frozen or flooded fields. Do not apply through an irrigation system. Avoid contact with blueberry plants. Human & Environment: Highly toxic to eyes. HP, S
		Sinbar WDG (2ee label for fertilizer)	terbacil	CAUTION PRUNE CROP *POST-HARVEST*	PRE 2 to 3 lb, min 20 GPA Max: 3 lb/yr	--	12	Apply preemergence in prune year or in crop year after harvest. Field Condition: Use higher rate on heavy soil or soils high in OM. May be impregnated on fertilizer (See 2ee label). Activation: Moisture required. Caution: Do not use on soil with <1 % organic matter, in sand or loamy sand with <3% OM, or where roots are exposed. Avoid contact with blueberry plants. Do not apply to drought-stressed plants. PHI: There is no specific PHI for lowbush listed, only PHI listed is for watermelon which is 70 days. Human & Environment: HP, S
		Direx 4L Diuron 4L	diuron	CAUTION PRUNE	PRE 1.6 qt per acre Max: --	NA	12	Apply in late spring of prune year preemergence. Activation: Moisture required within 2 weeks of treatment. Caution: Do not use on soils with <2% organic matter or on foliage or exposed roots. Do not use near fruit trees. Human & Environment: HP, S
9	RESISTANT GRASS & BROADLEAF	Multiple formulations	glyphosate	CAUTION PRUNE CROP	POST Wiper: Sponge 10% v/v herb, 20% woody; Rope/Wick-33% v/v. Directed spray: 2% v/v Max: 6 lb a.e. for all formulations (see label)	14	4	Use rate based on 41-49%, adjust accordingly. Add 1-2% w/v spray grade AMS to increase efficacy on woody weeds only. See labels for surfactant guidelines; do not use surfactant for wiper applications. Caution: Non-selective: will kill all actively growing plants. Avoid contact with blueberries. Human & Environment: LP, S
		Matrix SG Solida	rimsulfuron	CAUTION PRUNE POST	PRE POST 4 oz Max: 1 app of 4 oz/year For spray: use NIS 0.125-0.25% v/v or COC 1% v/v Matrix: most effective at spray tank solution pH of 5 to 7; max 1 broadcast/yr or 2 band apps/yr	21	4	Pre-emergence: Broadcast before bud break. Early post-emergence: Directed spray while avoiding contact with blueberry plants. Field Conditions: Do not use on soils with >6% OM. Solida: Rainfall or irrigation needed within 2 weeks of application to activate herbicide in the soil, most effective within 5 to 7 days. Caution: Post-emergence spray may result in temporary chlorosis or stunting. Do not use on frozen/snow covered soil, soils classified as sand. Human & Environment: LP, S
10		Rely 280 Liberty 280 SL	glufosinate	WARNING PRUNE	POST Broadcast: 48 oz/acre Spot: 1.7 oz in 1 gal water Max: 164 oz (3 lb ai)/yr; 2 app of 82 oz per app	14	12	Foliar-active only. Apply pre-blueberry emergence. Field Conditions: Apply on a warm, sunny humid day. Add to spray tank last; may require an antifoam agent. Do not apply to blueberry plants. Do not apply through irrigation system. Human & Environment: Highly toxic for skin and reproduction. LP, S
14		Zeus Prime XC	carfentrazone & sulfentrazone	CAUTION PRUNE	PRE 7.7 to 15.2 oz/acre, min 10 GPA Max: 1 app/15.2 oz (0.41 lb ai)/yr Maintain spray solution between pH 5-9.	3	12	Apply in prune year before blueberry emergence. Field Conditions: Availability decreases with finer soils and increases with higher pH; do not apply on sand with <1% OM. Activation: Ideally apply to moist soil with 1/2-1" rainfall/irrigation within 2 weeks of application. Caution: Do not tank mix with flumioxazin or other products containing sulfentrazone. Human & Environment: Moderate toxicity for liver; carcinogenic. MP, S
		Valor	flumioxazin	CAUTION PRUNE PRE POST	PRE POST 6 to 12 oz Max: 1 app of 12 oz/acre/yr	7	12	Activation: Moisture is necessary to activate in soil. Crop injury: Do not apply product to blueberry plants. Delayed emergence may occur with spring application. Human & Environment: Moderate reproductive toxicity. LP, NS
18	FERN	Asulox (supplemental label expires 12/31/24)	asulam	CAUTION PRUNE	POST Spot ONLY* Add NIS 0.25% v/v Max: 1 gal/acre every other yr	365	12	For special use on bracken fern in the prune year. Field Conditions: Ferns should be in full frond. Apply once every other year on prune-field only; control symptoms will not be visible until the following year. Human & Environment: High toxicity for skin and eyes. MP, S
27	ANNUAL BROADLEAF	Callisto (crop yr 24c label expires 12/31/27)	mesotrione	CAUTION PRUNE EARLY CROP*	PRE POST PRE POST 3-6 oz or 2 oz (24c label) Max: 2-3 app. of 2-3 oz (min 14 days apart) or 1.6oz app 4 oz. (24c label) Add NIS Max: 1 app/4 oz (0.19 lb ai) /yr	60	12	*Only Callisto has a 24c label allowing use in the crop year. Post-emergence Applications: Must be made before weeds reach 5" in height. To increase efficacy: Add COC (1% v/v). Add 8.5 lbs AMS/100-gal water. Crop Injury: May occur in dry conditions or over 85°F. See 24C label for revised prune year/crop year application. Human & Environment: avoid repeated exposure. MP, S
		Explorer; Mesotrione 4SC		PRUNE PRE POST	PRE POST 3 to 6 oz Max: 2 app. of 3 oz/yr (min 14 days apart) or 1 app of 6 oz/yr	NA	12	

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PLEASE NOTE: THIS REVISED VERSION REPLACES ANY PREVIOUS CHARTS.

¹ Environmental persistence rankings were estimated using a combination of soil and hydrologic persistence, PHI, and REI. LP = low persistence, MP = moderate persistence, HP = high persistence. S = systemic, NS = not systemic

² Group Number: To reduce the likelihood of herbicide resistance developing in growing season, growers should rotate between herbicides with different group numbers in the growing season, ideally using multiple group numbers. Products with the same group number should not be used in consecutive sprays.

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