

The Blueberry Bulletin

A Weekly Update to Growers

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- ❖ The 2022 Commercial Blueberry Pest Control Recommendations for New Jersey is available on njaes.rutgers.edu

PREPARING FOR HERBICIDE SHORTAGES

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Tips in Preparation of Herbicide Shortages in 2022 – Tree Fruit and Small Fruit Crops

Many growers in the US have been focused on predicted herbicide shortages in the upcoming field season. While the primary concerns have surrounded glyphosate and glufosinate, **there is increasing apprehension that active ingredients of importance to tree fruit and small fruit growers may also be affected.** Although the supply change is dynamic, chemical stocks may become, and remain, tight at the local or regional level as growers try to fill gaps in their toolboxes. As spring residual herbicides are soon to be applied, please consider the following when planning for the 2022 season.

Important note: Not all herbicides are available in all crops in both New Jersey and New York. Always review current labels before applying products.

Successful Weed Identification, Regular Scouting and Detailed Field Records are Crucial for Optimizing Weed Control Success

The first step in developing a novel herbicide program is knowing what species are present and determining which combination of products will be the most effective (and affordable) at suppressing them. Not all active ingredients are equally useful against all species and careful consideration needs to be paid to each chemical's spectrum of control. Please, carefully review herbicide effectiveness tables for various weed species that are available in the 2022 Commercial New Jersey Pest Control Recommendations for blueberry, tree fruits or grape (<https://njaes.rutgers.edu/pubs/>). Similar tables are available in Cornell's weed control guides ([PMEP Guidelines \(cornell.edu\)](https://www.cornell.edu/pmeep/guidelines/))

Familiarize Yourself with Chemical Substitutes before Applying Them over Many Acres

Some switches may be intuitive (e.g. using Poast (sethoxydim) or Fusilade (fluazifop) in place of clethodim where allowed) while others may be more complicated (e.g. using a tank-mixture in

place of a single product). In addition to knowing a product's target species, become acquainted with each herbicide's labeled rate structure and spray volume, use patterns (e.g. application timing), environmental limitations (e.g. soil type or temperature restrictions), adjuvant requirements, and potential interactions with tank-mix partners. Not all chemicals are compatible with each other, and antagonism can reduce weed control efficacy while enhancing crop injury concerns. Contact your Extension Specialists if you have any doubt regarding physical compatibility and efficacy of herbicides mixtures.

Soil-Applied Preemergence Herbicides are Critical Tools

Soil-applied preemergence herbicides are very useful tools for suppressing weeds that emerge with the crop; these plants are the most injurious as early season competitors are very likely to reduce yields. Like postemergence products, soil-applied herbicides must be carefully selected to balance crop safety with weed control needs. Pay attention to rate requirements according to soil type, as this can influence both efficacy and injury. Preemergence herbicides need to be moved (aka activation) into the soil solution (via either rainfall or irrigation) where they are taken-up by emerging weed seedlings; delays in activation can reduce overall performance if some weeds continue to germinate and emerge under low soil moisture conditions. Delays may also facilitate the degradation of some products susceptible to breakdown in sunlight (i.e. photolysis). Be aware that trickle irrigation may cause less effective and less consistent weed control by washing off residual herbicides from top soil where weeds germinate, thus increasing herbicide application costs. **When possible, use overlapping residual products to suppress weed emergence throughout the season.** Some active ingredients may have both preemergence and postemergence activity (e.g. flumioxazin (Chateau) or simazine (Princep)).

Timing Matters

Postemergence (i.e. foliar) weed control should be undertaken when weeds are small and succulent. Herbicide labels will have specific recommendations regarding the optimal size for treatment. For instance, clethodim (Select Max) and sethoxydim (Poast) have a maximum height or lateral growth requirement of 6 inches for effective control of goosegrass or crabgrass. Weeds are more sensitive to control measures when they are small and succulent, so rapid identification and management will improve control success. Because many foliar-applied herbicides can also damage crops, as well, always follow label guidance to reduce risk of injury.

Optimize Herbicide Application Rate for Postemergence Applications

Target using the lowest effective herbicide rate to stretch your herbicide supply. For example, instead of applying 32 or 44 oz/acre of a glyphosate brand product, consider using the standard rate on the label such as 22 oz/acre for Roundup PowerMax. **Again, timing of application with regards to weed size will be critical to optimize your herbicide supply.** The smaller the weeds, the less herbicide you will have to apply to control it! Therefore, frequent scouting as highlighted above will be very important to optimize your herbicide application and stretch your herbicide supply.

