

Crop rotation, tillage, and a sound herbicide program all influence success. This circular focuses on developing sound herbicide programs while minimizing crop injury when 1) transplanting into small-bed flat mulch, 2) transplanting into bareground, and 3) seeding into bareground. Large raised-bed mulch production can be found on the fumigation circular at gaweed.com or at your local Extension office. Growers must understand that their specific production practices will alter weed/crop responses.

TRANSPLANT SMALL-BED MULCH PRODUCTION:

Step 1. Under mulch: If significant weed infestations are expected, the addition of metam sodium (Vapam, others) for the control of small-seeded grass and broadleaf weeds (≥ 50 GPA broadcast) and nutsedge (75 GPA broadcast) will be the most effective option; plant only after metam has completely dissipated. If herbicides (although less effective) are preferred under mulch, Reflex, Sinbar and/or Sandea can be applied; treated bed must not be disturbed when laying mulch and/or drip. For Sandea, delay planting at least 7 d after application; no planting interval needed for Reflex or Sinbar. *Carryover potential from Sinbar and Reflex under mulch is much greater than when applied on bare soil.*

Step 2. Over Mulch: After laying mulch over a bed that facilitates herbicidal removal with washing and before punching transplant holes (Figures 1 and 2), broadcast Reflex (12 oz/A), Sinbar (3-4 oz/A), and Curbit (1.5-2 pt/A) over mulch and bare soil. Include Gramoxone or Roundup to control emerged weeds. Herbicides can be applied any time prior to planting except for Roundup which requires 3 or more days before transplanting at 1.13 lb ae/A (Roundup PowerMax at 32 oz/A) and 10 or more days for higher rates. A single 0.5" rain/irrigation event must occur after applying herbicides and prior to transplanting.

Step 3. In-crop: Apply Select Max at 9 oz/A without adjuvant when grasses are ≤ 3 "; goosegrass < 1.5 ". 14 day PHI.

Step 4. Row Middle: Dual Magnum (12-16 oz/A), Sandea (0.75 oz/A) and/or Treflan (1-1.5 pt/A) can be applied to row middles for additional residual control and control of emerged nutsedge. Plowing will destroy residual weed control; thus, if needed one may want to plow prior to applying a layby residual herbicide mixture in the row middles. Hooded spray applications could include Roundup or Gramoxone although drift damage to the crop can be severe.

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 puddle which can cause significant injury.



TRANSPLANT BAREGROUND PRODUCTION:

Step 1. Prepare land for transplanting, but don't poke transplant holes. Broadcast Sinbar (3-4 oz/A) and/or Reflex (12 oz/A) + Gramoxone any time prior to planting. Roundup can be used but must be sprayed 7 days prior to planting at no more than 1.13 lb ae/A (RU PMAX =32 oz/A). Sandea (0.67 oz/A) can be used if applied 7 day prior to planting.

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

Step 3. Poke 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 < 1.5 ". 14 day PHI.

Step 6. Dual Magnum (12-16 oz/A), Sandea (0.75 oz/A) and/or Treflan (1-1.5 pt/A) can be applied to row middles for additional residual control and control of emerged nutsedge. Plowing will destroy residual weed control. Hooded spray applications could include Roundup or Gramoxone although drift damage to the crop can be severe.

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 (12-16 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 $\leq 3''$; goosegrass $< 1.5''$. 14 day PHI.

Step 4. Dual Magnum (12-16 oz/A), Sandea (0.75 oz/A) and/or Treflan (1-1.5 pt/A) can be applied to row middles for additional residual control and control of emerged nutsedge. Plowing will destroy residual weed control; thus, if needed one may want to plow prior to applying a layby residual herbicide mixture in the row middles. Hooded spray applications could include Roundup or Gramoxone although drift damage to the crop can be severe.

OTHER CRITICAL THINKING POINTS!

1. Deep turning the ground prior to production should reduce weed emergence, especially pigweed and purslane.
2. Obtain Dual Mag. & Reflex 3rd party registrations at <https://www.syngenta-us.com/labels/indemnified-label-login>
3. Reflex & Sinbar pose carryover concerns to certain crops; when under mulch, carryover is greatly enhanced (Fig 3).
4. Use conservative herbicide rates on sandy soils with low organic matter and/or when using numerous irrigations.
5. Dual Magnum should not be applied within 6" of the transplant root ball or seed; do not apply within 60 d of harvest.
6. Reflex should never contact emerged watermelon foliage!!
7. Treflan can be directed or applied in row middles after the crop has 3 to 4 true leaves.
8. Metam sodium (Vapam, etc.) requires a fumigant management plan (FMP).
9. Always follow label restrictions of each product used; 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 may occur.
- 3) An effective system might include the following: Treflan + Reflex preplant broadcast over mulch and soil, wash mulch prior to 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 as a banded PRE application to cotton while directing 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 without directly contacting melon vines; DO NOT apply Dual Magnum to cotton that has not emerged. Select Max may be applied topically to melons and cotton.