



Weed Control in Garlic, New York 2012

Summarized by Christy Hoepting, Cornell Cooperative Extension Vegetable Program

Organic Weed Control Options

Straw mulch for frost protection and weed control

Pros: provides OM, protects plants during winter, regulates moisture availability and soil temperature. **Cons:** May introduce weeds, may inhibit mechanical harvest, may complicate N banding.

Plastic mulch

Pros: very complete weed control, may cause plant to initiate bulbing sooner, warms soil in the spring. **Cons:** Must install irrigation, may complicate mechanical harvest, plastic waste.

Vinegar

Pros: Effective burndown of small weeds. **Cons:** Limited control of larger weeds, will damage garlic.

Flaming

Pros: Effective burndown of small weeds. Fun. **Cons:** Limited control of larger weeds, cannot be used in mulched bed systems.

Cultivation

Pros: Effective between-row control of various sized weeds. **Cons:** limited in-row control. Possibility of damaging crop – “tractor blight”.

Conventional Weed Control Options

Pre-plant or Pre-emergence to garlic, PRE-emergent to weeds

Prefar 4E

EPA No. 10163-200, Gowan

Active Ingredient: bensulide

Weeds controlled: selected annual grasses

Rates: 5-6 qts/acre, surface applied

Notes: Needs to be rained or irrigated within 36 hours to activate.

May be used thru or under plastic.

Pre-plant or pre-emergence to garlic, POST-emergent to weeds

Gramoxone SL (replacing Gramoxone Inteon)

EPA No. 100-1217, Syngenta

Active Ingredient: paraquat dichloride

Weeds controlled: burn down of most annual broadleaf and grass weeds, suppresses perennial weeds

Rates: Apply a single application of 2.5 to 4 pts/acre prior to crop emergence

Notes: Allow maximum weed and grass emergence prior to treatment, up to 1 to 6 inches.

For burn down of grass and cereal cover crops, especially wheat, apply Gramoxone Inteon prior to tillering or after the boot stage.

Pre-emergence to Garlic, PRE-emergent to weeds)

Prowl 3.3EC* and **Prowl H₂O**

EPA No. 241-337 (EC) and 241-418 (H₂O), BASF

Active ingredient: pendimethalin

Weeds controlled: annual grasses, some broadleaves like pigweed, Shepherd's purse, chickweed, suppression of nightshades, lambsquarters and velvet leaf

Rates:

Soil Type	Prowl 3.3EC	Prowl H₂O
Coarse	1.8 pts/acre	1.5 pts/acre
Medium	2.4 pts/acre	2.0 pts/acre
Fine	3.6 pts/acre	3.0 pts/acre
Maximum per crop	3.6 pts/acre	3.0 pts/acre

Caution: Do not irrigate more than 0.5 inches of water following application of Prowl. May cause stunting.

PHI: 45 days

***Note:** Prowl 3.3EC is also available in generics, such as the following:

Pendant 3.3EC – EPA No. 1381-216, Windfield Solutions

Stealth – EPA No. 34704-868, Loveland

Chateau WDG (available as a supplemental label)

EPA No. 59639-119, Valent

Active ingredient: flumioxazin

Weeds controlled: broadleaves including mustards, chickweed, nightshades, and some annual grasses

Crop stage: 3 days after planting garlic.

Rates: Apply up to 6 oz/acre. Do not apply more than 6 oz/acre during a single growing season.

Post-emergence to garlic, PRE-emergent to weeds

Prowl 3.3EC* and Prowl H₂O

EPA No. 241-337 (EC) and 241-418 (H₂O), BASF

Active ingredient: pendimethalin

Weeds controlled: annual grasses, some broadleaves like pigweed, Shepherd's purse, chickweed, suppression of nightshades, lambsquarters and velvet leaf

Crop Stage: Garlic must have 1-5 true leaves

Rates:

Soil Type	Rate	
	Prowl 3.3EC	Prowl H₂O
Coarse	1.8 pts/acre	1.5 pts/acre
Medium	2.4 pts/acre	2.0 pts/acre
Fine	3.6 pts/acre	3.0 pts/acre
Maximum per crop	3.6 pts/acre	3.0 pts/acre

Notes: May be applied as a split application at both PRE and POST timings

PHI: 45 days

***Note:** Prowl 3.3EC is also available in generics, such as the following:

Pendant 3.3EC – EPA No. 1381-216, Windfield Solutions

Stealth – EPA No. 34704-868, Loveland

Outlook

EPA No. 7969-156, BASF

Active ingredient: dimethenamid-P

Weeds controlled: annual grasses, yellow nutsedge, some broadleaves like pigweed, Shepherd's purse and chickweed, suppression of nightshades

Crop Stage: Garlic needs to have at least 2 leaves, application prior to 2-leaf stage may result in significant injury

Rates:

Coarse soils: 12-18 fl oz/acre

Medium soils: 18-21 fl oz/acre

Single application up to maximum rate or split applications of 6-11 fl oz, a minimum of 14 days apart

Caution: Stunting is more likely to occur when soil is cold and wet, use lower rates.

Outlook needs to be moisture-activated, weed control not as good when soil is dry.

