

2020 Weed Control Programs for Broccoli, Cabbage, and Cauliflower

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Crop rotation, tillage, and a sound herbicide program are all often critical components for long-term success. This circular focuses on developing sound herbicide programs while minimizing crop injury for the following production systems: 1) transplanting into bareground, 2) seeding into bareground, and 3) transplanting into mulch. Transplant production is suggested with heavy weed infestations, especially when wild radish is present. Specific production practices will likely alter weed and crop responses.

TRANSPLANT BAREGROUND PRODUCTION: A systems approach using Treflan, Goal 2XL, Dual Magnum, and Select Max can be extremely effective in the management of weeds while minimizing injury.

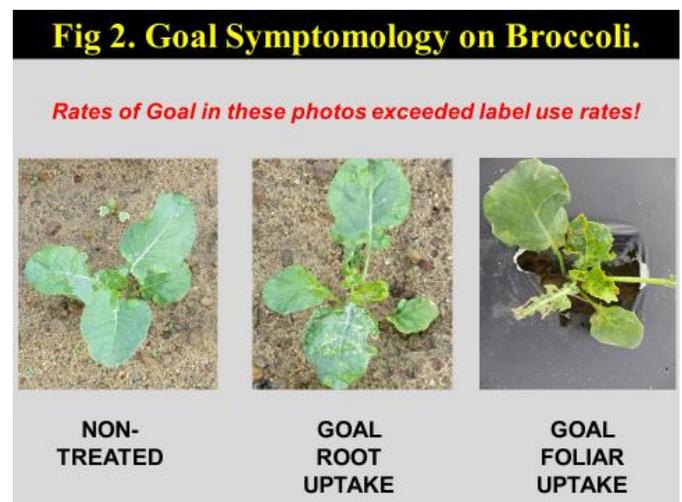
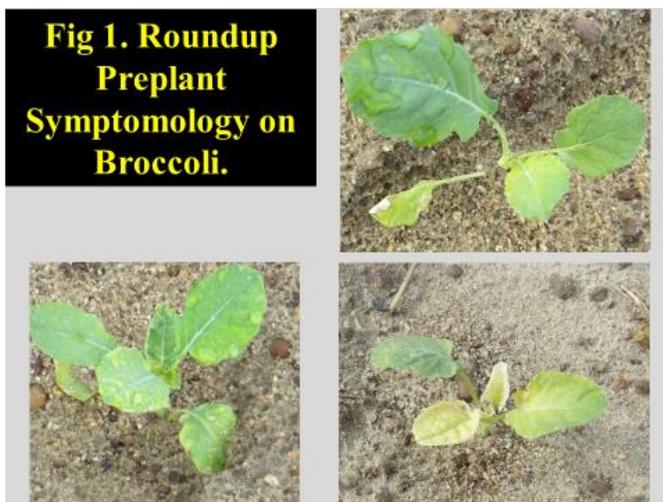
Step 1. Deep turning the land is often an effective approach to reduce the number of weeds present at planting, especially pigweeds and purslane. Regardless of tillage approach, make sure no weeds are emerged at planting. Gramoxone can be applied at least 24 hr prior to transplanting (REI). Roundup can be used at 1.13 lb ae/A (Roundup PowerMax at 32 oz/A) or less; apply 7 or more days before planting and irrigate prior to planting. Damage from Roundup is noted in Figure 1.

Step 2. Incorporate Treflan 2 inches deep into a moist soil at 10 to 16 oz/A; use lower rates on lighter soils, in an intense irrigation program, and/or in a harsh environment. Transplants are more tolerant than seeds.

Step 3. After land is prepared for planting, apply Goal 2XL, irrigate for ideal planting environment, wait at least 3 days (**at least two days must be sunny**), and then punch holes and transplant. Goal 2XL rate should be 8 to 16 oz/A; lower rates on sands with intense irrigation or when cold and wet when damage is most likely (Fig 2). Transplants at least 5 weeks of age are most tolerant. Goal is a very effective herbicide for controlling radish, pigweeds, purslane, primrose, and other broadleaf weeds (Figure 4); include Gramoxone or Roundup when applying Goal 2XL if weeds have germinated (see step 1 regarding Roundup or Gramoxone applications).

