



# Adjuvant Use Guide

## Herbicides

	Adjuvant	Use Rate
Acclaim Extra	Pen-A-Trate II	2 pints / 100 gallons
AquaMaster	Delux	5 - 10 quarts / 100 gallons
Barricade 4L	Speed	12 ounces / 100 gallons
Basagran T/O	Microyl	3 - 4 pints / 100 gallons
Chipco-Ronstar	Speed	12 ounces / 100 gallons
Confront	Delux	5 quarts / 100 gallons
Corsair	Pen-A-Trate II	2 pints / 100 gallons
Dimension	Pen-A-Trate II	4 pints / 100 gallons
Drive	Microyl	3 pints / 100 gallons
Envoy	Pen-A-Trate II	2 pints / 100 gallons
Finale	Delux	3 - 10 quarts / 100 gallons
Fusilade	Pen-A-Trate II	2 - 4 pints / 100 gallons
Gallery	Pen-A-Trate II	4 pints / 100 gallons
Glyphosate	Delux	3 - 10 quarts / 100 gallons
Illoxan	Pen-A-Trate II	2 pints / 100 gallons
Image	Microyl	3 - 4 pints / 100 gallons
Kerb	Speed	12 ounces / 100 gallons
Lontrel	Delux	3 - 5 quarts / 100 gallons
Manage	Microyl	3 - 4 pints / 100 gallons
Manor	Pen-A-Trate II	2 pints / 100 gallons
Millenium	Delux	5 quarts / 100 gallons
Monument	Microyl	3 pints / 100 gallons
MSMA	Delux	5 quarts / 100 gallons
Pendulum 3.3EC	Speed	12 ounces / 100 gallons
Pennant Magnum	Speed	12 ounces / 100 gallons
Plateau	Microyl	3-4 pints / 100 gallons
Revolver	Microyl	3-4 pints / 100 gallons,
	Speed	8-16 ounces / 100 gallons
Reward	Pen-A-Trate II	2 pints / 100 gallons
Sencor	Speed	12 ounces / 100 gallons
Simazine	Speed	12 ounces / 100 gallons
Speed Zone	Microyl	3 - 4 pints / 100 gallons
Surflan	Speed	12 ounces / 100 gallons
Tranxit	Microyl	3 pints / 100 gallons
Trimec	Delux	3 - 5 quarts / 100 gallons
2,4-D	Delux	3 - 5 quarts / 100 gallons

## Fungicides

	Adjuvant	Use Rate
Banol	Speed	8 - 16 ounces / 100 gallons
Banner Maxx	Speed	8 - 16 ounces / 100 gallons
Bayleton	Chem-Stik	8 ounces / 100 gallons
Chipco 26019/GT	Speed	8 - 16 ounces / 100 gallons
Chipco Signature	Speed	8 - 16 ounces / 100 gallons
Chlorothalonil	Chem-Stik	8 ounces / 100 gallons
Compass	Chem-Stik	8 ounces / 100 gallons
Dithane WF	Chem-Stik	8 ounces / 100 gallons
Emerald	None Recommended	
Eagle	Speed	8 - 16 ounces / 100 gallons
Endorse	Speed	12 ounces / 100 gallons
Fore	Chem-Stik	8 ounces / 100 gallons
Heritage	None Recommended	
Insignia	None Recommended	
Junction	New Balance	Use label reference to maintain a pH level of 5.0 to 7.0
Prostar	Speed	8 - 16 ounces / 100 gallons
Protect T/O	Chem-Stik	8 ounces / 100 gallons
Rubigan A/S	Chem-Stik	8 ounces / 100 gallons
Spectro 90	Chem-Stik	8 ounces / 100 gallons
Subdue Maxx	Speed	8 - 16 ounces / 100 gallons
3336 & WP	Chem-Stik	8 ounces / 100 gallons

## Insecticides

	Adjuvant	Use Rate
Conserve	Speed or Chem-Stik	See rates below
DeltaGard	Speed or Chem-Stik	See rates below
Dursban	Speed or Chem-Stik	See rates below
Dylox 80	Speed or Chem-Stik	See rates below
Endeavor	Speed	8 - 12 ounces / 100 gallons
Mach 2	Speed or Chem-Stik	See rates below
Merit 75 WP	Speed or Chem-Stik	See rates below
Nemacur	Speed	16 ounces / 100 gallons
Oftanol	Speed or Chem-Stik	See rates below
Orthene	Speed or Chem-Stik	See rates below
Scimitar	Speed or Chem-Stik	See rates below
Sevin SL	New Balance	16 ounces / 100 gallons
Talstar	Speed	16 ounces / 100 gallons
Tempo	Speed or Chem-Stik	See rates below
Turcam	New Balance	16 ounces / 100 gallons

Use the following rates with Chem-Stik or Speed for delivering spray solution to the appropriate target areas:  
 8 ounces of Chem-Stik / 100 gallons for foliar feeding pests  
 8 ounces of Speed / 100 gallons for thatch or crown feeding pests  
 8 ounces of Speed / 100 gallons for sub-surface pests

Always read and follow label directions

# GUIDELINES TO ADJUSTING pH LEVELS

Adjusting / buffering the pH level of spray solutions can significantly increase the performance of certain pesticides by reducing alkaline hydrolysis which causes the accelerated breakdown of their active ingredients. Below is a guideline for determining the optimal pH.

