

UGA Weed Management Programs for Broccoli, Cabbage, and Cauliflower in 2023

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Weeds compete with the crop for light, water, nutrients, and physical space, harbor insects and diseases, and decrease harvest efficiency while contaminating machine harvested commodities. Nutsedge is the most difficult weed to control in these crops, avoid fields with heavy infestations. Wild radish is also challenging; thus, transplant production using the *residual* of Goal (oxyflourfen) herbicide for assistance is strongly encouraged.

Cultural weed management practices including intelligent crop rotation and stale seedbed techniques can be beneficial while **mechanical control** has been, and will continue to be, a primary method of effective weed control. Deep turning the land and burying troublesome weed seed can be very effective for many weed species assuming the ground has not been turned in the least three years. Many small-seeded species, like pigweed and purslane, can only emerge in the top few inches of the soil profile and when buried lose viability over time. In-row cultivation is also very effective but will destroy herbicide residual activity.

Herbicidal control tactics, albeit far from perfect, have improved in recent years with potential programs discussed in the tables below. Previous herbicide history should be determined prior to planting as many herbicides used in rotational crops will carry over to damage these crops. *Also, remember greater herbicide injury will occur when applied prior to, during, or just after cold and/or wet conditions. Follow ALL label requirements.*

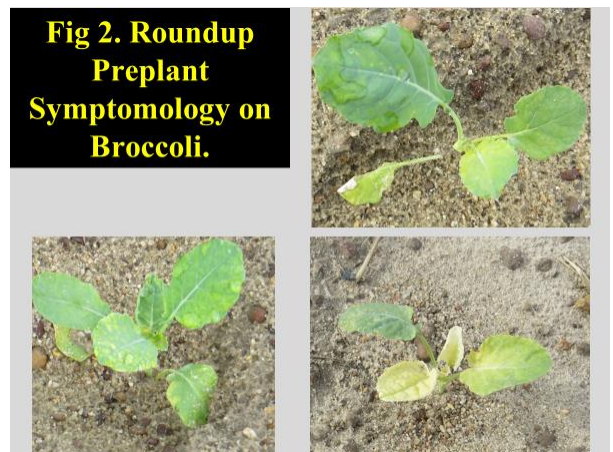
Transplant Bareground Production:

Step 1.	Remove weeds with tillage, Roundup*, or Gramoxone* prior to planting.
Step 2.	Incorporate Treflan 2" deep into moist soil at 10-16 oz/A; lower rate on light soils with intense irrigation.
Step 3.	Prepare land for planting, apply Goal 2XL, irrigate for ideal planting environment, wait at least 3 days (≥ 2 sunny days). Include Gramoxone* if weeds have germinated. Planting method influences Goal rate and injury (Fig 1). For the hole punch hand-plant method, Goal 2XL rate should be 8-16 oz/A with lower rates on sands with intense irrigation or when cold and wet. For the mechanical planting method, rates of 16-20 oz/A have shown excellent crop safety. <i>Transplants ≥ 5 weeks of age are most tolerant to Goal and Treflan.</i>
Step 4.	About 10 days after transplanting when plants are growing normally , apply Dual Magnum topically at 8-12 oz/A. If plowing, plow first followed by Dual Magnum and then irrigate for activation.
Step 5.	Apply Select Max at 9 oz/A without adjuvant when grasses are 3"; goosegrass 1" or less.
Step 6.	Stinger at 0.25-0.5 pt/A can be applied up to 30 days before harvest. <u>Review rotational restrictions closely</u> ; effective on a limited weed spectrum including clover, cocklebur, and ragweed but will not control radish.
Step 7.	Roundup, Aim, Prowl, and Dual Magnum are available for use in row middles; avoid contact with the crop.

*Apply Gramoxone ≥ 24 hr before planting. Apply no more than 30 oz/A of Roundup PowerMax 3 (or equivalent) in a single application and then irrigate $\frac{1}{2}$ " AND wait ≥ 7 days between application and transplanting to avoid injury (Figure 2).

