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Watermelon Weed Control Programs for 2023

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Crop rotation, tillage, and a sound herbicide program are all critical components for a successful watermelon production system. Minimizing crop injury while maximizing weed control and yield will require experience and knowledge of herbicides used and how each production practice influences the overall weed management system. Potential weed management programs for three common production systems are discussed below.

A Liberty Herbicide label for watermelon is hopeful during 2023. The herbicide pattern will be very specific to avoid crop injury! Check with your local agent for the status of this label.

Optogen is a new watermelon herbicide; more research is needed but the most logical use may be as a row middle layby application. The product is expensive with carryover restrictions to many crops; try on limited acres.

TRANSPLANT SMALL-BED MULCH PRODUCTION:

Step 1. Under mulch: Metam sodium (Vapam, others) is, by far, the most effective tool to control small-seeded weeds (≥ 50 GPA broadcast) and nutsedge (75 GPA broadcast); plant only after metam has completely dissipated. Although less effective, Reflex, Sinbar, and/or Sandea can be applied under mulch as long as the treated bed is not disturbed after application with mulch and/or drip installation. For Sandea, delay planting at least 7 days after application.

Step 2. Over Mulch: After proper installation of mulched beds (Fig 1 and 2), before punching transplant holes, and if herbicides were not applied under mulch, broadcast Reflex (12 oz/A), Sinbar (3-4 oz/A), and Curbit (2 pt/A) over mulch and bare soil. Gramoxone* or Roundup* can be included to control emerged weeds. *A single 0.5" rain/irrigation event must occur after applying all herbicides and prior to punching holes for transplanting.*

Step 3. In-crop: Apply Select Max at 9 oz/A without adjuvant when grasses are ≤ 3"; goosegrass < 1". 14 day PHI.

Step 4. Row Middle: Dual Magnum (16 oz/A), Sandea (0.75 oz/A), Treflan (1-1.5 pt/A), and Prowl H20 (2 pt/A) can be applied in row middles for additional residual control, avoid crop contact. Sandea plus surfactant would also control emerged nutsedge and radish. Roundup or Gramoxone can be applied with hoods; avoid contact with the crop.

**Gramoxone must be applied >24 hr before planting. Roundup at ≤ 1.13 lb ae/A (RU PowerMax 3 = 30 oz/A) must be applied ≥ 3 days before transplanting or if applied ≥ 10 rates can be increased up to 2.25 lb ae/A.*

Note: *Curbit is only labeled for use between watermelon rows in transplant production, do not apply under mulch.*

Figure 1. Mulch must be free of holes and beds must be formed allowing irrigation/rain to wash herbicides off mulch.

Figure 2. Poor bed formation allows herbicides to concentrate on mulch which can cause significant injury.

TRANSPLANT BAREGROUND PRODUCTION:

Step 1. Prepare land for transplanting, but do not punch transplant holes. Broadcast Sinbar (3-4 oz/A) and/or Reflex (12 oz/A) + Gramoxone > 24 hr before planting. Roundup at ≤ 1.13 lb ae/A (RU PMAX 3 = 30 oz/A) and/or Sandea (0.5-0.75 oz/A) can also be used if they are applied 7 or more days before planting.

Step 2. Irrigate to activate herbicides and to move them into the soil, thereby reducing injury potential from splash.

Step 3. Punch hole and transplant.

Step 4. After planting, irrigate to maintain a perfect stand but ***limit irrigations*** to as few as possible during first 3 wks.

Step 5. Apply Select Max at 9 oz/A without adjuvant when grasses are ≤ 3"; goosegrass < 1". 14 day PHI.

Step 6. Dual Magnum (16 oz/A), Sandea (0.75 oz/A), Curbit (2 pt/A), Treflan (1-1.5 pt/A), and Prowl H20 (2 pt/A) can be applied in row middles for additional residual control, avoid crop contact. Sandea plus surfactant would also control emerged nutsedge and radish. Roundup or Gramoxone can be applied with hoods; avoid contact with the crop.

Note: *Curbit is only labeled for use between watermelon rows in transplant production, do not apply pre-transplant.*

SEEDED BAREGROUND PRODUCTION:

Step 1. After seeding watermelon **into a weed-free** environment **with ideal moisture**, apply Sinbar (3-4 oz/A), Reflex (12 oz/A), and/or Curbit (12-20 oz/A); include Gramoxone if weeds are emerged.

Step 2. Lightly irrigate at least 24 hours after planting but also at least 36 hours prior to emergence, thereby activating herbicides while preventing their movement down around the seed during germination. Avoid irrigation during emergence if possible! After emergence, irrigate for a perfect stand but **limit irrigations** to as few as possible during the 1st 3 weeks.

Step 3. Apply Select Max at 9 oz/A without adjuvant when grasses are ≤ 3"; goosegrass < 1". 14 day PHI.

Step 4. Dual Magnum (16 oz/A), Sandea (0.75 oz/A), Treflan (1-1.5 pt/A), and Prowl H20 (2 pt/A) can be applied in row middles for additional residual control, avoid crop contact. Sandea plus surfactant would also control emerged nutsedge and radish. Plowing destroys residual herbicide activity so plow first and then apply residual herbicides. Roundup or Gramoxone can be applied with hoods; avoid contact with the crop.

CRITICAL THINKING POINTS FOR ALL PRODUCTION SYSTEMS!

1. **The # 1 weed control mistake made by watermelon growers is applying the grass herbicide too late.**
2. Deep turning the ground prior to production should reduce weed emergence, especially pigweed and purslane.
3. **Obtain Dual Mag. & Reflex** 3rd party labels at https://www.syngenta-us.com/labels/indemnified-label-login
4. Reflex & Sinbar pose carryover concerns to certain crops; when under mulch, carryover is greatly enhanced (Fig 3).
5. Use conservative herbicide rates on sandy soils with low organic matter and/or when using numerous irrigations early.
6. **Research in 2022 noted 0.25" irrigation did not completely remove Sinbar from mulch, use 0.5" irrigation.**
7. Neither Reflex nor Sinbar should ever contact watermelon tissue!
8. Metam sodium (Vapam, etc.) requires a fumigant management plan (FMP).
9. Always follow label restrictions of each product used; also read label for potential injury or carryover concerns.

Figure 3. Carryover risk with Reflex under mulch greatly increased.

Figure 4. Watermelon/Cotton Intercropping.

WATERMELON/COTTON INTERCROPPING (Figure 4):

1) Do not use Sinbar as it will kill cotton.
2) Sandea is not labeled for cotton and cotton stunting is expected.
3) An effective system might include the following: Treflan* + Reflex preplant broadcast over mulch and soil, wash mulch prior to punching holes for transplanting, transplant melons, plow row middles (if needed), plant cotton into weed-free melon row middles just prior to melon vines leaving mulch top, and apply Treflan or Prowl H20 as a banded preemergence application to cotton and as a row middle spray to melons. If cotton emerges prior to melon vines reaching row middles, one can apply Dual Magnum as a banded overtop application to emerged cotton. Select Max may be applied topically to melons and cotton.

**Georgia's Treflan label allowing preplant applications for intercropping expired, efforts are underway to update this label. Check with your extension agent for the latest details. Do not apply Treflan in this manner until a label is obtained.*

Circular # **DATE:** *Jan 1, 2023*

Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, The University of Georgia College of Agricultural and Environmental Sciences and the U.S. Department of Agriculture cooperating.
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