

# Fruit Crops

**Strawberry: Table 1. Fallow bed herbicides.**

Active Ingredient and Rate	Formulated Product and Rate	Weeds Controlled	Remarks and Precautions
oxyfluorfen @ 0.25-0.50 lb/A	Goal 2XL @ 1-2 pt./A	Winter annual broadleaf weeds such as Carolina geranium and evening primrose.	Apply to fallow beds. May retreat on 30-day intervals up to planting. Apply to clean, smooth, established beds. Rainfall (0.25 inch) is necessary to activate chemical.

**Strawberry: Table 2. Preemergence herbicides.**

Active Ingredient and Rate	Formulated Product and Rate	Weeds Controlled	Remarks and Precautions
acifluorfen @ 0.125-0.375 lb/A	Ultra Blazer @ 0.5-1.5 pt/ A	Annual broadleaf weeds.	Crop row. Make one banded application before laying plastic mulch and after final land preparation, and prior to transplanting the crop. For best results, avoid soil disturbance during laying of plastic and planting of crop.
napropamide @ 4.0 lb/A	Devrinol 50DF @ 8.0 lb/A; Devrinol 2-XT @ 2 gal/A	Annual grasses, broadleaf weeds.	Apply after planting or to established beds before weeds emerge. Mechanically incorporate or irrigate into the soil to a depth of 1-2 inches within 24 hours of application. Do not apply from bloom through harvest. Do not exceed a maximum application rate of 8 lb per acre per crop cycle.
flumioxazin @ 0.1lb/A	Chateau WDG and SW @ 3 oz/A	Broadleaf weeds.	Apply to row middles with a hooded sprayer for preemergence control for broadleaf weeds before weeds emerge. Apply a minimum of 30 days before transplant and prior to plastic mulch being laid. Do not apply after fruit set. Do not allow spray or spray drift to come in contact with the fruit foliage. Crop spotting may occur if an adjuvant is added. Application after fruit set may result in spotting of fruit and should be avoided. Do not make more than one application per growing season.
pendimethalin @ 0.72-1.44 lb/A	Prowl H2O @ 1.5 -3.0 pt/A; Coarse soil 1.5 pt/A; Medium soils 2.0-2.5pt/A; Fine soils 2.5-3.0 pt/A	Broadleaf weeds, annual grasses.	Apply to row middles. Do not apply within 35 days of harvest. DO NOT apply more than 3.0 pt. per acre per application. DO NOT apply more than 6.0 pt per acre per season. Do not feed forage or graze livestock in treated fields. DO NOT apply if new growth has emerged.

**Strawberry: Table 3. Postemergence herbicides.**

Active Ingredient and Rate	Formulated Product and Rate	Weeds Controlled	Remarks and Precautions
sethoxydim @ 0.28-0.47 lb/A	Poast @ 1-1.5 pt/A; Apply with COC @ 2 pt/A; Pump up sprayer: .3-2 oz/gal Poast + 1.3 oz/gal COC	Perennial and annual grasses.	Sequential applications will be necessary for perennial grass control. The addition of a nonionic surfactant (1 qt/100 gal of water) or crop oil concentrate (1 gal/100 gal of water) is necessary for optimum results. Apply to actively growing grasses before they exceed labeled heights. Bearing and nonbearing. Use flat fan nozzle tips. Do not apply within seven days of harvest. Do not exceed 2.5 pt of Poast per year.
clethodim @ 0.1-0.125 lb/A	Select @ 6-8oz/A; Select Max @ 9-16 oz/A; Apply with COC @ 2 pt/A; Pump up sprayer: Select @ 0.33-0.66 oz/gal + 1.3 oz/gal COC; Pump up sprayer: Select Max @ 0.66-1.32 oz/gal + 1.3 oz/gal COC)	Annual and perennial grasses, annual bluegrass.	Use high rate and sequential applications for perennial grasses (bermudagrass or johnsongrass). The addition of a nonionic surfactant at 0.25 % v/v (1 qt/100 gal of spray solution) or crop oil concentrate at 1% v/v (1 gal per 100 gal of spray solution) is required for optimum results. Apply at postemergence to actively growing grasses. Do not apply under stressed conditions or if rainfall is expected within four days of harvest. Do not apply more than 8 oz/A in a single application of Select or no more than 16 oz/A of Select Max in a single application. For repeat applications make at a minimum of 14-day intervals.

**Strawberry: Table 4. Directed postemergence herbicides.**

Active Ingredient and Rate	Formulated Product and Rate	Weeds Controlled	Remarks and Precautions
paraquat @ 0.125 lb/A	Parazone 3 SL (1.3 pt/A); Gramoxone SL 2L (2 pt/A)	Nonselective weed control	Apply to row middles only. Contact kill of all green foliage. Do not allow drift or spray solution to contact crop or severe injury or crop death will occur. The addition of a nonionic surfactant at 0.25 % v/v (1 pt per 50 gal of spray solution) is required for optimum results. Apply in a minimum spray volume of 20 gal per acre. Do not make more than three applications per year
carfentrazone @ 0.008-0.025/A	Aim 2EC @ 2 oz/A; Apply with COC @ 1 gal/100 gal or NIS @ 2 pt/100 gal.	Broadleaf weeds	Apply post-directed using hooded sprayer for control of emerged weeds in row middles. If crop is contacted, burning of contacted area will occur. Most effective on weeds less than 4 inches tall or rosettes less than 3 inches across. Use a crop oil concentrate at up to 1 gallon per 100 gallons solution or a nonionic surfactant at 2 pints per 100 gallons of spray solution. Coverage is essential for good weed control. Does not control grass weeds. May be applied as a preplant burndown treatment and/or as a post-directed spray on row middles. May be tank-mixed with other registered herbicides.
paraquat @ 0.49 lb/A	Gramoxone SL 2.0 @ 32 pt/A; Apply with NIS @ 1 pt/100 gal; Pump up sprayer: 0.5 oz/gal Gramoxone + 0.5 oz/gal NIS.	Annual broadleaf and grasses; suppression of perennials in the interspaces and around base of bushes or vines	Contact kill of all green foliage. Do not allow drift or spray solution to contact crop or severe injury or crop death will occur. The addition of a nonionic surfactant at 0.25 % v/v (1 pt/50 gal of spray solution) is required for optimum results. Apply in a minimum of 20 gal water/A as a directed spray between rows. Use shields to avoid injury. Do not apply within 21 days of harvest. Do not apply more than three times per year. Do not allow spray to contact plants. Do not graze livestock in treated areas.

**Blackberry: Table 1. Preemergence herbicides.**

Active Ingredient and Rate	Formulated Product and Rate	Weeds Controlled	Remarks and Precautions
simazine @ 2-4 lb/A	Simazine 4L, Princep @ 2-4 qt/A; Simazine 90DF, Princep 90, Caliper @ 2.2-4.4 lb/A	Annual weeds and grasses.	Tank mix with paraquat for postemergence weed control. The addition of oryzalin (Surflan) or norflurazon (Solicam) with simazine will extend residual grass control several weeks. Rate is soil-texture dependent. DO NOT apply after fruit set. Apply as preemergence spring application or as split applications once in spring and once in fall. On plants less than 6 months old, use one-half rate. Do not apply when fruit is present or illegal residues may result. Do not contact fruit, foliage or stems. Use minimum of 40 gallons of water per acre.
oryzalin @ 2-6 lb/A	Surflan 4 A.S. @ 2.0-6.0 qt/A; Oryzalin 4 A.S. @2.0-6.0 qt/A	Annual grasses, certain annual broadleaf weeds.	Oryzalin may be tank mixed with paraquat for postemergence weed control. In established plantings tank-mix with simazine for broad spectrum residual weed control. Total use rate cannot exceed 12 qts/A per year. Oryzalin may be applied sequentially so long as there is two and a half months between applications. Apply before annual weeds emerge. Can be applied to new plantings after soil has settled and no cracks are present. Use low rate for short-term control (two to four months); high rate for long-term control (six to eight months). Apply in strip in plant rows; do not apply to row middles or drive rows.
norflurazon @ 2.0–4 lb/A	Solicam 80 DF @ 2.5-5.0 lb./A; 2.5 lbs/ A for coarse soils; 3.75 lbs/A for medium soils; 5.0 lbs/ A for fine soils	Annual grasses, broadleaf weeds.	Apply to dormant blackberry and raspberry. Tank-mix with paraquat for control of emerged weeds. Residual control is expanded when Solicam is tank-mixed with simazine. Apply prior to weed seed germination and rainfall or irrigation is likely within four weeks of application. Apply post-harvest in the fall or early spring. Delay application to newly established vines until 18 months after planting if west of the Mississippi River and six months if east of the river. The soil should be settled, firm and relatively free of weeds and debris at the time of application. Do not apply within 60 days of harvest. Use the low rate on coarse-textured soils, high rate on fine-textured soils. Make one application per year. Solicam may result in temporary bleaching or chlorosis of the leaves from which the plant will recover. DO NOT graze treated areas.
napropamide @ 8.0 lb/A	Devrinol 50DF @ 8.0 lb/A	Annual grasses and broadleaf weeds.	Apply to a weed-free soil surface. May be applied to newly planted or to established crop. Do not exceed a maximum application rate of 8 lb. per acre per crop cycle. Rainfall or overhead irrigation within one to two days of application is needed for activation.