Note 1: Command 3 ME is labeled preplant incorporated for broccoli transplants only (10.7 fl oz)

Note 2: Obtain Dual Magnum labels from <https://www.syngenta-us.com/labels/indemnified-label-login>



Transplant Mulch Production (2nd, 3rd crop etc.):

Step 1.	Remove weeds with Gramoxone* and Roundup** prior to planting. The most effective program would be to apply Roundup followed by Gramoxone 5-7 days later (herbicides must be washed from mulch, see footnote).
Step 2.	Apply Goal 2XL and wait ≥ 5 days (with ≥ 2 sunny days) after application before punching <u>new</u> holes and transplanting (Fig 3). <i>A rainfall after application before planting reduces injury potential.</i> Goal 2XL at 8-12 oz/A is ideal for most fields; plants landing in “old” holes can be severely damaged.
Step 3.	About 10 days after transplanting when plants are growing normally , apply Dual Magnum topically at 8-12 oz/A. If plowing, plow first followed by Dual Magnum and then irrigate for activation.
Step 4.	Apply Select Max at 9 oz/A without adjuvant when grasses are 3”, goosegrass” or less.
Step 5.	Stinger at 0.25-0.5 pt/A can be applied up to 30 days before harvest. <u>Review rotational restrictions closely</u> ; effective on a limited weed spectrum including clover, cocklebur, and ragweed but will not control radish.
Step 6.	Row middle before planting: 1) Dual Mag. + Chateau + Roundup (most effective) or 2) Dual Mag. + Goal 2 XL up to 24 oz/A + Roundup are excellent options. Avoid spray contacting the mulch surface. Rainfall ≥ 0.25 ” after application and before planting is needed. For Goal, wait ≥ 3 days (≥ 2 sunny) after application before planting. Row middle in-crop: Roundup, Aim, Prowl, and Dual Magnum are options; avoid contact with the crop.

*Gramoxone: apply ≥ 24 hr before planting and wash mulch before planting (0.5” of rain/overhead irrigation in single event).

Roundup: apply no more than 30 oz/A of Roundup PMAX 3 (or equivalent) in a single application and wait ≥ 3 days before transplanting **OR make a single application between 30 and 60 oz/A and wait ≥ 10 days **AND** allow for a single rainfall/overhead irrigation of ≥ 0.5 ” between application and planting (Figure 4); punch new transplant holes ≥ 6 ” from old holes or torn mulch.

Note: Obtain Dual Magnum labels from <https://www.syngenta-us.com/labels/indemnified-label-login>; Chateau labels must be obtained from the Georgia Fruit and Vegetable Growers Association.

Fig 3. Goal Symptomology on Broccoli.

Rates of Goal in these photos exceeded label use rates!

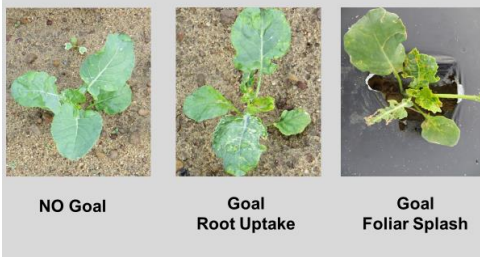


Fig 4. Herbicides must be removed from mulch!



Seeded Bareground Production:

Step 1.	Remove weeds with tillage, Roundup*, or Gramoxone prior to planting.
Step 2.	Incorporate Treflan 2” deep into moist soil at 10-16 oz/A; lower rate on lights soils and intense irrigation. Do NOT use Goal herbicide in seeded production!
Step 3.	Once plants have reached 3” and are growing normally, apply Dual Magnum topically at 8-12 oz/A. If plowing, plow first followed by Dual Magnum and then irrigate for activation.
Step 4.	Apply Select Max at 9 oz/A without adjuvant when grasses are 3”, goosegrass 1” or less.
Step 5.	Stinger at 0.25-0.5 pt/A can be applied up to 30 days before harvest. <u>Review rotational restrictions closely</u> ; effective on a limited weed spectrum including clover, cocklebur, and ragweed but will not control radish.

*Roundup: apply no more than 30 oz/A of Roundup PowerMax 3 (or equivalent) in a single application; $\frac{1}{2}$ ” of rainfall/overhead irrigation and ≥ 3 days between application and seeding are suggested.

Note: Obtain Dual Magnum labels from <https://www.syngenta-us.com/labels/indemnified-label-login>

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