PHI: 30 days

Dual Magnum (available as a 24(c) Special Local Needs Label)*

EPA No. 100-816, Syngenta

Active ingredient: metolachlor

Weeds controlled: annual grasses, yellow nutsedge, some broadleaves like pigweed, Hairy galingsoga, Shepherd's purse and nightshades

Crop Stage: Garlic needs to have at least 2 leaves

Rates: 0.67 – 1.33 pt/A. Use lower rates on coarse-textured soils and higher rates on fine-textured soils. May be applied as a band application. Make no more than one application per crop.

Caution: In general, the risk of injury is greater on lighter textured soils and with higher application rates. *Due to the risk of crop damage, all such use is at the end user/grower's risk and requires users to sign a waiver which releases Syngenta Crop Protection, Inc. from all liability and indemnification by the user and/or grower for failure to perform and crop injury, crop yield reduction, and/or crop loss from use of the product in accordance with the SLN labeling.

PHI: 60 days (mid-May for a mid-July harvest)

Post-emergence to garlic, POST-emergent to weeds

Goal 2XL and GoalTender

EPA No. 62719-424 (2XL) and 62719-447 (Tender), Dow AgroSciences

Active Ingredient: oxyfluorfen

Weeds controlled: broadleaf weeds, weak on: mustards, Pennsylvania smartweed and common groundsil, can burn back nutsedge

Crop Stage: Garlic should have at least 3 leaves. Do not apply to garlic grown for seed.

Rates:

	Goal 2XL	GoalTender
Rate	2-4 fl oz/acre	1-2 fl oz/acre
Maximum per crop	32 fl oz	16 fl oz

Multiple applications can be made per season up to the maximum rate per crop.

Notes: Weeds should be 2-4 inches and actively growing.

POST applications of Goal 2XL and GoalTender* may cause chlorotic leaf banding or lesions and stunting. Symptoms are more severe if garlic emerged under cool, wet, overcast or foggy weather. Injury is temporary.

Do not mix Goal 2XL or GoalTender* with oils, surfactants, liquid fertilizers or pesticides except as specified on the label.

Do not apply when plants are under stress.

PHI: 60 days

*In general, GoalTender is a safer formulation than Goal 2XL. In herbicide trials in onions, GoalTender caused less crop injury and was less likely to cause injury when used in a tank mix.

Buctril*

EPA No. 264-437, Bayer CropSciences

Active Ingredient: bromoxynil

Weeds controlled: broadleaf weeds, excellent on Pennsylvania smartweed and ragweed, weak on pigweed, suppresses Canada Thistle

Crop Stage: after emergence, but before 12 inches in height

Rates: apply a single application of 1.5 to 2 pts/acre

Notes: Buctril may cause temporary leaf burn.

Applications should be made to dry foliage.

Apply to susceptible weeds up to 4 leaf stage, 2 inches in height or 1 inch diameter, whichever comes first.

PHI: 112 days, 60 days in muck soils

*Note: also available as several generics such as:

Maestro 2EC – EPA No. 71368-29, Nufarm

Brox 2EC – EPA No. 42750-48, Albaugh Inc.

Broclean – EPA No. 34704-891, Loveland

Select Max* and Select EC**

EPA No. 59639-132, Valent

Active Ingredient: clethodim

Weeds controlled: annual and perennial grasses including quackgrass

Rates:

	Select Max	Select EC
Rates:	9-16 fl oz/acre for annual grasses 12-32 fl oz for perennial grasses	6-16 fl oz/acre
Maximum per season:	64 fl oz per season	
Adjuvant:	Apply with 0.25% v/v Non-ionic surfactant (NIS)	Apply with crop oil concentrate (COC) 1% v/v
Notes:	Make repeat applications a minimum of 14 days apart	Addition of liquefied fertilizer is not recommended
PHI:	45 days	45 days
Generics:	*Intensity – EPA No. 34704	**Arrow 2EC – EPA No. 66222-60 Amtide Clethodim 2EC – EPA No. 83851-8 Section 2EC – EPA No. 1381-204 Others...

Poast

EPA No. 7969-58, BASF

Active Ingredient: sethoxydim

Weeds controlled: annual and perennial grasses

Rates: Apply up to 1.5 pts/acre per application for a maximum of 4.5 pts/acre per season with a minimum of 14 days between applications

Notes: Do not cultivate 5 days before or 7 days after applying Poast.

Always use with a crop oil concentrate (COC) or methylated seed oil (MSO).

When temperatures exceed 90°F and relative humidity is greater than 60%, or anytime when temperatures exceed 100°F, Poast + adjuvants should be used with caution to avoid potential leaf injury.

PHI: 30 days

Fusilade DX

EPA No. 7969-58, Syngenta

Active Ingredient: fluazifop-P-butyl

Weeds controlled: annual and perennial grasses

Rates: No more than 48 fl oz per acre

Notes: Always use with one of the following: i) crop oil concentrate (COC) at 0.5 to 1% v/v, ii) nonionic surfactant (NIS) with at least 75% surface-active agent at 0.25 to 0.5% v/v, or iii) other adjuvants – see label.

Apply to actively growing grasses at the recommended growth stages – see label.

PHI: 45 days