**Blackberry: Table 2. Postemergence herbicides.**

Active Ingredient and Rate	Formulated Product and Rate	Weeds Controlled	Remarks and Precautions
fluazifop @ 0.25-0.37 lb/A	Fusilade DX @ 12-24 fl oz/A; Add COC or NIS; see label.	Perennial and annual grasses.	Apply at postemergence to NONBEARING plants that will not be harvested within one year. DO NOT contact foliage. Perennial grasses may require sequential applications for adequate control. Does not control nutsedge. Fusilade DX herbicide is rainfast one hour after application. Add a nonionic surfactant (1 qt/100 gal of water) or crop oil concentrate (1 gal/100 gal of water). Do not apply more than a total of 48 oz/A per year. Do not apply more than 24 oz/A per application. Do not apply more than two applications per year. Maintain minimum of 14 days between applications. Do not harvest within one day of last application.
sethoxydim @ 0.3-0.5 lb/A	Poast @ 1-2.5 pt/A; Add COC or NIS; see label.	Perennial and annual grasses.	Sequential applications will be necessary for perennial grass control. The addition of a nonionic surfactant (1 qt/100 gal of water) or crop oil concentrate (1 gal/100 gal of water) is necessary. Do not apply within 50 days of harvest. Total use cannot exceed 5 pt/A per year. Apply at postemergence. Do not allow livestock to graze treated field. Do not feed livestock anything from treated field.
clethodim @ 0.07-0.12 lb/A	Select Max @ 12-16 fl oz/A; Select 2 EC @ 6-8 oz/A; Add COC or NIS; see label.	Annual and perennial grass weeds.	Low rates are for annual grass weeds. High rates and sequential applications are for perennial grasses (bermudagrass or johnsongrass). The addition of a nonionic surfactant at 0.25 % v/v (1 qt/100 gal of spray solution) is required. The <b>Select Max formulation</b> is labeled for bearing canberries and can be applied up to within seven <b>days of harvest</b> . <b>All other clethodim formulations can only be used on non-bearing canberries.</b> Apply as a directed spray to the base of the canes. The PHI for Select Max is seven days.

**Blackberry: Table 3. Directed postemergence herbicides.**

Active Ingredient and Rate	Formulated Product and Rate	Weeds Controlled	Remarks and Precautions
paraquat @ 0.5-1.0 lb/A	Firestorm 3SL @ 1.3-2.7 pt/A; Apply with approved adjuvant; see label.	Annual weeds and grasses; top kill and suppression of perennials in the interspaces and around base of bushes or vines.	Do not allow herbicide to contact desirable foliage or green canes. Young plants must be shielded. The addition of a nonionic surfactant at 0.25% v/v (1 qt per 100 gal of spray solution) is necessary for adequate control. Tank-mix with pre-emergence herbicides for residual control. DO NOT make more than five applications per year. Apply before emergence of new canes or shoots. Do not allow spray to contact green bark of canes or foliage. Apply in 50 gallons of water. Maximum number of applications per year is five.
carfentrazone @ up to 0.1 lb/A	Aim 2EC @ 0.8-2 oz/A; 6.4 oz/A for primocane suppression; Apply with COC @ 1 gal/100 gal or NIS @ 2 pt/100 gal.	Post-directed application for control of primocanes and broadleaf weeds.	Aim may be tank-mixed with other herbicides registered in caneberries. Do not allow spray solution to contact desirable vegetation, flowers/bloom, or fruit. Every precaution should be taken to avoid herbicide injury related to herbicide drift. Use rate should not exceed 25 oz/A per year and there must be at least a 14-day interval between applications. The addition of a nonionic surfactant at 0.25% v/v (1 qt/100 gal of spray solution) or crop oil concentrate at 1% to 2% v/v (1-2 gal/100 gal of spray solution) is necessary for optimum herbicide performance. May be applied to the bottom 18 inches of the canes and also to contact the soil out to 24 inches on each side of the plant row as a post-directed spray at intervals of 14-21 days. Apply when primocanes are 6 inches high using the maximum rate in a minimum of 20 gal. of water. Most sensitive annual weeds can be controlled using a 1-2-oz rate. Aim has a 15-day PHI.

**Blueberry: Table 1. Preemergence herbicides.**

Active Ingredient and Rate	Formulated Product and Rate	Weeds Controlled	Remarks and Precautions
simazine @ 2-4 lb/A	Simazine 4L, Princep @ 2-4 qt/A; Simazine 90DF, Princep 90, Caliper @ 2.2-4.4 lb/A	Annual weeds and grasses.	Tank-mix with glyphosate or Reckon for postemergence weed control. The addition of oryzalin or norflurazon with simazine will extend residual grass control several weeks. Rate is soil texture dependent. Do not apply when fruit is present. <b>Do not apply to blueberry planted less than six months in bark production system.</b> Make single application in spring before bud break and before weed emergence or split applications once in spring and once in fall. Do not apply when fruit is present.
norflurazon @ 2.0-3.9 lb/A	Solicam 80 WDG @ 2.5-5.0 lb/A	Annual grasses, broadleaf weeds.	Apply as a directed spray from fall to early spring when the crop is dormant and before weeds emerge. Application of Solicam may result in temporary bleaching or chlorosis of the leaves. Tank mix with paraquat or glufosinate to control emerged weeds. Tank mix with simazine or diuron for expanded residual control. <b>Preharvest interval is 60 days.</b>
oryzalin @ 2-6 lb/A	Surflan 4 AS or oryzalin 4AS @ 2-6 qt/A; Surflan 85 DF @ 2.4-7.1 lb/A	Annual grasses, small seeded broadleaf weeds.	Controls annual grasses and small seeded annual broadleaf weeds. Use low rate for short-term control (one to two months); high rate for long-term control (two to three months). DO NOT apply to newly established plantings until the soil has settled and no cracks are present. Apply before annual weeds emerge or add Gramoxone or glyphosate for control of emerged weeds. Benefits highly from a tank mix partner like Simazine or Trellis.
flumioxazin @ 0.188-0.38 lb/A	Chateau SW @ 6-12 oz/A	Broadleaf and grass weeds.	May be applied in season. Preharvest interval is seven days. Do not apply to blueberries established less than 2 years unless they are protected from spray contact by non-porous wrap, grow tubes or waxed containers. Do not apply more than 12 oz per acre during a 12-month period. Do not make a sequential application within 30 days of the first application. Do not apply more than 6 oz per acre per application to bushes less than 3 years old on soils having a sand plus gravel content greater than 80%. Apply at the base of the bush. Residual weed control will be reduced if emerged vegetation prevents Chateau from reaching the soil surface. Do not allow spray or spray drift to come in contact with the fruit foliage. Crop spotting may occur if an adjuvant is added. Application after fruit set may result in spotting of fruit and should be avoided. Allow 60 days between applications.
napropamide @ 4.0 lb/A	Devrinol 50DF @ 8.0 lb/A; Devrinol 2 XT @ 2 gal/A	Annual grasses, broadleaf weeds.	Soil surface should be relatively free of weeds and plant residue. Rainfall or overhead irrigation within one to two days (summer) and seven days (fall or spring) of application is needed for activation. May be applied to newly planted or to established crop. Do not exceed a maximum application rate of 8 lb per acre per crop cycle. PHI 60 days.
pronamide @1.0-2.0 lb/A	Kerb 50W 2-4 lb/A	Preemergence control of certain annual and perennial broadleaf and grass weeds.	Apply as a directed spray in established blueberries only for early postemergence control of susceptible winter annual weeds, perennial grasses and chickweed and for preemergence control of these and other weeds. Optimal activity occurs under cool temperature conditions and followed by rainfall or overhead irrigation. Do not exceed maximum rate listed per year. Apply only in late fall or winter

**Blueberry: Table 2. Postemergence herbicides.**

Active Ingredient and Rate	Formulated Product and Rate	Weeds Controlled	Remarks and Precautions
fluzifop @ 0.25-0.37 lb/A	Fusilade DX 2 EC @ 24 fl oz/A	Perennial and annual grasses.	Sequential applications will be necessary for perennial grass control. The addition of a nonionic surfactant (0.25% v/v, 1 qt/100 gal of water) or crop oil concentrate (1 gal/100 gal of water) is necessary. Minimum of 14 days between applications. Do not apply within one year of harvest. Do not apply over the top or crop injury can occur. Apply at postemergence. Apply to NONBEARING bushes only that will not be harvested within one year. Direct spray. DO NOT contact foliage. Broadleaf weeds and nutsedge will not be controlled.
sethoxydim @ 0.28-0.47 lb/A	Poast 1.5 EC @ 1-2.5 pt/A	Perennial and annual grasses.	Sequential applications will be necessary for perennial grass control. The addition of a nonionic surfactant (1 qt/100 gal of water) or crop oil concentrate (1 gal/100 gal of water) is necessary for optimum results. PHI of 30 days for lowbush blueberries and PHI of one day for highbush blueberries. Total use rate per season cannot exceed 5 pt/A. Do not make more than two applications per season and allow a minimum of 14 days between applications. Apply at postemergence. Apply to bearing or nonbearing bushes. Direct spray. Use flat nozzle tips. Broadleaf weeds and nutsedge will not be controlled. Do not allow livestock to graze treated field. Do not feed livestock anything from treated field.
clethodim @ 0.07-0.12 lb/A	Select Max @ 9-16 fl oz/A	Annual and perennial grasses.	Low rates are for annual grass weeds. High rates and sequential applications are for perennial grasses (bermudagrass or johnsongrass). Do not apply within one year of harvest. The addition of a nonionic surfactant at 0.25 % v/v (1 qt/100 gal of spray solution) is required. Best results occur when applications are made to actively growing grasses. <b>The Select Max formulation is registered for application in bearing blueberry and has a 14-day PHI. All other clethodim formulations are registered for application in non-bearing blueberry only.</b> Apply before grasses exceed height limitations.