Don't Skimp on Adjuvants

If herbicides are going to be in short supply, then there may be fewer shots to control weeds. If there are fewer shots available, make every shot count as much as possible. **Follow label recommendations regarding the inclusion of water conditioners, surfactants, etc., to maximize product efficacy.** Refer to point number two about potential compatibility concerns when tank-mix partners are involved.

Get Perennial Weeds under Control

Cooperating Agencies: Rutgers, The State University of New Jersey, U.S. Department of Agriculture, and Boards of County Commissioners. Rutgers Cooperative Extension, a unit of the Rutgers New Jersey Agricultural Experiment Station, is an equal opportunity program provider and employer.

Perennial species such as Canada thistle, goldenrods, bindweed or quackgrass are frequent and troublesome weeds of tree fruit and small fruit crops. Because control of these weeds requires the use of systemic herbicides that may be in short supply (i.e. glyphosate), appropriate timing of application will be critical to maximize herbicide efficacy. For example, Canada thistle should be sprayed with a systemic herbicide in late spring after flower buds started to develop whereas Virginia creeper or poison ivy should be targeted in mid- to late summer after vines flowers but before fall color appears in the foliage. Use effective alternatives such as clopyralid (Stinger) for control of leguminous and composite (e.g. Canada thistle) weeds or soil-applied pronamide (Kerb) for control of perennial grasses where authorized. This may help you to reserve the use of glyphosate for perennial weeds that cannot be efficiently controlled by other products.

Consider Non-Chemical Weed Control Strategies When and Where Appropriate

This includes hand weeding, cultivation, and mowing practices. Like herbicides, these practices are not effective against all species at all times. For example, while cultivation can control many weed seedlings, particularly at the white-thread stage, soil disturbance is less effective against well-developed plants. In the case of some perennials (for instance, field bindweed or Canada thistle), cultivation contributes to break up and disperse root fragments within and across fields, facilitating dispersal. Ultimately, plan for hand-weeding escapes prior to the weeds setting seeds as this will help reducing the weed seedbank for future growing seasons.

Plan Ahead Now

2022 could be a difficult year if many crop production and protection chemicals are limited. Herbicide shortages could impact weed control success in the coming growing season...and beyond. Weeds that are not controlled in 2022 will set seed that will cause problems in the future. **Planning now can help with weed management in both the short and long term.**

2022 Update on Weed Control with Preemergence Herbicides for Highbush Blueberry

With a looming shortage of some postemergence herbicides, effective use of soil-applied preemergence herbicides becomes increasingly important in 2022. As the T3 stage is forecasted for early April, soil-applied preemergence herbicides should be sprayed before blueberry bud break.

Soil-applied preemergence herbicides should be applied prior to weed seed germination. If applied to weeds that are already out of the ground, most of these products will not control them if they are not mixed with a postemergence herbicide. Glufosinate (Rely 280), paraquat (Gramoxone) and carfentrazone (Aim) are postemergence herbicides that may be applied with preemergence herbicides with little risk for crop injury. **Keep in mind that at least ½" rainfall or irrigation is needed within 7 days after application to move ("activate") preemergence herbicides into the soil solution.** Delaying activation may reduce overall performance if some weeds continue to germinate under low soil moisture conditions or if herbicide at the surface of the soil is susceptible to sunlight breakdown.

Make sure the herbicides you plan to apply will be effective at controlling the weed species in your field by checking the herbicide label. Usually, residual herbicides will suppress weed for 5 to

8 weeks depending on irrigation as well as soil and weather conditions. After this period, another residual herbicide can be needed to control weeds through harvest and could be mixed with postemergence herbicides to control emerged weeds. In order to reduce the potential of selecting for herbicide-resistant weeds, it is highly recommended mixing two herbicides that belong to two different WSSA (Weed Science Society of America) groups whenever you apply preemergence herbicides.

Please, refer to the 2022 New Jersey Commercial Blueberry Pest Control Recommendations for more information on herbicide rates and use restrictions.

<https://njaes.rutgers.edu/pubs/publication.php?pid=E265>

WSSA group 0 – Unknown Site of Action

Devrinol (napropamide) will provide good control of annual grasses and should therefore be tank mixed with a PSII or a PPO inhibitor for controlling broadleaf weeds. Devrinol is rapidly degraded if left exposed on the soil surface, so it should be applied less than 24 hours before a rain event to incorporate the herbicide in the soil.

