

The Blueberry Bulletin

A Weekly Update to Growers

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- ❖ Visit the Blueberry Bulletin webpage at njaes.rutgers.edu/blueberry-bulletin
- ❖ The 2022 Commercial Blueberry Pest Control Recommendations for New Jersey is available on njaes.rutgers.edu

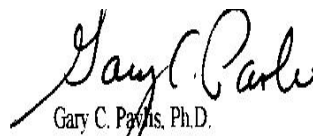
BLUEBERRY CULTURE

Dr. Gary C. Pavlis, Ph.D
Atlantic County Agriculture Agent.

Spring Planting Plans

Some growers may be considering a new blueberry planting next spring. It is imperative that some preparation occur beforehand so that disasters do not occur down the road. This year I visited a farm with 4-year-old 'Duke' plants whose berries were not yet ripe. The berry load was very large, but the berries were starting to dry up and there were very few leaves on the plants. As any reader of this newsletter knows, having no leaves is usually due to a root problem. When I dug a plant up, I saw that the roots system went down 6-8 inches and then stopped. The plant could be literally peeled off the soil at a depth of 8 inches. Further investigation revealed that the soil changed color at 8 inches to a bright orange, contained clay and was impervious to blueberry roots. So, what we have here is a planting of 'Duke' that was 4 years old, with a root system that will never grow any deeper than 8 inches because of the clay hard pan. These plants were trying to ripen a crop with a tiny root system and as a result, could not uptake enough water and nutrients to push leaves and

ripen a load of fruit. The grower options are not very appealing: 1. pull up all the plants and sub-soil to a depth of at least 2 feet and replant, 2. sub-soil a new row between the old ones and move all the plants, 3. remove the trickle system and apply 6 inches of mulch to the plant row and return the trickle system to the top of the mulch hoping that the root system will grow up into the mulch. All three require a lot of work. The alternative is a dead block of 'Duke'. This situation once again reminded me of the importance of site preparation before planting. Doing a soil boring before planting would have revealed the hard pan and the need for sub-soiling, something which is a lot easier to do before the plants are in the ground. There are some critical things to take care of before planting. Checking pH and adjusting it to 4.5 to 4.8, doing a soil boring and checking for hard pans and the seasonal high-water table, and eliminating perennial weeds are at the top of the list. In the end, a little work early can eliminate a lot of headaches later.


Gary C. Pavlis, Ph.D.
Atlantic County Agricultural Agent

PEST MANAGEMENT

Blueberry Insects

Dr. Cesar Rodriguez-Saona, Extension Specialist in Blueberry Entomology, Rutgers University

Ms. Carrie Mansue Denson, IPM Program Associate – Fruit

Scale Traps: Scale traps have decreased since last week. It is still time to treat if you have not done so. Diazinon and Esteem are the products of choice.

	Scale	
	Avg	Max
8/19	134	400
8/26	190	550
9/3	119	375

Sharp-nosed Leafhopper (SNLH) traps: Sharp-nosed leafhopper numbers are still low. If needed, treatment is usually recommended in the next few weeks. When treating for SNLH, use any of the sucking insect materials listed in the *2022 Commercial Blueberry Pest Control Recommendations For New Jersey*. Suggested materials include Diazinon, Imidan, and any neonicotinoid such as Assail, Actara and Admire. Pyrethroids are also labeled, but are slightly less effective.

	SNLH AC		SNLH BC	
	Avg	Max	Avg	Max
6/18	0	0	0	0
6/25	0.02	1	0.76	10
7/2	0.22	5	0	0
7/9	0.456	7	2.33	13
7/15	0.22	2	0.09	1
7/22	0.01	1	0	0
7/29	0.135	2	0.07	2
8/6	0.05	1	1.83	12
8/12	0.07	2	4.79	28
8/19	0.12	5	0.017	1
8/26	0.57	3	0.5	1
9/3	0.14	1	0.5	1

Fall Herbicide Applications are Critical for Controlling These Troublesome Weeds!