**Blueberry: Table 3. Directed postemergence herbicides.**

Active Ingredient and Rate	Formulated Product and Rate	Weeds Controlled	Remarks and Precautions
paraquat @ 0.5 – 1.0 lb./A	Gramoxone 2 SL @ 2–4 pt./A; Firestorm 2 SL @ 2-4 pt./A; Paraquat 2 SL @ 2-4 pt./A; Parazone 3 SL @ 1.3-2.7 pt./A	Annual broadleaf weeds and grasses; top kill and suppression of perennials in the interspaces around base of bushes or vines	Do not allow herbicide to contact desirable foliage or uncalledus bark. Young plants must be shielded. The addition of a nonionic surfactant at 0.25% v/v (1qt per 100 gal. of spray solution) is necessary for adequate control. Tank-mix with preemergence herbicides for residual control. <b>Use of paraquat in rabbiteye blueberry can increase incidence of stem blight if herbicide contacts green stems. Rabbiteye producers should consider other nonselective postemergence options.</b> Apply as a directed spray before emergence of new canes or shoots. Apply in water at 50 GPA. Maximum number of applications per year is five.



**Citrus: Table 1. Preemergence herbicides.**

Active Ingredient and Rate	Formulated Product and Rate	Weeds Controlled	Remarks and Precautions
bromacil @ 1.6-4.8 lb/A + diuron @ 1.6-4.8 lb/A	Krovar I DF @ 2-6 lb/A; Trees 3 years old and older: 2-4 lb/A on light soil; 4-6 lb/A on heavy soil. Make two applications (spring and summer) to control perennial weeds: 2 lb/A on coarse soils; 3 lb/A on fine soils. Use 2-4 lb/A on trees 1-3 years old	Most annual weeds and perennials such as johnsongrass and bermudagrass. Contact activity enhanced by surfactant.	Apply at late winter/early spring, shortly before weeds emerge. Spray on bare ground. Apply with a properly calibrated fixed boom power sprayer as a band or broadcast treatment beneath and/or between trees. Use a minimum of 30 gal/A. Avoid overlapping, and shut off spray boom while starting, turning, slowing or stopping or injury to trees may result. Continuous agitation in the spray tank is required to keep the material in suspension. Best results are obtained if treatment is made to moist soil, or moisture is supplied within two weeks after application. Use higher rates for maximum suppression of perennials. NOTE: Avoid contact with fruit and foliage. Temporary yellowing of citrus leaves may occur following treatment. Because injury to citrus trees may result, do not use on soils low in organic matter (less than 1%), poorly drained soils, gravelly soils or thinly covered or exposed subsoils. Do not treat diseased trees such as those with root rot. Do not use in citrus groves interplanted with other trees or desirable plants or in-home citrus plantings or in areas where roots of valuable plants or trees may grow into the treated soil.
bromacil @ 1.6-4.6 lb/A	Hyvar X @ 4-5 lb/A on light soils; 5-6 lb/A on medium soils; 6-8 lb/A on heavy soils. Rates are for trees established four or more years. If two applications (spring and summer) apply at least 60 days apart at 3-4 lb/A. Use 2/3 lb/A on trees established one to three years.	Annual grasses, broadleaf weeds, perennial weeds and sedges.	<b>Apply on grapefruit, kumquat, lemon, lime, orange, tangelo, tangerine or satsuma</b> as a single preemergence treatment in late winter/early spring. Apply just before weed growth to bare ground. Two applications required to control perennial weeds. Hyvar is toxic to many trees and plants. Consult label before use. Apply with a properly calibrated fixed-boom sprayer as a band treatment beneath the trees. Use a minimum of 30 gal/A to obtain uniform coverage. Continuous agitation in the spray tank is required to keep the material in suspension. NOTE: Avoid contact with fruit and foliage. Temporary yellowing of citrus leaves may occur following treatment. Because injury to citrus trees may result, do not use on soils low in organic matter (less than 1%), poorly drained soils, gravelly soils or thinly covered or exposed subsoils. Do not treat diseased trees.

Active Ingredient and Rate	Formulated Product and Rate	Weeds Controlled	Remarks and Precautions
norflurazon @ 2.0–3.9 lb/A	Solicam DF @ 2.5-5.0 lb/A; Do not exceed 10 lbs per year.	Annual grasses and broadleaf weeds; suppression of established nutsedge and perennial grasses.	Controls annual and perennial grasses and certain broadleaf weeds. Spectrum of broadleaf weeds controlled increased by tank-mixing with simazine or diuron. Suppresses established nutsedge and perennial grasses; control requires repeat applications. Dense weed growth should be controlled with contact or systemic herbicides prior to Solicam application to allow maximum contact with the soil surface. Tank-mixes with postemergence contact or systemic herbicides may be used where weed growth is low growing and sparse. Solicam activity is highly dependent on good soil moisture following application, i.e., rainfall or irrigation. If no rainfall occurs within four weeks after application, the product must be incorporated by flood or sprinkler irrigation. Contact with tree canopy can result in a bleached appearance and some distortion of young growth flushes. Apply as a directed spray to the soil. Avoid contact with fruit or foliage. The soil should be settled, firm and relatively free of weeds and debris at the time of application. Soil should be free of depressions around trees where rain or irrigation water can concentrate. Solicam DF must be moved into the weed seed germination zone to be effective. PHI is 30 days.
pendimethalin	Prowl H <sub>2</sub> O @ 2.0 to 6.3qt/A; Prowl 3.3 EC @ 2.4 qts/A to 7.2 qt/A	Annual grasses, certain broadleaf weeds. <b>No post activity</b> ; destroy existing weeds before or during application. May be used in combination with a herbicide registered for use in the specific nonbearing crop to remove existing vegetation.	<b>Nonbearing and newly transplanted trees; Preplant incorporated.</b> Incorporate to a depth of 1-2 inches. Application and incorporation must be made prior to transplanting to avoid mechanical injury to the crop. Avoid root contact with treated soil when placing transplants into the hole or injury may occur. May be applied either in a single application or sequentially with an interval of 30 days or more. <b>Preemergence after planting.</b> Apply the spray in a band directly to the ground under trees. Do not apply to newly transplanted trees or vines until ground has settled and no cracks are present. <b>Preplant surface, prior to transplanting.</b> Uniformly apply in a band or broadcast before planting. Avoid root contact with treated soil when placing transplants into the hole or injury may occur. <b>Citrus-bearing trees.</b> Apply Prowl H <sub>2</sub> O as a broadcast or banded treatment using ground equipment before weed emergence. Apply the spray directly to the ground beneath the trees and/or in areas between rows. Prowl H <sub>2</sub> O may be applied either in a single application or sequentially with an interval of 30 days or more. Apply Prowl H <sub>2</sub> O at between 2.0-6.3 qt per acre depending on the grower's weed control program, level of weed infestation and desired use strategy. Do not to exceed a total of 6.3 qt/A per year in citrus. <b>DO NOT</b> apply within one day of harvest of citrus fruit. Spectrum of broadleaf weeds controlled can be increased by tank-mixing with other preemergence chemicals. Tank-mixes with postemergence herbicides should be used to control existing weeds. Controls annual grasses. Does not control sedges. Spectrum of broadleaf weeds controlled is increased by tank-mixing with diuron. PHI is one day. <b>DO NOT apply more than 6.3 qt. of Prowl H<sub>2</sub>O per acre per year in citrus. DO NOT apply more than 7.2 qt. of Prowl 3.3 EC per acre per year in citrus. Do not apply to newly seeded nursery stock.</b>

