

Empire State Fruit and Vegetable Expo - 2012
Syracuse, NY

Berry Session: High Tunnel Production

Speakers: Marvin Pritts and Cathy Heidenreich, Department of Horticulture, Cornell University

Title of talk: 2012 Herbicide Update for Berry Crops

Summary:

Herbicide Resistance - How Does It Relate to My Berry Operation?

Preplant weed management is critical to successful berry crop production. Berry crops are often planted in succession after field crops as herbicide options for berries are greatly reduced compared to those for field crops. The possibility for resistant weeds to occur in new berry plantings exists in this instance. Berry crops are also a perennial cropping system. Introduction of herbicide resistant weeds into an established planting could have significant impact on weed management options and costs.

There are currently 5 different weeds occurring in NY that have herbicide resistant biotypes (individuals within a population). Lambsquarters (*Chenopodium album*), reported in 1977, was documented as having biotypes resistant to atrazine, cyanazine, and simazine herbicides. Lambsquarters is now the most widespread herbicide resistant weed in NY.

Scientists estimate there are 1,950 infested sites with an estimated acreage between 10,001 and 100,000 acres. The most recently discovered weed is Common Ragweed (1993) also documented as having biotypes resistant to atrazine, cyanazine and simazine.

Identifying Herbicide Resistant Weeds

Look for weeds that survive an herbicide application. Before assuming this is due to resistance development, rule out factors that affect herbicide efficacy such as problems in application, improper application timing, unfavorable weather conditions, and weed flushes after application of a non-residual herbicide.

Then ask the following questions:

1. Are other weeds listed on the product label controlled satisfactorily apart from the one remaining?
2. Did the same herbicide or another herbicide with the same mode of action fail in the same area of the field in previous years?
3. Was there extensive use of the same herbicide or herbicide mode of action year after year?

How Do I Manage Herbicide Resistance?

Monitoring: Weed identification and mapping in plantings may help to identify herbicide resistant populations before they become well established.

Cultural Management: Rotate crops. Plowing, disking, cultivating, mowing, hoeing, and hand pulling to reduce weed populations before they go to seed; spring and fall moldboard plowing to bury weed seed deeply after its shed.

Chemical Management: Rotate herbicides and herbicide classes or families. Use herbicides with shorter residuals.

HRAC Herbicide Classification

HRAC is an international herbicide classification system used in resistance management. The Weed Science Society of America (WSSA) also has system they developed for the same purpose. WSSA group numbers are the ones most commonly found on US labels. Both are based on the effect a product has on the target plant (mode of action); MOA classifications are the same for both systems. They each use a different numbering system.

Weed scientists strongly suggest growers use products with different MOAs in rotation to slow resistance development. For more information: <http://www.plantprotection.org/hrac/MOA.html>

Examples:

A blueberry grower has a problem with common groundsel in his highbush blueberry planting. Based on MOA's what products might he or she use in rotation to help slow resistance development?

Velpar (WSSA group no. 5)
Sanda (WSSA group no. 2)
Chateau WDG (WSSA group no. 14)

A raspberry grower has a problem with foxtail in his red raspberries. . Based on MOA's what products might he or she use in rotation to help slow resistance development?

Casoron 4G (WSSA group no. 20)
Poast 1.5EC (WSSA group no. 1)
Princep (WSSA group no. 5)

Herbicide Update 2012 - What's New? What's Changed?

EXPANDED CROPS/EXPANDED LABELS

Arrow EC EPA no. 66222-60

Active ingredient: clethodim Weeds managed: annual and perennial grasses

Mode of action: WSSA group 1, acetyl CoA carboxylase (ACCCase) inhibitor

Berry crops: (previously non-bearing Vaccinium and Rubus spp.)

Bushberry: Aronia Berry, Blueberry (Highbush), Chilean Guava, Cranberry (Highbush), Black Currant, Buffalo Currant, Native Currant, Red Currant, Elderberry, European Barberrry, Gooseberry, Honeysuckle (Edible), Huckleberry, Jostaberry, Juneberry (Saskatoon Berry), Salal, Sea Buckthorn, Cultivars and/or hybrids of these; Caneberry: Blackberry, Loganberry, Black Raspberry, Red Raspberry, Wild Raspberry, Cultivars, Varieties and/or hybrids of these; Cranberry, Strawberry.

Notes: PHI = 14 days bushberries, caneberries; strawberries; 30 days cranberries; Restricted use product; Post emergence application; Always use with 1% v/v finished spray volume COC.

Select Max EPA no. 59639-132

Active ingredient: clethodim Weeds controlled: annual and perennial grasses

Mode of action: WSSA group 1, acetyl CoA carboxylase (ACCCase) inhibitor

Berry crops (new supplemental label 8/2/11; previously non-bearing Vaccinium and Rubus spp.)

Bushberries: Highbush Blueberry, Aronia, Black and Red currant, Jostaberry, Gooseberry, Elderberry, Juneberry/Saskatoon; Caneberries: Blackberry, Red and Black Raspberry, cultivars, varieties, hybrids.

Notes: *PHI = 14 days*; Restricted use product; Post emergence application; NIS at 0.25% v/v.; Application on Long Island is restricted to no more than 32 fl oz (0.25 lb ai) per acre per season; *Supplemental label must be in possession of applicator at time of application.*

New Products

Sandea **EPA no. 81880-18-10163**

Active ingredient: halosulfuron-methyl Weeds managed: Certain broadleaf weeds and nutsedges

Mode of action: WSSA group 2, acetolactate synthase (ALS) inhibitor

Berry crops: Highbush blueberry

Notes: pre emergence and postemergence directed application.

Dual Magnum **EPA no. 100-816**

Active ingredient: s-metolachlor Weeds managed: most annual grasses and certain broadleaf weeds.

Mode of action: WSSA group 15, cell division (VLCFAS) inhibitor

Berry crops: Highbush Blueberry; Caneberry: Blackberry, red raspberry, and black raspberry

Notes: Restricted use product; Not for use on Long Island; Pre emergence banded application (DTH = 28); A copy of the SLN label (SLN NY-110004) must be in the possession of the user at the time of application.

Firestorm **EPA no. 82557-1-400**

Active ingredient: paraquat dichloride Weeds controlled: most annual broadleaves and annual grasses

Weeds suppressed: perennial

Mode of action: WSSA group 22, photosystem-I-electron diversion

Berry crops: Berries: Blackberry, Blueberry, Boysenberry, Currant, Elderberry, Gooseberry, Huckleberry, Loganberry, Raspberry, Strawberry

Notes: Restricted use product; Post emergence, directed spray