Thierry Besançon, Ph.D., Associate Professor and Extension Weed Science Specialist

Annual Bluegrass

Annual bluegrass (*Poa annua* L.) is an increasingly troublesome winter annual weed in some New Jersey blueberry fields. Native to Europe, this species is now worldwide distributed.

Identification and Life Cycle



Annual bluegrass tuft in December

Annual bluegrass starts germinating in late summer as soil temperature drops below 70°F. If conditions are favorable, it will continue germinating throughout the winter. Annual bluegrass has light green leaves with a typical boat-shaped tip. Leaf blades are often crinkled part way down. It will produce greenish white inflorescences (seed heads) during the spring months. Annual bluegrass is a prolific and rapid seed-producing weed. Each plant can produce up to 100 seeds that are viable just a few days after pollination, allowing multiple germination flushes during the cool season.



Annual bluegrass leaf tip – Joseph DiTommaso

Annual bluegrass tends to form dense clumps in areas with moist and/or compacted soil. Poor soil drainage, frequent irrigation, excessive fertilization, use of heavy equipment causing compaction, and shade are conditions that will encourage the development of annual bluegrass.

While annual bluegrass may not be a strong competitor for blueberry bushes, it forms a dense mat that will persist until late spring. This mat will prevent proper application of residual herbicides in spring by intercepting the spray solution and reducing the amount of residual herbicide penetrating into the soil. Thus, control of established sod of annual bluegrass prior to spring herbicide applications is essential for successful residual weed control in spring and early summer.

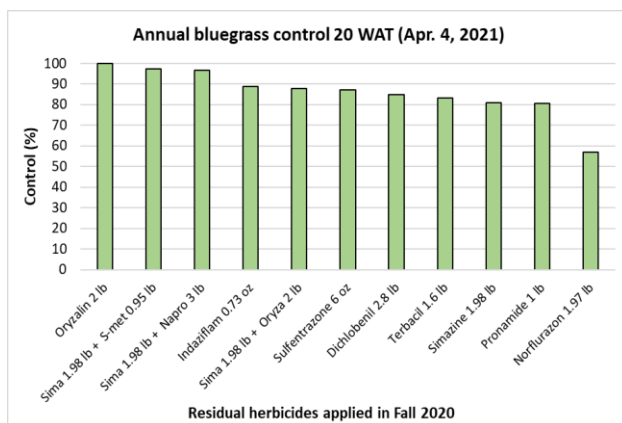
Management

As for any other weed species, preventing the release of viable seeds that will replenish the soil seedbank is a primary objective for controlling this species. Cultivation or manual digging before annual bluegrass patches become well established and before the development of inflorescence will provide control of limited infestations if continued throughout the germination period. However, the use of chemical control may be required for infested areas where the species has become established for several seasons.

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.

Application of effective preemergence herbicides may prevent annual bluegrass seedling survival. However, preemergence herbicides do not effectively control emerged plants. Timely application of preemergence herbicides is very important for effective control of annual bluegrass. Herbicides should ideally be applied in late-summer / early fall before annual bluegrass seeds germinate. However, crop injury may result if pre-emergence herbicides are applied at this time when blueberry bushes are not dormant. Therefore, a fall application of a preemergence herbicide tankmixed with a postemergence herbicide is often the most practical solution and should be considered when blueberry leaves start dropping.

- Preemergence herbicides such as **norflurazon** (Solicam), or **napropamide** (Devrinol) may effectively control annual bluegrass. Application of these herbicides can be split between fall and spring applications with half of the yearly rate applied in fall and the second half in spring.
- **Simazine** (Princep) can provide early post-emergence control of leaf stage plants in addition to its residual activity.
- **S-metolachlor** (Dual Magnum) is also effective at controlling annual bluegrass prior to germination. However, Dual Magnum can only be applied once per cropping season and will require grower to agree to the conditions of the indemnified label (<https://www.syngenta-us.com/labels/indemnified-label-search>).
- **Pronamide** (Kerb SC) is also a good option that will provide both residual and postemergence control of annual bluegrass. Optimum pronamide activity occurs when applications are made cool soil temperature conditions (35 to 55°F).