Active Ingredient and Rate	Formulated Product and Rate	Weeds Controlled	Remarks and Precautions
oxyfluorfen @ 1.5 lb/A	Galigan 2E, Goal 2 XL @ 6 pt/A; Apply with NIS @ 2 pt/100 gal	Broadleaf weeds.	<b>Apply on grapefruit, kumquat, lemon, lime, orange, tangelo, tangerine or satsuma</b> only after foliage has fully hardened off. Only apply to nonbearing trees: do not apply during periods of new foliage growth. Use a low-pressure sprayer and direct at base of plant. Avoid spray contact on foliage. Use 40 gal water/A for PRE applications and 40-100 gal for POST applications. Do not apply more than 16 pt Goal in one year. Check label for approved tank-mixes with other herbicides.
oryzalin @ 2-6 lb/A	Surflan A.S., Oryzalin 4 A.S. @ 2-6 qts/A	Annual grasses, certain annual broadleaf weeds.	Apply in spring to non-bearing trees. <b>DO NOT</b> apply to newly established trees until soil is settled. Existing weed growth should be destroyed by shallow tillage or other treatment. Irrigation needed (1 1/2 inches) within 21 days to move Surflan into weed germination zone. Controls annual grasses and certain broadleaf weeds. Does not control perennial grasses or sedges. Spectrum of broadleaf weeds controlled is increased by tank-mixing with simazine, diuron, or Krovar I. Will not control weeds that have germinated prior to application. Tank-mixes with postemergence herbicides such as paraquat or glyphosate should be used to control existing weeds. Oryzalin will extend residual control of susceptible weeds when used in tank-mixes with other products.
rimsulfuron @ 0.0625	Matrix SG @ 4 oz/A	Broadleaf, grass, and nutsedge weeds.	Trees must be established for one year before application. Avoid direct or indirect spray contact with crop foliage or fruit. Do not use MATRIX SG in a spray solution with a pH of below 4.0 or above 8.0 to avoid degradation of the herbicide. Best results are obtained when the soil is moist at the time of application, and 1/2 inch of rainfall or sprinkler irrigation occurs within two weeks after application. Do not apply more than 4 oz. per acre per year. <b>The PHI is three days.</b>

**Citrus: Table 2. Postemergence herbicides.**

Active Ingredient and Rate	Formulated Product and Rate	Weeds Controlled	Remarks and Precautions
paraquat @ 0.64-1.0 lb/A	Gramoxone SL @ 2.5-4 pt/A; Apply with NIS @ 1-2 pt/100gal or COC @ 1 gal/100 gal; Pump up sprayer: 0.5-1 oz/gal. Gramoxone + 0.33 0.66 oz NIS/gal	Annual grasses and broadleaf weeds and grasses; top kill and suppression of perennials.	Apply to emerged weeds when they are small (1-6 inches tall). Apply in 30 gal water. Do not allow spray to contact green stems, fruit or foliage because injury may result. Do not spray under windy conditions. Use a shield for young trees. Do not allow animals to graze treated areas. Do not apply this product through any type of irrigation system. Check label for tank-mixes with other herbicides. Maximum number of applications per year is five. Controls all green weed tissue contacted. Rapid regrowth can be expected from perennial species. Addition of a surfactant is essential for maximum contact activity.
carfentrazone @ 0.008-0.025/A	Aim 2EC @ 0.5-2.0 oz/A; Apply with COC @ 1 gal/100 gal or NIS @ 2 pt/100 gal	Broadleaf weeds, bristly mallow.	<b>Apply on grapefruit, kumquat, lemon, lime, orange, tangelo, tangerine or satsuma</b> to control broadleaves between rows. Apply to actively growing weeds up to 4 inches tall and rosettes less than 3 inches across. Does not control grasses. Apply with hooded sprayer to protect crop. Extreme caution must be used during applications when desirable fruit and/or foliage are present in order to avoid fruit spotting and/or leaf necrosis. Do not allow spray mist of Aim EC to come in contact with green stem tissue, foliage, blooms or fruit. On seedling or newly transplanted trees do not allow spray to contact green bark of trunk area. Coverage is essential for satisfactory performance. Can be tank-mixed with other registered herbicides. Do not apply more than 7.9 oz/A/season. PHI is three days. An adjuvant is required such as a nonionic surfactant or crop oil concentrate.
sethoxydim @ 0.28-0.47/A	Poast 1.5 EC @ 1.5-2.5 pt/A; Apply with COC @ 2 pt/A; Pump up sprayer: 1.3 oz/gal Poast + 1.3 oz/gal COC	Annual and perennial grasses.	<b>Apply postemergence on grapefruit, kumquat, lemon, lime, orange, tangelo, tangerine or satsuma.</b> Check label for maximum weed height and rates. Spray near bearing and nonbearing trees. PHI is 15 days. Apply in 10-20 gal. water per acre with 40-60 psi. Direct away from foliage and fruit. A slight leaf speckling or burn can occur. Controls annual and perennial grasses such as bermudagrass, guineagrass, and torpedograss. <b>Does not control broadleaf weeds.</b> Repeat applications (at three to four week intervals) may be required for control of more troublesome species.

Active Ingredient and Rate	Formulated Product and Rate	Weeds Controlled	Remarks and Precautions
glyphosate @ 0.5-5 lb/A	4L formulations: @ 1-3 pt/A on annual weeds; 4-10 pt/A on perennial weeds; 5.5L formulations: 0.75-2 pt/A on annual weeds; 3-7 pt/A on perennial weeds	Most emerged annual and perennial grass and broadleaf weeds.	<b>In grapefruit, kumquat, lemon, lime, orange, tangelo, tangerine or satsuma</b> apply to actively growing weeds at the recommended growth stage for each species. Recommended for established groves (See label instructions). Provides top kill plus destruction of roots, rhizomes, etc. Not a residual herbicide. Follow with a label-approved program for effective annual and perennial season-long weed control. Spray may come in contact with brown bark area of trunk without injury. Do not spray green bark. Do not allow spray to contact foliage of tree. Avoid contact with root suckers or water sprouts growing at base of tree. Do not mow or till prior to treatment.
fluazifop @ 0.094-0.375 lb/A	Fusilade DX @ 12-24 oz/A; Adjuvant required; see label	Perennial and annual grasses.	Apply at postemergence to bearing and nonbearing <b>calamondin, citrus hybrids, grapefruit, kumquat, lemon, lime, mandarin (tangerine), orange (all), pummelo and satsuma</b> trees. Use flat fan nozzle; do not contact foliage. Maintain a minimum of 21 days between applications. Do not harvest citrus fruit within 14 days of last application. Controls annual grasses and perennials such as bermudagrass, guineagrass and torpedograss. Does not control broadleaf weed species. Repeat applications (at three- to four-week intervals) will be required for guineagrass and torpedograss. Guineagrass should be treated when 6-12 inches tall. Do not apply Fusilade to grasses under stressed conditions. Visible effects of herbicide activity on most grasses will be apparent in two to three weeks. If used according to label directions, Fusilade will not injure citrus. For spot treatment, use 1% v/v solution Fusilade with 1% crop oil concentrate or 0.25% nonionic surfactant in 30-40 gal per acre.

**Grape (Muscadine and Bunch): Table 1. Preemergence herbicides.**

Active Ingredient and Rate	Formulated Product and Rate	Weeds Controlled	Remarks and Precautions
simazine @ 2-4 lb/A	Princep Caliper 90, Simazine 90 DF @ 2.2-4.4 lb/A; Princep 4L, Simazine 4L @ 1.6-4 qts/A	Annual grasses, certain broadleaves.	Use only under vines established for three years. Apply in fall or spring. If applied in the fall, follow with a different preemergence herbicide in spring. DO NOT use on sandy, sandy loam or gravelly soils. Tank-mix with glyphosate, paraquat or glufosinate for postemergence weed control. The addition of oryzalin (Surflan) or norflurazon (Solicam) or pendimethalin (Prowl H <sub>2</sub> O) with simazine will extend residual grass control several weeks.
oryzalin @ 2-6 lb/A	Surflan 4 A.S., Oryzalin 4 A.S. @ 2-6 qts/A	Annual grasses, certain annual broadleaf weeds.	Apply in spring to bearing vines. DO NOT apply to newly established vines until soil is settled. Existing weed growth should be destroyed by shallow tillage or other treatment. Irrigation needed (1 1/2 inches) within 21 days to move Surflan into weed germination zone. Oryzalin may be tank-mixed with paraquat, glyphosate, or Rely for postemergence weed control. In established vineyards tank-mix with simazine for expanded residual control of annual weeds.
norflurazon @ 2.0–3.9 lb/A	Solicam 80 DF @ 1.25-5.0 lb/A	Annual grasses, broadleaf weeds; suppression of established nutsedge and perennial grasses.	Apply as a directed spray to the soil. Avoid contact with fruit or foliage. Soil should be settled, firm and relatively free of weeds and debris at the time of application. Solicam DF will not control emerged weeds. Tank-mix with glyphosate, paraquat or glufosinate for control of emerged weeds. Residual control is expanded when Solicam is tank-mixed with simazine or Karmex. Soil should be free of depressions around trees where rain or irrigation water can concentrate. Solicam DF must be moved into the weed seed germination zone to be effective. If no rainfall occurs within four weeks after application, the product must be incorporated by flood or sprinkler irrigation. Apply in fall or winter to vineyards having sandy loam or coarser textured soils. PHI is 60 days.
flumioxazin @ 0.188-0.38 lb/A	Chateau 51WDG @ 6-12 oz/A; Tuscany 51 WDG @ 6-12 oz/A; Tuscany SC @ 6-12 fl oz/A	Broadleaf and grass weeds.	Apply with hooded or shielded application equipment. Grapes established less than two years must be shielded with grow tubes. <b>Chateau may only be used in table grapes after completing harvest and before bud break. Chateau may be applied in vineyards producing grapes used for wine or juice after bud break so long as hooded application equipment is used. DO NOT tank-mix with glyphosate after bud break.</b> DO NOT apply more than 6 oz per acre to vines established less than three years planted on soils having a sand plus gravel content that exceeds 80%. Do not allow spray or spray drift to come in contact with the tree foliage. Do not make a sequential application within 60 days of the first application or apply less than 60 days before harvest. Moisture is necessary to activate herbicide on soil. Chateau and Tuscany have a 60-day PHI.
pendimethalin @ 3.04-5.99 lb/A	Prowl H <sub>2</sub> O @ 2-6 qt/A	Broadleaf weeds, annual grasses.	In newly planted vineyards Prowl may only be applied once soil has settled after transplanting but prior to bud swell. In established vineyards Prowl may be used any time after harvest, through winter, and in the spring. Use rate cannot exceed 6 qt per acre per year. Prowl has a 90-day PHI. Prowl should be tank-mixed with paraquat, glyphosate or glufosinate for postemergence weed control. Do not feed forage or graze livestock in treated vineyards. Prowl H <sub>2</sub> O may be applied as a single application or sequentially with a 30-day interval between applications. DO NOT apply more than 6.3 qt per acre per season.