WSSA group 2 - Acetolactate Synthase (ALS) Inhibitors

Solida, **Matrix SG** (rimsulfuron) and **Sandea** (halosulfuron) are ALS-inhibiting herbicides that have both preemergence and postemergence activity. They control most annual broadleaves but are weak on common groundsel, common lambsquarters and eastern black nightshade. Sandea is **ONLY** recommended for postemergence control of yellow nutsedge.

However, these two herbicides will **NOT** control ALS resistant weeds (horseweed, ragweed) already widespread in New Jersey. Thus, these herbicides should always be tank mixed with a partner effective at controlling these weeds.

WSSA group 3 - Mitosis Inhibitors

Kerb (pronamide) and **Surflan** (oryzalin) are effective at controlling many annual grass species for 4 to 6 weeks after application. Surflan should not be applied to soils containing more than 5% organic matter

Kerb also helps controlling perennial quackgrass as well as annual bluegrass. If applied to warm soils, Kerb persistence and weed control can be severely reduced; therefore, keep Kerb for fall/winter application when soil temperature remains under 55°F. Do not use Kerb on blueberries that have not been established for about a year.

WSSA group 5 and 7 - Photosystem II (PS II) Inhibitors

PS II inhibitors have a broad spectrum of control and will be effective against many broadleaves and annual grasses when applied in spring. **Karmex** (diuron) and **Princep** (simazine) have relatively low solubility and have been very safe on blueberries. **Sinbar** (terbacil) has a longer residual life in the soil and also is more soluble, so it should be used infrequently on light, wet soils. **Velpar** (hexazinone) is **very soluble and should not be used on New Jersey sandy soils**. These herbicides are effective on many broadleaf weed species, including common chickweed, common lambsquarters, common groundsel, henbit, nightshade, redroot pigweed, pineapple weed, shepherd's-purse, smartweed, and some mustards. Princep and Sinbar will also control many annual grasses and help suppressing quackgrass. **Trellis** (isoxaben) is registered for bearing and non-bearing blueberry. Trellis will be most useful in new plantings for preemergence control of annual broadleaf weeds such as common lambsquarters, ragweed, black nightshade, horseweed and smartweed. It does not control grasses.

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WSSA group 12 and 27 - Carotenoid Biosynthesis Inhibitors

Solicam (norflurazon) can be applied in fall or early spring primarily for annual grass control and quackgrass suppression. Solicam may also provide partial control of many broadleaf weeds as well as of yellow nutsedge. Do not use Solicam on blueberries that have not been established for about a year. **Callisto or Motif (mesotrione)** will control many annual broadleaf weeds as well as annual sedges. It controls large crabgrass but no other grasses, such as goosegrass. Callisto may be used as a broadcast spray between rows to control broadleaves and crabgrass without injuring the fescue sod. However, Callisto **CANNOT** be applied after the onset of bloom.

WSSA group 14 - Protoporphyrinogen Oxidase (PPO) Inhibitors

Chateau (flumioxazin) and **Zeus XC** or **Zeus Prime XC** (sulfentrazone) have activity against many annual broadleaf weeds (pigweeds, common lambsquarters, ladythumb, mallow, shepherd's-purse) when applied preemergence in spring.

Chateau and Zeus Prime XC also have some postemergence activity on newly emerged seedlings of annual weeds. Herbicides containing sulfentrazone will also provide suppression of yellow nutsedge.

Chateau has a 7 days pre-harvest interval (PHI) and Zeus Prime XC has a 3 days PHI, allowing these herbicides to be applied later in the season to extend preemergence broadleaves control into summer. Blueberry plants must have been established at least two years prior to use of these herbicides.

WSSA group 15 - Protoporphyrinogen Oxidase (PPO) Inhibitors

Dual Magnum (S-metolachlor) has a 24(c) Special Local Need label for blueberry in New Jersey. This herbicide provides preemergence control of many annual grasses and some small-seeded broadleaf annual weeds such as redroot pigweed, nightshade and common purslane. Dual Magnum also suppresses emergence of yellow nutsedge. Use Dual Magnum only on plants established for more than one year, and lower rates are suggested on 2- to 3-year-old plantings.

WSSA group 20 – Cellulose Synthesis Inhibitors

Casoron (dichlobenil) is a cellulose synthesis inhibitor recommended for fall application to control many annual and perennial broadleaves, grasses and yellow nutsedge. **If left on the soil surface or if applied to warm soil (> 55°F or 70°F depending on Casoron formulation), Casoron can lose much of its activity.** So, keep this herbicide **ONLY** for fall/winter applications. Plants must be at least one year old before Casoron should be used.

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