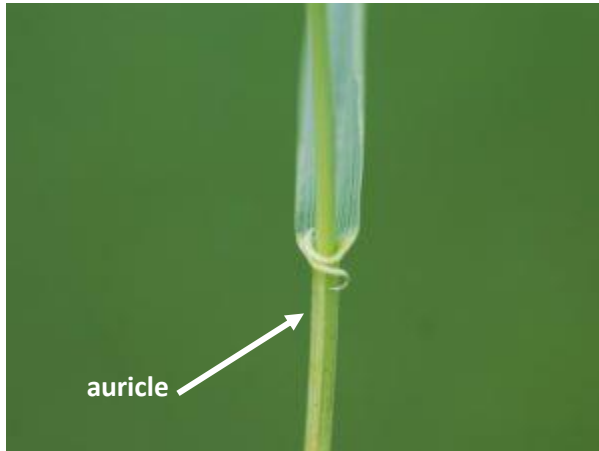


Trials conducted at two New Jersey blueberry fields in 2020 and 2021 by the Rutgers Weed Science lab indicated that Oryzalin (Surflan) applied in early fall (Oct. 8) provided 99% control of annual bluegrass the following spring. Unfortunately, oryzalin is not commercially available since 2022. Simazine at 1.98 lb ai/A mixed with S-metolachlor at 0.95 lb ai/ha or napropamide provided over 95% control of annual bluegrass next spring. Other treatments were less effective with 80% to 90% control whereas norflurazon only provided 57% control.

When annual bluegrass has emerged before residual herbicide is applied, a postemergence herbicide should be included in the tank. Use paraquat (Gramoxone or other labeled generic formulation) plus a nonionic surfactant at 0.25% v/v of the spray solution. Glufosinate (Rely 280) is also effective at controlling emerged annual bluegrass, especially when applied under bright sunlight, warm temperature, and high humidity conditions. Do not allow glufosinate spray mist to contact green bark, as injury will occur. None of the graminicides labelled on blueberry (Select, Poast) have sufficient activity for controlling annual bluegrass. The use of glyphosate (Roundup or other labeled generic formulation) is not recommended as failure to control emerged annual bluegrass has been reported in various New Jersey blueberry fields.

Quackgrass

Identification and Life Cycle



Quackgrass auricle

The weed reproduces sexually by seed and vegetatively by rhizomes, horizontal underground stems that eventually curve upward and make new shoots. The rhizomes are about one-eighth inch in diameter and may grow horizontally for up to several feet in length before curving upward and making a new shoot.



Quackgrass rhizome

A typical feature of quackgrass is the presence of a small clasping hook (auricle) at the base of the leaf blade. The seedhead, which appears in June, resembles ryegrass, except each floret is rotated one quarter turn compared to ryegrass.

Management

- **Pronamide** (Kerb) is a good option for preemergence control of perennial grasses, including quackgrass, bluegrass, ryegrass sp., fescue sp. It will also provide early control of annual grasses the following spring. Optimum pronamide activity occurs in fall (November) when applications are made under cool soil temperature conditions (35 to 55°F). Tank-mix Kerb with paraquat or a glyphosate product and with Princep for postemergence and residual broadleaf weed control.
- Apply **glyphosate** products in the fall, October or November, when the weed has vigorous healthy foliage, a minimum of 4 to 6 leaves, and has begun to tiller. Do NOT till the field or otherwise disrupt the root and rhizome system of the weeds in the soil for a minimum of 8 months before treatment. Be aware that glyphosate has **NO preemergence activity**, and therefore will not prevent the emergence of new seedlings from seeds.

Marestail/Horseweed

Identification and Life Cycle



Horseweed in late winter before bolting

Horseweed is a biennial plant that has two primary periods of emergence, from late summer through late fall, and from late March through June.