**Grape (Muscadine and Bunch): Table 2. Postemergence herbicides.**

Active Ingredient and Rate	Formulated Product and Rate	Weeds Controlled	Remarks and Precautions
fluzafop @ 0.25-0.375 lb/A	Fusilade DX @ 12-24 oz/A; Adjuvant required; see label	Perennial and annual grasses.	Sequential applications will be necessary for perennial grass (bermudagrass, etc.) control. The addition of a nonionic surfactant (1 qt/100 gal of spray solution) or crop oil concentrate (1 gal/100 gal of spray solution) is necessary for optimum results. Do not apply within one year of harvest. Apply at postemergence to bearing and nonbearing vines. Use flat fan nozzle and do not contact foliage. Maintain a minimum of 14 days between applications. Do not apply more than 72 fl oz of Fusilade DX per acre per season to grapes. Do not harvest grapes within 50 days of last application.
sethoxydim @ 0.3-0.5 lb/A	Poast @ 1.5-2.5 pt/A; Always use nonphytotoxic oil concentrate.	Annual grasses, some perennial grasses.	Sequential applications will be necessary for perennial grass (bermudagrass, etc.) control. The addition of a nonionic surfactant (1 qt./100 gal of spray solution) or crop oil concentrate (1 gal/100 gal of spray solution) is necessary for optimum results. PHI is 50 days. Total use cannot exceed 5 pt/A per year. Apply at postemergence to bearing and nonbearing vines. Use flat fan nozzle tips. Use low rate on annual grasses up to 6 inches tall; high rate on annual grasses up to 12 inches tall.

**Grape (Muscadine and Bunch): Table 3. Directed postemergence herbicides.**

Active Ingredient and Rate	Formulated Product and Rate	Weeds Controlled	Remarks and Precautions
paraquat @ 0.64-1.0 lb/A	Gramoxone SL @ 2.5-4 pt/A; Firestorm, Parazone, or Paraquat Concentrate 3 SL @ 1.7-2.7 pt/A. Add NIS @ 0.25% v/v.	Annual grasses, broadleaf weeds; top kill and suppression of perennials in the interspaces and around base of bushes or vines.	Do not allow herbicide to contact desirable foliage or immature, uncalled bark. Young vines must be shielded. Apply in a minimum spray volume of 20 gal/A with nonionic surfactant at 0.25% v/v (1 qt per 100 gal. of spray solution). Apply when grasses are succulent and new growth is from 1-6 inches high. Apply as directed spray in 30 gal water. For mature, woody weeds, late germinating weeds and perennials, retreatment or spot treatment may be necessary. Do not spray under windy conditions. Do not allow animals to graze on treated areas.
glyphosate @ 1-5 lb/A	Glyphos, Honcho, Glyphyogan and various generic 4 lb/gal formulations @ 1-5 qts/A. Various Roundup formulations. See label for rates.	Annual and perennial weeds.	DO NOT allow spray solution to contact green bark, foliage or suckers. Tank-mix with preemergence herbicides for residual control. Do not apply within 14 days of harvest. Generic formulations may require the addition of a surfactant. Refer to label for application directions for hard to control perennial species. Apply at postemergence. Use lower rates for easier-to-control annual easier-to-control weeds and higher rates on harder to control weeds. Wiper applicator: 33% solution can be used.
glufosinate-ammonium @ 0.88-1.5 lb/A	Cheetah Lifeline, Reckon 280, or Rely 280 @ 48-82 oz/A	Postemergent control of grass and broadleaf weeds, both annual and perennial.	Do not allow herbicide to contact desirable foliage or immature, uncalled bark. Apply in a minimum spray volume of 20 gal/A. Do not apply within 14 days of harvest. Lower rates may be used to control weeds less than 3 inches tall. Higher rate is needed for larger weeds 3-6-inches tall. Do not make more than three applications per year. Do not graze, harvest and/or feed treated vineyard cover crops to livestock.

**Mayhaw: Table 1. Preemergence herbicides.**

Active Ingredient and Rate	Formulated Product and Rate	Weeds Controlled	Remarks and Precautions
oxyfluorfen @ 1.25-2.0 lb/A	Goal 2XL, Galigan @ 5-6 pt/A; GoalTender @ 2.5-4 pt/A	Preemergence control of broadleaf and some grass weeds; provides burndown of young, emerged weeds.	<b>Dormant season application only.</b> Apply prior to bud swell or after trees have initiated dormancy in the fall. Use in minimum of 20 gal of water per acre or 40 gal if weeds have emerged. Sprays should be directed toward the soil and bottom of dormant trees.
flumioxazin @ 0.188-0.38 lb/A	Chateau SW @ 6-12 oz/A	Broadleaf and grass weeds.	Can only be applied as a uniform band directed at the base of the trunk prior to bud break. Do not allow spray or spray drift to come in contact with the tree foliage. Do not apply to trees established less than one year, unless protected from spray contact by nonporous wraps, grow tubes, paint or waxed containers. Do not make a sequential application within 60 days of the first application or 60 days to harvest. Application must be incorporated with a minimum of 1/2 inch of water within 48 hours after application. Do not apply to farm alleys or roads where traffic may result in treated dust settling onto crops or other desirable vegetation.
oryzalin @ 2-6 lb/A	Oryzalin 4 A.S. @ 2.0-6.0 qts/A	Annual grasses, certain annual broadleaf weeds.	Apply before annual weeds emerge. Can be applied to new plantings after soil has settled. Use low rate for short-term control; high rate for long-term control. Apply in strip in tree rows; do not apply to row middles or drive rows.
rimsulfuron @ 0.0625	Matrix SG @ 4 oz/A	Broadleaf, grass and nutsedge weeds.	Trees must be established for one year before application. Avoid direct or indirect spray contact with crop foliage or fruit. Do not use MATRIX SG in a spray solution with a pH of below 4.0 or above 8.0 to avoid degradation of the herbicide. Best results are obtained when the soil is moist at the time of application, and 1/2 inch of rainfall or sprinkler irrigation occurs within two weeks after application. <b>The PHI is seven days.</b>



**Mayhaw: Table 2. Directed postemergence herbicides.**

Active Ingredient and Rate	Formulated Product and Rate	Weeds Controlled	Remarks and Precautions
glyphosate @1-5 lb/A	Glyphos, Honcho, Glyphyogan and other 4 lb/gal formulations @ 1-5 qt/A. Various Roundup formulations. See label for rates.	Annual and perennial weeds.	For use on bearing and nonbearing trees. DO NOT allow spray to contact green shoots or foliage. Allow a minimum of one day between application and harvest. Use lower rates for easier to kill annuals and higher rates for harder to kill weeds.
carfentrazone @ 0.016-0.031 lb/A	Aim 2EC @ 1-2 oz/A; Apply with COC @ 1 gal/100 gal or NIS @ 2 pt/100 gal.	Post-directed application for control of susceptible broadleaf weeds.	Lower rates may be used to control small seedling weeds at the two- to three-leaf stage. Higher rate is needed for larger weeds up to the six-leaf stage. Applications to weeds beyond the six-leaf stage may result in only partial control. Do not apply within three days of harvest. Do not make applications with air blast sprayers. Do make applications less than 14 days apart. Do not apply more than 2 fl oz per acre per application and 7.9 fl oz per acre per season, including preplant site preparation.
glufosinate-ammonium @ 0.88-1.02 lb/A	Rely 280 @ 48-56 oz/A; Cheetah @ 48-56 oz/A	Postemergent control of grasses and broadleaf weeds.	Apply as a directed spray to control undesirable vegetation. Lower rates may be used to control weeds less than 3 inches tall. Higher rate is needed for larger weeds 3-6 inches tall. Warm temperatures, high humidity and bright sunlight improve performance of glufosinate. Do not graze, harvest and/or feed treated orchard cover crops to livestock.
pyraflufen ethyl @ 0.02-0.08 oz/A	Venue @ 1-4 oz/A	Broadleaf weeds.	Trees established less than one year should be protected with nonporous wraps, grow tubes or waxed containers. Do not exceed 6.8 fl oz per acre per season. Do not exceed three applications per season.

