

Weed Management in Cole Crops

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Preemergence Herbicides Labeled for Broccoli, Cabbage, and Cauliflower

Herbicide Trade name	Mode of Action	WSSA (HRAC)
Prowl H ₂ O	Mitosis inhibitor	3 (K ₁)
Treflan	Mitosis inhibitor	3 (K ₁)
Command	Pigment inhibitor	13 (F ₃)
GoalTender	PPO inhibitor	14 (E)
Spartan	PPO inhibitor	14 (E)
Devrinol	VLCFA inhibitor	15 (K ₃)
Dual Magnum	VLCFA inhibitor	15 (K ₃)

Postemergence Herbicides Labeled for Cole Crops

Herbicide Trade name	Mode of Action	WSSA (HRAC)
Poast	ACCCase inhibitor	1 (A)
Select Max	ACCCase inhibitor	1 (A)
GoalTender	PPO inhibitor	14 (E)
Stinger	Synthetic auxin	4 (O)

Preemergence Herbicides for Cole Crop Production

Herbicide	Rate, per Acre	Comments
Prowl H ₂ O (pendimethalin)	1 – 2.1 pt (0.475 – 0.5 lb ai)	May stunt plants and cause S-shaped stems. Apply to area between rows. Do not use below 60 F.



Herbicide	Rate, per Acre	Comments
Treflan (trifluralin)	1 – 2 pt (0.5 – 1 lb ai)	PPI; stunts plants if soil temperature <60 F. Fair - Good control of annual grasses, pigweeds. Fair control of common lambsquarters, common purslane. No control of nutsedge, composites, mustards.

Herbicide	Rate, per Acre	Comments
Command (clomazone)	0.7 – 1.3 pt (0.25 – 0.5 lb ai)	Cabbage only. Apply before transplanting. May cause bleaching. Controls velvetleaf, annual grasses, common purslane, ragweed. Do not apply within 1200 ft of dwellings, fruit trees, greenhouses, or nurseries.



Herbicide	Rate, per Acre	Comments
GoalTender (oxyfluorfen)	0.5 – 1 pt (0.25 – 0.5 lb ai)	Apply to soil before transplanting. Do not apply after transplanting. Use with Treflan or Devrinol XT . Do not use with Dual Magnum .



Herbicide	Rate, per Acre	Comments
Spartan (sulfentrazone)	2.25 – 6 fl. oz. (0.07 – 0.188 lb ai)	Processing cabbage only. Improves grass control. Controls common lambsquarters, common purslane, nightshades, and pigweeds.



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Herbicide	Rate, per Acre	Comments
Devrinol XT (napropamide)	2 lb (1 lb ai)	Apply before or after transplanting. May be incorporated or watered in. Controls annual grasses, purslane, pigweeds. New formulation lasts 4-6 weeks. No stunting of transplants below 60 F.



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Herbicide	Rate, per Acre	Comments
Dual Magnum (S-metolachlor) 24(c) indemnified label	0.5 – 1.3 pt (0.48 – 1.2 lb ai)	Apply before or after transplanting. Use low rate on sand. Controls annual grasses, nightshades, pigweeds, nutsedge. May stunt plants in cool weather. Post-transplant applications may cause foliar burn. Do not apply with other herbicides post-transplant. Do not use with GoalTender.



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<h2><u>Postemergence Herbicides for Cole Crop Production</u></h2>		

Herbicide	Rate, per Acre	Comments
Poast (sethoxydim)	1 – 1.5 pt (0.19 – 0.28 lb ai)	Annual grass control. Grass dies slowly and may be present for 2- 3 weeks after application.
Select Max (clethodim)	9 – 16 fl. oz. (0.068 – 0.12 lb ai)	30 day PHI.

Herbicide	Rate, per Acre	Comments
GoalTender (oxyfluorfen)	4 – 8 fl. oz. (0.125 – 0.25 lb ai)	Broccoli, cauliflower, cabbage. Do not add surfactant. Controls many broadleaves. Weak on mustards and smartweed. Apply to small weeds. 35 day PHI.



Herbicide	Rate, per Acre	Comments
Stinger (clopyralid)	4 – 8 fl. oz. (0.094 – 0.188 lb ai)	All <i>Brassica</i> crops. Controls composite weeds (ragweed, pineappleweed, horseweed), legumes, nightshades, and smartweeds. 30 day PHI.

Bicyclopyrone for Weed Control in Cole Crops

Treatment 6/2	Rate lb ai/A	Visual Rating, 6/26		Yield, kg/plot	
		Broccoli	Cabbage	Broccoli	Cabbage
bicyclopyrone	0.033 PRT	2.3	1.7	6.3*	26
bicyclopyrone	0.045 PRT	3.3*	2.7*	6.2*	27
bicyclopyrone	0.033 POT	2.7*	2.3*	6.9	26
bicyclopyrone	0.045 POT	4.0*	3.7*	5.9*	23
bicyclopyrone	0.033 POST	2.7*	3.0*	8.8	29
bicyclopyrone	0.045 POST	3.3*	3.3*	9.0	26
untreated		1	1	8.6	26





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Zidua for Weed Control in Cole Crops

Treatment 6/2	Rate lb ai/A	Visual Rating, 6/26		Yield, kg/plot	
		Broccoli	Cabbage	Broccoli	Cabbage
Zidua	0.133 PRT	3.3*	4*	7.1	21*
Zidua	0.133 POT	4.7*	4.3*	5.4*	16*
Zidua	0.267 PRT	5.7*	6*	3.5*	10*
untreated		1	1	8.6	26



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A Field Weed Control Program for Cole Crops

1. Work the soil twice before transplanting.
2. Before final tillage, apply **Treflan** or **Devrinol** and incorporate.
3. Apply **GoalTender** to the soil surface.
4. Transplant crops.
5. 3 – 6 weeks after transplanting, apply **GoalTender** or **Stinger** for broadleaf control.
6. Apply postemergence grass herbicides as needed.

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Alternative Weed Control Programs

1. **Dual Magnum** before or after transplanting for nightshade and nutsedge control.
2. **Prowl H₂O** directed between rows.
3. **Command** in cabbage for control of grasses, common lambsquarters, velvetleaf, ragweed.
4. **Spartan** in processing cabbage for control of common lambsquarters, nightshade, pigweed, nutsedge.

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Cultivation

1. 4 – 6 weeks after transplanting, cultivate the field and side-dress with 50 lb nitrogen.
2. Disk the field soon after harvest is complete to kill weeds.

Summary – Cole Crops

1. Use 2 preemergence herbicides.
2. **GoalTender** before transplanting will control mustards and wild radish.
3. **Command** gives some control of mustards and composites.
4. Use **Dual Magnum** to control nightshade and nutsedge. Do not apply with **GoalTender**.

Web Resources

- www.farmassist.com
 - indemnified labels
- www.cdms.net
 - labels
- <http://www.hrt.msu.edu/bernard-zandstra/>

Thank You

Questions?