Some of the most problematic horseweed emerges in the fall and overwinters as small rosettes. **If growers do not control it with fall-applied residual herbicides, the weed has an excellent head start on the spring growing season, especially after a mild winter.** Horseweed plants remain in the rosette stage through mid-April, followed by stem elongation (bolting) and rapid growth to a height of 3 to 6 feet. Plants that emerge the previous fall will bolt earlier than spring-emerging plants.

The key to successful horseweed management is to control it when in the seedling or rosette stage.

Remember, **most of the horseweed in New Jersey is resistant to glyphosate** and we are seeing more populations that are resistant to ALS herbicides such as halosulfuron (active ingredient in Sandea) or rimsulfuron (active ingredient in Matrix). Therefore, the most consistent options to control emerged horseweed include paraquat, clopyralid or glufosinate applied to small plants.

Management

Application of effective preemergence herbicides may prevent horseweed seedling survival. However, preemergence herbicides do not effectively control emerged plants. Thus, a fall application of a preemergence herbicide tankmixed with a postemergence herbicide is often the most practical solution and should be considered when blueberry leaves start dropping.

Fall preemergence options for horseweed control

- **Simazine** (Princep) applied in late fall on **weed-free soil** at 1 to 2 lb ai/A, depending of soil texture and organic matter, will provide excellent residual horseweed control. It can also provide early post-emergence control of seedling stage plants in addition to its residual activity but will require the addition of a postemergence herbicide if rosettes have already formed.
- **Mesotrione** (Callisto) has both preemergence and postemergence activity. When applied in the late fall after leaf drop, mesotrione will control many annual broadleaf weeds including emerged horseweed seedlings. Mesotrione has little to no grass activity and should therefore be tank-mix with a residual grass herbicide to improve annual grass control.
- **Dichlobenil** (Casoron) applied late fall, after November 15th, but before the soil freezes, have controlled susceptible weeds more consistently than late winter applications. Treat before weed growth begins and when daily high temperatures do not exceed 50°F. Casoron is volatile in warm temperatures and must be irrigated or incorporated after application if applied in warm weather to prevent significant loss of the herbicide.

If horseweed emergence already occurred at the time you plan your fall preemergence herbicide application, you will have to include one of the following postemergence option:

- **Paraquat** (Gramoxone SL 2.0) is a contact killer that has no translocation or residual activity. **So, best results are achieved when seedlings are less than 1 inch in diameter.** Two applications, two

weeks apart are more effective than a single application. Regrowth may occur from the root systems of established weeds. Always use a nonionic surfactant (0.25% v/v) to improve the weed leaf surface in contact with the herbicide and enhance weed control. Paraquat targets the plant photosystem apparatus, applications made at sunset will increase weed control efficiency by allowing more herbicide to penetrate before being activated by sunlight in the morning.

- **Clopyralid** (Stinger) acts as both a postemergence foliar absorbed herbicide and a residual herbicide. The initial twisting and curling observed after application to susceptible species is due to the foliar absorption. Clopyralid can eventually be tank-mixed with paraquat to increase the spectrum of weeds controlled and defoliate existing foliage of perennial asters, goldenrod species and mugwort. **Only the Stinger formulation of clopyralid received a New Jersey 24(c) Special Local Need label for use on blueberry; this 24(c) is valid until Dec. 31, 2025.**
- **Glufosinate** (Rely 280) is a foliar active, nonselective herbicide that controls a broad spectrum of emerged annual and perennial weeds. Best results are obtained when it is applied to actively growing weeds. Contact of glufosinate with parts other than mature callused brown bark will result in extremely severe damages to the blueberry bush. Warm temperature, high humidity, and bright sunlight will improve the performance of glufosinate.

IMPORTANT

All preemergence herbicides require incorporation from rainfall so that the herbicide can move into the first few inches of soil where it will be protected from degradation or volatility.

Consult the New Jersey Commercial Blueberry Pest Control Recommendations for rates and additional information (<https://njaes.rutgers.edu/pubs/publication.php?pid=E265>). As with all herbicides, read and follow all label instructions and precautions.