**Peach: Table 1. Preemergence herbicides.**

Active Ingredient and Rate	Formulated Product and Rate	Weeds Controlled	Remarks and Precautions
diuron @ 1.6-2.2 lb/A	Diuron 4L @ 1.6-2.2 qt/A; Karmex DF, Diuron DF @ 2-2.75 lb/A	Annual weeds.	Use only where peach trees have been established for at least three years. Apply as directed spray, avoiding contact of fruit and foliage with spray. Do not use on sand, loamy sand, gravelly soils or exposed subsoils. Do not use on soils with less than 1% organic matter. Can also be tank-mixed with other soil active herbicides for improved control of a wider range of weed species. Addition of surfactant will help with burndown action. Karmex DF and Direx 4L have a 20-day PHI. Other diuron formulations may have a 90-day PHI. Aerial application prohibited.
terbacil @ 1.6-3.2 lb/A	Sinbar 80WDG @ 2-4 lb/A	Annual weeds.	Use for annual weed control and perennial broadleaf weed suppression. Use only under trees in BEARING ORCHARDS that have been established for at least three years. Apply in the spring or after harvest in the fall before weeds emerge or before weeds exceed 2 inches tall. Some chlorosis of weakened trees may occur. DO NOT use on sand, loamy sand, or gravelly soils or on eroded areas where tree roots are exposed. Rate is soil texture dependent. See label for details. DO NOT use on any soil with less than 1% organic matter. Use rate cannot exceed 3 lb/A unless soil organic matter is >2%. Sinbar tank-mixed with rimsulfuron or diuron provides excellent residual control of broadleaf and grass weeds. PHI is 60 days.
diuron @ 0.8-1.6 lb/A + terbacil @ 0.08-1.6 lb/A	Karmex DF @ 1.0-2.0 lb/A + Sinbar 80W @ 1.0-2.0 lb/A	Annual weeds.	Use for broad spectrum weed control only under trees established in the orchard for at least three years. Apply in spring or after harvest in the fall before weeds emerge or after weeds emerge but are less than 2 inches tall. Research has shown this combination provides a longer period of weed control and controls a broader weed spectrum than either component herbicide used alone. DO NOT use on sandy, loamy sand, or gravelly soils or on eroded areas where subsoil or tree roots are exposed. Do not apply within 20 days of harvest.
norflurazon @ 2.0–3.9 lb/A	Solicam DF @ 2.5-5.0 lb/A	Annual grasses, broadleaf weeds.	Use for control of annual grasses, broadleaf weeds, and suppression of some perennials. Do not apply to newly transplanted trees until 18 months after planting. Apply to soil that is firm and free of depressions in which rain or irrigation water could accumulate. Apply either post-harvest in fall or in early spring. Fall applications control a broader weed spectrum than spring applications. Use the low rate on coarse textured soils; high rate on fine textured soils. May be tank-mixed with simazine for broader spectrum weed control. Add paraquat for control of emerged weeds. Rapidly hydrolyzed in soil, use low rates and split applications for maximum effectiveness. Do not apply within 60 days of harvest. Make one application per year. DO NOT graze treated areas.
oryzalin @ 2-6 lb/A	Surflan A.S., Oryzalin 4 A.S. @ 2.0-6.0 qt/A	Annual grasses, certain annual broadleaf weeds.	Use on non-bearing trees for control of annual grasses and small seeded broadleaf weeds. Use low rate for short term control (two to four months). DO NOT apply to newly transplanted trees until soil has settled and no cracks are present. Apply before annual weeds emerge in the spring or add paraquat for control of emerged weeds. May be tank-mixed with Goal, simazine, paraquat, Princep, glyphosate or Solicam. Oryzalin may be applied as sequential applications so long as total use rate does not exceed 12 qt per acre per year and there is at least 2.5 months between applications. Apply in strip in tree rows; do not apply to row middles or drive rows.

Active Ingredient and Rate	Formulated Product and Rate	Weeds Controlled	Remarks and Precautions
simazine @ 2.0-4.0 lb/A	Princep Caliber 90 @ 1.77-4.4 lb/A; Princep 4L, Simazine 4L @ 1.6-4 qts/A	Annual grasses, certain broadleaf weeds.	Use for control of annual broadleaf weeds ONLY under trees established in the orchard for at least one year. Apply only once per year. Use the low rate on coarse textured soils. Some chlorosis may be observed in areas where little or no topsoil is present. DO NOT apply to gravelly, sandy, or loamy sand soils. Add paraquat for control of emerged weeds. Tank-mixing simazine with oryzalin, Prowl H2O, or Solicam will greatly improve residual control of annual grass weeds. Use simazine ONLY under trees established in the orchard for one year. Apply in fall or spring. Fall application controls a broader weed spectrum than a spring application. If applied in the fall, follow a different preemergence herbicide in the spring.
oxyfluorfen @ 1.25-2 lb/A	Goal 2XL @ 5-8 pt./A (banded application) @ 5-6 pt/ A (broadcast application); Goal Tender 4EC @ 2.5-4 pt/A	Preemergence control of broadleaf and some grass weeds; provides burndown of young emerged weeds.	Apply ONLY to DORMANT bearing and non-bearing trees for control of certain annual broadleaf weeds. DO NOT apply during the growing season or bud swell stage of growth. Has both contact postemergence and residual activity. Use higher rates for preemergence treatments. May be tank-mixed with simazine, Devrinol, Surfian, or paraquat. When tank-mixing, always read and follow all product labels.
pendimethalin @ 1.9-3.99 lb/A	Prowl H <sub>2</sub> O @ 2.0 -4.2 qt/A	Broadleaf weeds, annual grasses.	DO NOT apply to newly planted trees until the soil has settled and no cracks are present. Adequate rainfall or irrigation within seven days of application is necessary for optimum herbicide performance. Apply in combination with non-selective POST herbicide for control of emerged weeds. The pre-harvest interval for Prowl H <sub>2</sub> O in stone fruit is 60 days. Appropriate preemergence tank-mix partners include simazine and Matrix. Sequential applications may be used so long as total use rate does not exceed 4.2 qt/A per year. Allow at least 30 days between applications. All other formulations of pendimethalin may be used in non-bearing orchards only. Do not feed forage or graze livestock in treated orchards.
pronamide @ 1.0-2.0 lb/A	Kerb @ 2.5-5.0 lb/A	Preemergence control of certain annual and perennial broadleaf and grass weeds.	Apply as a directed spray to the soil and the base of trees on bearing and nonbearing trees in the fall or early winter. Do not apply to newly established trees until the roots are well-established. Rainfall or irrigation is required after application. Do not allow livestock to graze areas treated. Do not apply more than 4 lbs per acre active ingredient to labelled fruit trees.
rimsulfuron @ 0.0625	Matrix SG @ 4 oz/A	Broadleaf, grass and nutsedge weeds.	Apply as a band or broadcast application. DO NOT apply within 14 days of harvest. Rainfall within three weeks of application is necessary for optimum herbicide performance. Spray solutions must have a pH ranging from 4.0 to 8.0 to prevent herbicide degradation. Rimsulfuron has postemergence activity on certain weeds including henbit, common chickweed, horseweed, wild mustard, wild radish, and pigweed species. Rimsulfuron may be tank-mixed with oryzalin, Solicam, diuron, Sinbar, glyphosate, or paraquat. Tree must be established for at least one year. Sequential applications can be made so long as total use rate does not exceed 4 oz/A per year and application is made in a band on less than 50% of the orchard floor. Rimsulfuron will provide POST control of certain weeds (see label for details). POST horseweed control can be obtained when rimsulfuron is applied to horseweed. Avoid direct or indirect spray contact with crop foliage or fruit.

**Peach: Table 2. Postemergence herbicides.**

Active Ingredient and Rate	Formulated Product and Rate	Weeds Controlled	Remarks and Precautions
clethodim @ 0.07-0.12 lb/A	Select Max @ 9-16 fl. oz/A	Annual and perennial grasses.	Use for control of annual and perennial grasses. Use higher rates for perennial grasses. Add crop oil concentrate (1 gal/100 gal of spray solution, but not less than 1 pt/acre). Make application to Johnsongrass – 12-18 inches tall; bermudagrass – 3 inches tall or with 4- to 8-inch runners; annual grasses – 2-8 inches tall. Clethodim does not control nutsedge(s). Sequential applications will be necessary for perennial grass control. For Select Max, add a surfactant at 0.25% v/v (1 qt/100 gal of spray solution). Select Max has a 14-day PHI for peach and can only be used on non-bearing trees. All other formulations are registered for use in only nonbearing peach and nectarine plantings.