Step 4. About 10 days after transplanting **when plants are growing normally**, apply Dual Magnum topically at a rate of 8 to 12 oz/A. Delay Dual Magnum application if plants are stressed.

Step 5. Apply Select Max at 9 oz/A without adjuvant when grasses are 3 inches or less.



SEEDED BAREGROUND PRODUCTION: Seeded production offers greater challenges in weed control and poses greater crop injury potential as compared to transplants. *In fact, it is nearly impossible to manage a severe radish infestation in this production system.* The program below may be helpful but again for fields heavily infested with weeds, especially wild radish, transplant production using Goal is strongly encouraged.

Step 1. Incorporate Treflan 2 inches deep into a moist soil at 10 to 16 oz/A with lower rates used on lighter soils, in an intense irrigation program, and/or in a harsh environment.

Step 2. Once plants have reached 3 inches **growing normally**, apply Dual Magnum topically at 8 to 12 oz/A. If plowing, make sure to plow prior to the Dual Magnum application.

Step 3. Apply Select Max at 9 oz/A without adjuvant when grasses are 3 inches or less.

TRANSPLANT MULCH PRODUCTION: A systems approach using Goal 2XL, Dual Magnum, and Select Max can be extremely effective in the management of weeds while avoiding unacceptable crop injury.

Step 1. Control emerged weeds with Roundup and Gramoxone prior to planting (Roundup followed by Gramoxone 5 to 7 days later is outstanding). Roundup applications of 1.13 lb ae/A (Roundup PowerMax at 32 oz/A) or less can be applied 3 or more days ahead of transplanting; Gramoxone should be applied at least 24 hr prior to planting. Both herbicides must be washed from mulch with single 0.5" event (Fig 3).

Step 2. Apply Goal 2XL prior to punching new holes and wait at least 5 days (**at least two days must be sunny**) after application **before** punching holes and transplanting. In most situations, Goal 2XL at 8 to 16 oz/A is in order although rate can be increased to 24 oz/A for severe weed infestations (injury from high rates expected, Fig. 2). Goal is a very effective herbicide for controlling pigweeds, purslane, primrose, radish, and other broadleaf weeds (Fig 4).

Step 3. About 10 days after transplanting **when plants are growing normally**, apply Dual Magnum topically at 8 to 12 oz/A. Delay Dual Magnum application if plants are stressed.

Step 4. Apply Select Max at 9 oz/A without adjuvant when grasses are 3 inches or less.

Step 5. For row middle applications prior to plant: 1) Dual Mag. + Goal + Roundup or 2) Dual Mag. + Chateau + Roundup are excellent options. Avoid contacting the mulch top with either mixture. For Goal mix, wait at least 3 days (at least 2 sunny) after applying Goal before planting. For Valor, a rainfall between application and planting is needed.

Figure 3. Roundup must be removed from the mulch.



Roundup on mulch

No Roundup

Figure 4. Goal is very effective on many problem weeds.



Pigweed

No Goal

Goal preplant

Critical Thinking Points To Avoid Crop Injury!

1. Goal Tender is available but has not been studied like the 2XL formulation. DO NOT use Goal in seeded production.
2. Use conservative herbicide rates when planting on sandy soil with low organic matter and/or with intense irrigation.
3. Dual Magnum topical application should be applied when crop is growing normally and not overly stressed.
4. *Herbicides will cause greater injury when applied prior to, during, or just after cold conditions.*
5. In bareground transplant production, do not disturb Goal application with tillage.
6. **Dual Mag.** is a 3rd party registration. Obtain label from <https://www.syngenta-us.com/labels/indemnified-label-login>
7. **Chateau** is a 3rd party registration. Obtain label from Georgia Fruit and Vegetable Growers Association.
8. *Avoid fields heavily infested with nutsedge, no control options exist other than plowing once planted.*
9. Always follow label restrictions of each product used; read label for potential injury or carryover concerns.
10. Although growers prefer to spray Treflan preemergence after seeding or prior to transplanting and then irrigate, this use pattern is not currently labeled thus it cannot be recommended.



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