Weed Management in Celery[1]

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Weed control is important in successful celery production. Early weed control is especially critical. Competition from weeds such as amaranth during the first 4 weeks of the crop in the field can result in a 30%–40% reduction in quality grades at final harvest.

Dual Magnum® has a third-party registration for use in Florida. For legal use of herbicides, the grower (applicator) must obtain the label for celery from the third-party registrant (in this case TPR, Inc., Orlando).

Linuron (Lorox®) or prometryn (Caparol®) do a good job of controlling most of the young emerged annual weeds in the field. Both of these have specific timings for application to the crop as well as the weeds.

Sethoxydim (Poast®) and clethodim (Select®) control the grasses emerged in the crop if applied properly. Poast® may be applied up to 14 days before harvest. Select® has a 30-day postharvest interval.

Cultivation is an effective control method for weeds in celery, especially young plants. Care must be taken, however, to not prune the crop's roots. Research has shown that celery quality can be reduced if mechanical cultivation and/or hand hoeing are not done properly.

Use only labeled herbicides in the proper formulation. Read the label carefully for the proper rate and timing for each application. Table 1 includes rates and brief remarks for herbicides registered for preplant/preemergence application. Table 2 includes herbicides registered for posttransplant/postemergence in celery.

Celery is the representative commodity in the leaf petioles subgroup of the leafy vegetables EPA group. Cardoon, Chinese celery, celtuce, fennel, rhubarb, and Swiss chard are also in this group. Labels for celery may sometimes include one or more of these other petiole vegetables. See recommendations and labels.

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Table 1. Preplant/preemergence chemical weed control in celery.

Active ingredient lb. a.i./A	(Trade name) amount of product/A	MOA code	Weeds controlled/remarks
Bensulide 5–6	(Prefar®) 4 E 5–6 qt.	8	Broadleaf and grass weeds. Incorporate mechanically 1–2 inches deep or with irrigation 2–4 inches deep.
Carfentrazone Up to 0.031	(Aim®) 2 EC or 1.9 EW Up to 2 fl. oz.	14	Emerged broadleaf weeds. Apply as a preplant burndown for emerged broadleaf weeds. Use a crop oil concentrate or nonionic surfactant at recommended rates. May be tank mixed with other herbicides.
Glyphosate	(Various formulations) Consult label	9	Emerged broadleaf and grass weeds. Apply as a preplant burndown. Consult label for individual product directions.
S-metolachlor 0.95–1.26	(Dual Magnum®) 1.0–1.33 pt.	15	Broadleaf and grass weeds and nutsedge. Label is a third-party registration (TPR, Inc.), and authorization and waiver agreements must be obtained prior to use. Rates are based on organic matter.
Pelargonic acid	(Scythe®) 4.2 EC 3–10% v/v		Emerged broadleaf and grass weeds. Apply as a preplant burndown treatment. Scythe® is a contact and nonresidual herbicide and can be tank mixed with residual preemergence herbicides to lengthen control.
Pyraflufen 0.0008-0.003	(ET herbicide/defoliant) 0.5–2.0 fl. oz.	14	Broadleaf and grass weeds. Burndown preplant application 1 day before planting. Include a NIS or COC in spray solution
Trifluralin 0.5	(Treflan®, Trifluralin) 4EC 1 pt. (Treflan®, Trifluralin) 10G 5 lb.	3	Annual broadleaf and grass weeds. Do not apply to muck soils. Mineral soils with 2%–5% organic material, apply 0.75 lb. a.i./A. Incorporate within 8 hr. of application to a depth of 4 in. or less.Incorporate 4 inches or less within 8 hours of application.

Table 2. Postemergence chemical weed control in celery.

Active ingredient lb. a.i./A	(Trade name) amount of formulation/A	MOA code	Weeds controlled/remarks
Carfentrazone Up to 0.31	(Aim®) 2 EC or 1.9 EW Up to 2 oz.	14	Emerged broadleaf weeds. Apply as hooded application to row middles only. Use a crop oil concentrate (COC) or nonionic surfactant (NIS) at recommended rates. May be tank mixed with other herbicides. Do not exceed 6.1 fl. oz. per cropping season. PHI 0 days.
Clethodim 0.09–0.13 0.07–0.13	(Select®, Arrow®) 2 EC 6–8 fl. oz. (Select Max®) 1 EC 9–16 fl. oz.	1	Perennial and annual grass weeds. In fields with heavy grass pressure or larger grass weeds, use higher rates or repeat applications 14 days apart. Use a crop oil concentrate at 1% v/v in the finished spray volume. Nonionic surfactant with Select Max. PHI 30 days.
Linuron 0.5–1.0	(Lorox® DF) 50 DF 1–2 lb.	7	Broadleaf and grass weeds. Apply after transplanting but before celery is 8 in. tall. Do not apply when temperatures exceed 85F nor as a tank mix with surfactants, nitrogen, or fertilizer solution. PHI 45 days.
Pelargonic acid	(Scythe®) 4.2 EC 3–10% v/v	27	Emerged broadleaf and grass weeds. Direct spray to row middles with hooded or shielded sprayer. Product is a contact, nonselective herbicide with no residual control. May be tank mixed with several soil residual compounds.
Prometryn 0.8–1.6	(Caparol®) 4 L 1.6–3.2 pt.	5	Broadleaf weeds. Apply one application during the 2 to 6 wk. period after transplanting. Weeds should not exceed 2 in.
S-metolachlor 0.95–1.26	(Dual Magnum®) 1.0–1.33 pt.	15	Broadleaf, grass weeds and nutsedge. Label is a third party registration (TPR, Inc.) and authorization and waiver agreements must be obtained prior to use. Rates are based on organic matter.
Sethoxydim 0.28	(Poast®) 1.5 EC 1.5 pt.	1	Emerged grass weeds. A maximum of 3 pt./A per season. Include a crop oil concentrate. Unsatisfactory results may occur if applied to grasses under stress. PHI 30 days.

Table 3. Chemical weed control in celery seedbeds.

Active ingredient lb. a.i./A	(Trade name) amount of formulation/A	Weeds controlled/remarks
Prometryn 0.6–0.8	(Caparol®) 4 L 1.2–1.6 pt.	Broadleaf weeds. Apply once per year to seedbeds. Apply after celery has two to five true leaves. Apply after seedbed covers have been removed for at least 1 week.