**Peach: Table 3. Directed postemergence herbicides.**

Active Ingredient and Rate	Formulated Product and Rate	Weeds Controlled	Remarks and Precautions
paraquat @ 0.64-1.0 lb/A	Gramoxone 2 SL @ 2.5–4 pt/A; Firestorm, Parazone, or Paraquat Concentrate @ 1.75-2.7 pt/A; Add NIS @ 0.25% v/v.	Annual grasses, broadleaf weeds; top kill and suppression of perennials.	Use for broad spectrum, contact control of emerged weeds. Apply as a directed spray in high spray volumes (20+ gpa) with 1 qt surfactant/100 gal of spray solution. Apply when broadleaf weeds and annual grasses are succulent and 1-6 inches tall. DO NOT allow spray drift to contact foliage or green bark of trees since severe damage may occur. May be tank-mixed with certain preemergence herbicides to provide postemergence and residual weed control. Paraquat has a 14-day PHI for peach and a 29-day PHI for nectarine. For mature, woody weeds, green suckers, late germinating weeds, retreatment or spot treatment may be necessary. Do not allow spray to contact green stems, fruit or foliage. Do not spray under windy conditions. Use a shield for young trees. No more than three applications per year may be used.
fluazifop @ 0.19–0.37 lb/A	Fusilade DX @ 12-24 oz/A; Apply with COC @ 1 qt/25 gal or NIS @ 0.5 pt/25 gal.	Perennial and annual grasses.	Use for control of annual and perennial grasses in BEARING or non-bearing trees. Low spray volumes (10 gpa) generally improve control. Add crop oil concentrate (1 gal/100 gal of spray solution). Make application to Johnsongrass – 12-18 inches tall; bermudagrass – 3 inches tall or with 4- to 8-inch runners; annual grasses – 2-4 inches tall. Does not control nutsedge(s). Do not apply within 14 days of harvest. For control of perennial grasses, multiple applications may be necessary. Do not graze livestock on treated areas. Do not apply more than 72 fl oz of Fusilade per acre per year. Do not apply more than 24 fl. oz. of Fusilade per application. Do not apply more than three applications per year. PHI is 14 days.

Active Ingredient and Rate	Formulated Product and Rate	Weeds Controlled	Remarks and Precautions
glufosinate-ammonium @ 0.88-1.02 lb/A	Rely 280 @ 48-56 oz/A; Cheetah @ 48-56 oz/A	Postemergence control of grasses and broadleaf weeds.	DO NOT SPRAY GREEN BARK, UNCALLUSED BARK OR DESIRABLE FOLIAGE UNLESS TREES ARE PROTECTED. Glufosinate should not be used on trees within one year of transplanting. Apply in a minimum of 20 gallons of water per acre as a directed spray under trees. Repeat applications may be necessary for control of perennial weeds. Glufosinate can be tank-mixed with diuron, Sinbar, Solicam, oryzalin, oxyfluorfen, rimsulfuron, simazine, flumioxazin, or 2,4-D amine. Glufosinate has a 14-day PHI. Do not apply more 164 fl oz/A within a 12-month period. Allow at least 28 days between applications. Glufosinate formulations contain surfactant; therefore, additional nonionic surfactants or crop oils are not necessary and may increase potential for injury. Glufosinate will control glyphosate resistant weeds. Lower rates may be used to control weeds less than 3 inches tall. Higher rate is needed for larger weeds 3-6 inches tall. Warm temperatures, high humidity and bright sunlight improve performance of glufosinate. Do not graze, harvest and/or feed treated orchard cover crops to livestock.
sethoxydim @ 0.3-0.5 lb/A	Poast @ 1.0-2.5 pt/A; Apply with a non-phytotoxic oil concentrate @ 1 qt/A.	Annual and perennial grasses.	Apply as a directed spray using 20-50 gal water/A at 40-60 psi pressure. Use flat fan nozzle tips. Use low rate on annual grasses up to 6 inches tall and high rate on annual grasses up to 12 inches tall. PHI is 25 days. Does not control nutsedge. Do not allow livestock to graze treated area. Do not apply by air.
carfentrazone @ 0.008-0.031 lb/A	Aim 2EC @ 0.5-2 oz/A; Apply with NIS @ 1 qt/100 gal or COC @ 1 gal/100 gal.	Post-directed application for control of susceptible broadleaf weeds.	Apply alone or tank-mix with preemergence herbicides. Apply in a minimum spray volume of 20 GPA. Do not allow Aim to contact green bark or desirable foliage or fruit. Trees 2 years old and younger must be protected with a shield or painted to prevent injury. PHI is three days. Best results are obtained when weeds are at the two- to three-leaf stage. Apply in combination with a nonionic surfactant (1 qt/100 gal of spray solution) or crop oil concentrate (1 gal/100 gal of spray solution). The addition of Aim to glyphosate will improve postemergence control of morning glory. Sequential applications may be used so long as there is at least 14 days between applications and total use rate for the year does not exceed 7.9 fl oz/A.

**Pecan: Table 1. Preemergence herbicides.**

Active Ingredient and Rate	Formulated Product and Rate	Weeds Controlled	Remarks and Precautions
oxyfluorfen @ 1.25-2.0 lb/A	Goal 2XL, Galigan @ 5-6 pt/A; GoalTender @ 2.5-4 pt/A	Preemergence control of broadleaf and some grass weeds; provides burndown of young, emerged weeds.	Dormant season application. Apply prior to bud swell or after trees have initiated dormancy in the fall and after harvest. Use in minimum of 20 gal of water per acre.
norflurazon @ 2-3.9 lb/A	Solicam 80DF @ 2.5-5.0 lb/A	Annual grasses, broadleaf weeds.	Use for control of annual grasses, broadleaf weeds, and suppression of some perennials under bearing, non-bearing, or newly set trees. Apply to newly planted trees only after soil has settled around roots, at least six months after planting. Avoid contact with roots. Apply in the fall or early spring—fall applications control a broader weed spectrum than spring applications. DO NOT apply when nuts are on the ground at harvest. Use low rate on coarse-textured soils, higher rates on fine-textured soils. Make only one application per year. DO NOT graze treated areas. May tank-mix with simazine or diuron for broader spectrum weed control. Add paraquat, glufosinate, or glyphosate for control of emerged weeds. DO NOT apply within 60 days of harvest. Sequential applications can be used so long as total use rate does not exceed maximum use rate for soil texture and crop.
oryzalin @ 2-6 lb/A	Surflan 4 A.S., Oryzalin 4 A.S. @ 2.0-6.0 qts/A	Annual grasses, broadleaf weeds.	Use on non-bearing and bearing trees for control of annual grasses and small seeded broadleaf weeds. Use low rate for short-term control (two to four months); high rate for long-term control (eight to 12 months). DO NOT apply to newly transplanted trees until soil has settled and no cracks are present. Apply before annual weeds emerge in the spring or add paraquat, Rely, or glyphosate for control of emerged weeds. Sequential applications may be used so long as total use rate does not exceed 12 qt/A/year and there are two and a half months between applications. Use for control of annual grasses and certain broadleaf weeds. Use low rate for shorter control (two to four months.); high rate for long term control (six to eight months).

Active Ingredient and Rate	Formulated Product and Rate	Weeds Controlled	Remarks and Precautions
pendimethalin @ 1.9-5.99 lb/A	Prowl H <sub>2</sub> O@ 2-6 qt/A	Broadleaf weeds, annual grasses.	Control of annual grasses and broadleaf weeds such as pigweed. Most effective when adequate rainfall or irrigation is received within seven days after application. DO NOT apply to newly transplanted trees until ground has settled around roots. Sequential applications may be used as long as total use rate does not exceed 6 qt/A and there are 30 days between applications. <b>Prowl H2O has a 60-day PHI for pecans;</b> however, other pendimethalin formulations can only be used in non-bearing pecans. Do not feed forage or graze livestock in treated groves or orchards.
flumioxazin @ 0.188-0.38 lb/A	Chateau 51 WDG @ 6-12 oz/A; Tuscany 51 WDG @ 6-12 oz/A	Broadleaf and grass weeds.	<b>DO NOT</b> apply more than 6 oz/A/application to soils having a sand and/or gravel content > 80%. Trees established less than one year must be shielded with a grow tube or waxed container. DO NOT apply second application within 30 days of initial application. Applications after bud break can only be made with shielded application equipment. Once trees break dormancy apply with paraquat or glufosinate for non-selective postemergence control. Must use shielded application equipment if using in non-dormant pecan trees. <b>Flumioxazin has a 60-day PHI for pecans.</b> Do not allow spray or spray drift to come in contact with the tree foliage. Moisture is necessary to activate herbicide on soil. Do not apply to farm alleys or roads where traffic may result in treated dust settling onto crops or other desirable vegetation.
napropamide @ 4.0 lb/A	Devrinol DF-XT @ 8.0 lb/A	Annual grasses, broadleaf weeds.	Apply to a weed-free soil surface. May be applied to newly planted or to established crop. Do not exceed a maximum application rate of 8 lb per acre per crop cycle. Do not apply within 50 days of harvest.
rimsulfuron @ 0.0625	Matrix 25 WG, Solida 25 WG, or Pruvin 25 WG @ 4 oz/A	Broadleaf, grass and nutsedge weeds.	Provide PRE and POST control of broadleaf and annual grass weeds (see label for weed control POST). For broad spectrum residual control tank-mix with diuron, oryzalin, or Prowl H2 O. Use in orchards established at least one year. <b>Rimsulfuron has a 14-day PHI for pecan.</b> Sequential applications may be used so long as there are 30 days between applications and total use rate does not exceed 4 oz/A broadcast basis. Avoid direct or indirect spray contact with crop foliage or fruit. Do not use MATRIX in a spray solution with a pH of below 4.0 or above 8.0 to avoid degradation of the herbicide. Best results are obtained when the soil is moist at the time of application, and a half inch of rainfall or sprinkler irrigation occurs within two weeks after application.

