

Weed Management Planner

AFTER PLANTING

Plant Type	broadleaf														narrow leaf								
	annual									perennial					annual			perennial					
	late spring			early summer			season long			winter		summer			early summer		summer						
	simple			vining			simple			vining		prostrate	upright		vining	prostrate/short	upright	prostrate/short	simple	creeping			
	large seed		small seed		large seed			small seed			large seed		seed	taproot		rhizome			small seed	large seed	small seed	tuber	rhizome
Example Weed	ragweed, common	lambsquarters, common	cocklebur	velvetleaf	burcucumber	amaranth, Palmer/waterhemp	pigweed	morningglory, annual	dandelion	pokeweed	dogbane, hemp	thistle, Canada	horsenettle	crabgrass	foxtail spp.	goosegrass	nutsedge, yellow	Johnsongrass (rhizome)	quackgrass				
Crop Rotation ¹	Continuous monoculture (base system)	N	N	N	N	N	D	N	N	N	N	N	N	N	N	N	N	N	N	N			
	Corn/soybean	P	P	P	P	P	P	F	N	P	N	N	N	N	N	N	N	P	N	N			
	Add winter small grain	G	G	G	G	F	F	G	F	G	P	P	F	P	F	G	P	P	P	P			
	Add perennial forage crop	G	G	G	G	G	G	G	G	G	F	F	P	N	F	F	P	P	P	P			
Cover Crops (fall seeded) ²	Early terminated (low residue) ⁵	P	P	N	N	N	N	P	P	N	N	N	N	N	N	N	N	N	N	N			
	Late terminated (high residue) ⁵																						
	small grain	F	G	F	F	F	G	G	F	F	N	N	N	N	F	F	F	P	N	N			
	legume	P	P	P	P	P	P	P	P	P	N	N	N	N	P	N	P	P	N	N			
small grain-legume mix	F	G	F	F	P	G	G	F	F	N	N	N	N	F	F	F	P	N	N				
Tillage and Cultivation ³	No-till (base system)	P	P	P	P	F	D	D	P	D	D	D	D	D	N	N	N	N	D	D			
	Moldboard plow, once in four years ⁶	F	F	P	F	F	G	G	F	F	F	F	P	P	G	F	G	F	F	F			
	Annual fall moldboard plow	N	N	N	N	D	N	N	N	G	G	F	F	F	F	N	N	F	F	F			
	Annual spring moldboard plow	P	P	P	P	N	P	P	F	G	G	P	P	P	P	P	P	N	P	P			
	Spring disk or chisel plow ⁷	P	F	N	P	D	N	P	P	P	F	P	N	P	N	P	D	N	N	N			
	Vertical tillage/turbo till (fall)	N	P	N	N	N	N	N	P	N	N	N	N	N	N	N	N	N	N	N			
	Interrow cultivation	G	G	F	G	F	G	G	F	P	P	P	P	P	F	F	F	P	P	N			
	Early planting date ⁸																						
Planting	corn	P	P	G	F	P	P	F	P	P	P	P	P	P	P	P	P	P	P	P			
	soybean	P	P	P	P	P	P	P	P	P	P	P	P	P	P	F	P	F	P	P			
	Late planting date (double-crop soybean)	G	G	P	P	P	P	F	P	P	P	F	P	F	P	P	P	P	P	P			
	Increased soybean seeding rate	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P			
	Narrow row spacing (<15 inches)	F	F	F	F	F	F	F	F	P	P	P	P	F	F	F	F	P	P	P			
Fertility	Timing (multiple applications vs all at planting)	P	F	P	F	P	P	F	P	P	P	N	N	P	F	P	P	P	P	P			
	Placement (in-furrow or 2-by-2 vs broadcast)	P	P	N	N	N	P	P	N	N	N	N	N	N	P	P	P	N	N	N			
Harvest	Harvest weed seed control ⁹	F	F	P	N	N	G	G	N	N	N	N	N	N	P	N	N	N	N	N			
	Crop stubble mowing ¹⁰	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	N	P	P	P			
	Equipment sanitation ¹¹	F	F	F	F	F	F	F	F	F	P	P	P	P	F	F	F	P	F	F			
Chemical ⁴	Spring burndown ¹²	F	P	N	N	N	N	P	P	G	P	N	P	N	P	P	N	P	N	F			
	Residual with spring burndown ¹³	G	G	P	F	P	F	F	F	G	P	P	P	P	G	F	P	F	P	P			
	Residual at planting	G	E	G	G	G	G	G	G	F	P	P	P	P	G	G	F	F	P	P			
	Timely post	E	E	G	E	G	G	G	F	G	G	G	G	G	G	E	F	G	G	E			
	Timely post with residual	E	E	E	E	E	E	E	G	G	G	G	G	G	E	E	E	G	G	E			
	Harvest aid	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	N	P	P	P			
	Post harvest burndown ¹⁰	N	P	N	P	N	P	P	P	F	P	F	F	F	P	P	N	P	P	P			

Tactics in italics target the weed seed bank rather than in-season management.

¹ Crop rotation based on the impact of planting date altering crop architecture only - not other weed control strategies associated with different crops. Continuous monoculture is the base system; ratings within crop rotation are based relative to this.
² Assumes timely planting (by October 15 for small grains, by October 1 for legumes, and by Sept 15 for radish), attaining at least 6,000 lbs of biomass per acre at termination, and cash crop planting within 2 weeks after termination.

³ No-till is defined as the base system and ratings within tillage/cultivation are relative to this.
⁴ Assumes effective herbicide use. Please consult the Mid-Atlantic Field Crop Weed Management Guide.
⁵ Ratings based on seedling emergence after cover crop termination.
⁶ Ratings based on first season following moldboard plow/inversion tillage only.
⁷ Spring tillage prior to planting.
⁸ Planted 2 to 3 weeks earlier than a typical planting date for the region.

⁹ Harvest weed seed control with a grain head; do not use ratings for corn grain harvest.
¹⁰ Implemented approximately 2 to 3 weeks after harvest.
¹¹ Ratings based on spread of weed from field to field, not within a field.
¹² Full season burndown (not double crop soybean burndown timing).
¹³ Ratings based on effects of residual herbicide, not burndown.

Efficacy ratings of weed management tactics in the mid-Atlantic region

- D Detrimental:** this tactic may increase weed problems by spreading propagules or increasing density
- N No effect:** this tactic will not impact management of this weed
- P Poor:** this tactic will marginally reduce weed density
- F Fair:** this tactic will moderately reduce weed density and may reduce competitiveness

- G Good:** this tactic consistently reduces weed density and competitiveness
- E Excellent:** this tactic significantly reduces weed density and minimizes competitiveness
- Not applicable**

Authors

- Michael Flessner, Virginia Tech
- Kevin Bamber, Virginia Tech
- Thierry Besançon, Rutgers University
- Rakesh Chandran, West Virginia University
- Tommy Hines, Virginia Tech
- Quintin Johnson, University of Delaware
- Dwight Lingenfelter, Penn State
- Claudio Rubione, University of Delaware
- Lovreet Shergill, (formerly) University of Delaware
- Vijay Singh, Virginia Tech
- Mark VanGessel, University of Delaware
- Kurt Vollmer, University of Maryland
- John Wallace, Penn State