**Pecan: Table 2. Postemergence herbicides.**

Active Ingredient and Rate	Formulated Product and Rate	Weeds Controlled	Remarks and Precautions
clethodim @ 0.094-0.125 lb/A	Select @ 6-8 fl oz/A; Select Max @ 9-16 oz/A; Always add an adjuvant or crop oil concentrate to spray, see label.	Annual and perennial grasses.	Use for control of annual and perennial grasses in NON-BEARING trees that will not be harvested within one year of application. Use higher rates and sequential applications for perennial grasses. Add a nonionic surfactant containing at least 80% ai at a rate of 1 qt/100 gal of spray solution (0.25% v/v). Make application to johnsongrass: 12-18 inches tall; bermudagrass: 3 inches tall or with 4- to 8-inch runners; annual grasses: 2-8 inches tall. Does not control nutsedge. Apply before grasses exceed height limitations. <b>Apply to nonbearing plants only.</b> Spray should be directed at the base of the tree, not on foliage. Do not graze treated areas. PHI is 14 days.

**Pecan: Table 3. Directed postemergence herbicides.**

Active Ingredient and Rate	Formulated Product and Rate	Weeds Controlled	Remarks and Precautions
fluzafop @ 0.19-0.37 lb/A	Fusilade DX @ 12-24 oz/A; Always use a non-phytotoxic crop oil concentrate or a nonionic surfactant.	Perennial and annual grasses.	Use for control of annual and perennial grasses under bearing or non-bearing trees. Sequential applications will be necessary for control of perennial grass weeds like bermudagrass and johnsongrass. Low spray volumes (10 GPA) generally improve control. Add crop oil concentrate (1 qt/A). Make application to johnsongrass: 12-18 inches tall; bermudagrass: 3 inches tall or with 4- to 8-inch runners; annual grasses: 2-8 inches tall. Does not control nut sedge(s). <b>DO NOT apply when harvestable nuts are on the ground. DO NOT graze treated area. DO NOT apply within 30 days of harvest.</b> Do not apply a total of more than 72 fl oz of Fusilade DX Herbicide per acre per year (1.125 lb ai/A). • Do not apply more than 24 fl oz of Fusilade DX Herbicide per acre per application (0.375 lb ai/A). • Do not apply more than three applications per year. • Maintain a minimum of 14 days between applications.



Active Ingredient and Rate	Formulated Product and Rate	Weeds Controlled	Remarks and Precautions
paraquat @ 0.64-1.0 lb/A	Gramoxone SL @ 2.5-4 pt/A; Firestorm 3 SL, Parazone, or Paraquat concentrate @ 1.75-2.7 pt/A; Add an approved nonionic surfactant at 1-2 pt/100 gal/spray.	Annual grasses, broadleaf weeds; top kill and suppression of perennials.	Use for broad spectrum, contact control of emerged weeds. Apply as a directed spray in at least 20 gal of water with 1-2 pt surfactant/100 gal of spray mix or 1% crop oil concentrate (1 gal/100 gal spray mix). Apply when annual weeds are succulent and 1-6 inches tall. DO NOT allow spray drift to contact foliage or green bark of trees since severe damage may occur. DO NOT allow animals to graze on treated areas. May be tank-mixed with certain preemergence herbicides for effective residual weed control. DO NOT apply when nuts are on the ground. Thorough weed coverage is essential. Repeat as necessary. Spray drift will cause injury. Do not allow spray to contact foliage, fruit or stems. No more than five applications may be made annually. All applications must be made prior to shaking for harvest.
sethoxydim @ 0.19-0.47 lb/A	Poast @ 1.0-2.5 pt/A; Always use a non-phytotoxic oil concentrate (1 qt/A).	Annual and perennial grasses.	Use for control of annual and perennial grasses. Sequential applications will be necessary for control of perennial grass weeds like bermudagrass and johnsongrass. Low spray volumes (10 GPA) generally improve control. Add crop oil concentrate (1 qt/A). Use low rate on annual grasses up to 6 inches tall; higher rates on larger annual grasses and perennial grasses. Does not control nutsedge. <b>DO NOT harvest within 15 days of application.</b> Apply as directed spray to nonbearing trees that will not be harvested within one year of application.
glyphosate @ 1-5 lb/A	Glyphos, Honcho, Glyphogan and other 4 lb/gal formulations @ 1-5 qt/A.	Annual and perennial weeds.	Apply as a directed spray. DO NOT allow spray to contact green shoots or foliage. Allow a minimum of three days between application and harvest. Use lower rates for easier to control annual weeds and higher rates for harder to control weeds. Try to avoid applications in late summer and fall. Trees are more sensitive to glyphosate during that time. Allow at least three days between last application and harvest.
carfentrazone @ 0.016-0.031 lb/A	Aim 2EC @ 1-2 oz/A; Apply with COC @ 1 gal/100 gal or NIS @ 2 pt/100 gal.	Post-directed application for control of susceptible broadleaf weeds.	Apply alone or tank-mix with other herbicides for postemergence control of broadleaf weeds including pigweed, morning glory, lambs' quarters and prickly lettuce. DO NOT allow Aim to contact desirable foliage, flowers, or fruit. DO NOT apply within three days of harvest. Trees less than 2 years old must be shielded from direct contact with Aim. Sequential applications may be used as long as total use rate does not exceed 7.9 oz/A/ year and there are 14 days between applications. Best results obtained when applied to weeds in the two- to three-leaf stage. Apply in combination with a nonionic surfactant (1 qt/100 gal of spray solution) or crop oil concentrate (1 gal/100 gal of spray solution). Lower rates may be used to control small seedling weeds at the two- to three-leaf stage. Higher rate is needed for larger weeds up to the six-leaf stage. Applications to weeds beyond the six-leaf stage may result in only partial control.

Active Ingredient and Rate	Formulated Product and Rate	Weeds Controlled	Remarks and Precautions
glufosinate-ammonium @ 0.88-1.02 lb/A	Cheetah, Reckon 280, or Rely 280 @ 48-56 oz/A	Postemergent control of grasses and broadleaf weeds.	Use for broad spectrum control of emerged weeds and grasses, both annuals and perennials. Apply as a directed spray in high spray volumes on nonbearing and bearing trees. Possesses contact and limited systemic activity but does well on wild brambles and perennial grasses. Does not have soil residual activity. DO NOT contact foliage or green bark. Glufosinate formulations are loaded with surfactant therefore NO additional nonionic surfactants or crop oil is needed. The addition of spray graded ammonium sulfate fertilizer at 8-10 lb/100 gal will enhance glufosinate activity. Do not apply this product within 14 days of nut harvest. Do not graze, harvest and/or feed treated orchard cover crops to livestock.
halosulfuron @ 0.032-0.63 oz/A	Sandea 75WDG @ 0.66-1.33 oz/A	Postemergent control of yellow, purple and many other sedge species.	For control of nutsedge, pigweed, radish, and cocklebur. Optimum application time is when actively growing sedges are at the three- to five-leaf stage. Apply as directed spray under trees established for at least one year. Avoid contact of spray with trunk, stem, roots, or tree foliage. May apply up to two applications. <b>DO NOT apply within one day of harvest.</b> See label for rate restrictions related to soil texture. Tank-mix with glyphosate for broad spectrum control. Use ONLY under trees established in the orchard for one year or more where soil is settled with no cracks.

#### Pecan: Table 4. Chemical mowing herbicides.

Active Ingredient and Rate	Formulated Product and Rate	Weeds Controlled	Remarks and Precautions
Glyphosate (See label)	Roundup and various generic formulations of glyphosate. See label.	Vegetation and bahiagrass seed head suppression.	Use for vegetative suppression in row middles. Apply one to two weeks after full green-up of bahiagrass or bermudagrass, or after grass has been mowed to a uniform height of 3-4 inches. Rates should vary depending on vigor of vegetative growth and canopy of the grove, with the higher rates for more vigorous grass stands where less shade occurs. Low spray volumes (10 GPA) improve control. See respective labels for surfactant requirements. Sequential applications can be made to maintain growth suppression and prepare the orchard floor for mechanical harvest. Sequential applications must be made prior to seedhead emergence. Allow a minimum of 21 days between the last application and harvest.