PESTICIDE BRAND NAME	GENERIC PRODUCT NAME	OPTI-MUM pH	NEEDS BUFFER	Half-Life at Various pH Levels					
				← Alkaline →		Neutral	← Acidic →		
				9.0	8.0	7.0	6.0	5.0	4.0
<b>FUNGICIDES</b>									
BANNER MAXX*	PROPICONAZOLE		NO	Stable pH 5.0 - 9.0					
BANOL*	PROPAMOCARB		NO	Stable over wide pH range					
BAYLETON*	TRIDIMEFON	7	NO	Stable over wide pH range					
BENLATE	BENOMYL	5	YES		1 hr	7 hr	80 hr		
CAPTAN	CAPTAN	5.0 - 7.0	NO						
CHIPCO GT*	IPRODIONE	7	NO	Rapid hydrolysis at pH above 8.0					
CHIPCO® SIGNATURE™	FOSETYL-AL	6	NO	Stable at pH 4.0 to 8.0					
CLEARLY 3336™	THIOPHANATE-METHYL	6.0 - 7.0	YES	Buffer to a pH of 6.0 to 7.0 prior to addition of 3336					
COMPASS™	TRIFLOXYSTROBIN		NO	Stable over wide pH range					
DACONIL*	CHLOROTHALONIL	7	NO	Stable over wide pH range					
DITHANE WF	MANCOZEB	7	NO	Optimum pH range 5.5 - 6.0					
EAGLE WSP	MYCLOBUTANIL		NO	Stable over wide pH range					
EMERALD*	BOSCALID		NO	Stable over wide pH range					
ENDORSE™	POLYOXIN D		NO	Stable over wide pH range					
JUNCTION*	COPPER HYDROXIDE & MANCOZEB	5	YES	Optimum pH range 4.0 - 7.0					
FORE SC RAINSHIELD	MANCOZEB	7	NO	Optimum pH range 5.5 - 6.0					
HERITAGE*	AZOXYSTROBIN		NO	Stable over wide pH range					
INSIGNIA*	PYRACLOSTROBIN		NO	Stable over wide pH range					
KOCIDE	COPPER HYDROXIDE	6.5	NO						
PROSTAR*	FLUTOLANIL		NO	Stable pH 3.0 - 11.0					
RUBIGAN	FENARIMOL	7	NO	Decompose in acidic solutions					
SPECTRO™ 90	CHLOROTHALONIL, THIOPHANATE-METHYL	6.0 - 7.0	YES	Buffer to a pH of 6.0 to 7.0 prior to addition of 3336					
SUBDUE MAXX*	METALAXYL	5.0 - 9.0	YES	Buffer to a pH of less than 7.5					
TERRAZOLE*	ETRIDIAZOLE		NO	Stable over wide pH range					
<b>HERBICIDES</b>									
ACCLAIM® EXTRA	FENOXAPROP-P-ETHYL		YES	Unstable in acidic conditions					
BARRICADE*	PRODIAMINE		NO	Stable over wide pH range					
BASAGRAN T&O*	BENTAZONE	8.0 - 9.0	NO	Resistant to hydrolysis					
BALAN	BENEFIN		NO	Stable at pH 5.0 - 9.0					
BANVEL	DICAMBA	5.0 - 6.0	YES						
CHIPCO® RONSTAR™	OXADIAZON		NO	Stable over wide pH range					
CONFRONT	TRCLOPYR, CLOPYRALID		NO	Stable over wide pH range					
CORSAIR™	CHLORSULFURON	>7.0	YES	Corsair is more stable in high pH. Avoid application in low pH.					
DIMENSION	DITHIOPYR		NO	Stable over wide pH range					
DRIVE*	DICHLORO QUINOLINECARBOXYLIC ACID		NO	Stable over wide pH range					
ENVOY*	CLETHODIM	5.5 - 6.5	YES	pH should be >5.0 and <7.0					
FINALE*	GLUFOSINATE-AMMONIUM	4.0 - 8.0	NO	Stable over wide pH range					
FUSILADE*	FLUAZIFOP-P-BUTYL	7	NO						
GALLERY	ISOXABEN		NO	Optimum pH Range 5.0 - 9.0					
GLYPHOSATE	GLYPHOSATE		NO	Stable over wide pH range					
ILLOXAN*	DICLOFOP-METHYL		NO	Stable over wide pH range					
IMAGE*	IMAZAQUIN	7	NO	Stable over pH range 5.0 - 9.0					
KERB	PRONAMIDE		NO	Stable over wide pH range					
LONTREL	CLOPYRALID		NO	Stable over wide pH range					
MANAGE*	HALOSULFURON-METHYL	7	NO	Optimum pH range 5.0 - 7.0					
MANOR™	METSULFURON METHYL METH. BENZOATE	>7.0	YES	May degrade in 24 hours in acid solutions					
MONUMENT™	TRIFLOXY SULFURON-SODIUM	7	YES	If pH is less than 5.5, add a buffer to raise pH to 7.0					
PENDULUM*	PENDIMETHALIN		NO	Stable over wide pH range					
PENNANT MAGNUM*	METOLACHLOR	6.0 - 7.5	NO	Stable over wide pH range					
REVOLVER™	FORAMSULFURON	7	YES	If pH is less than 6.0, add a buffer					
REWARD® DIQUAT			NO	Stable over wide pH range					
RONSTAR*	OXADIAZON	<7.0	YES	Stable in acid or neutral solutions					
<b>INSECTICIDES</b>									
ASTRO*	PERMETHRIN	5.5	YES	Optimal pH range 5.0 - 6.0					
AVID*	ABAMECTIN	6.5	NO	Stable pH range 5.0 - 9.0					
DELTAGARD*	DELTAMETHRIN		NO	Most stable at pH < 7.0					
DURSBAN	CHLORPYRIFOS	7	NO	1.5 days	35 days				
DYLOX*	TRICHLORFON	5	YES	63 min.	6.5 hours	3.7 days			
ENDEAVOR™	PYMETOZINE	>7.0	YES	Degrades at low pH					
MACH 2	HALOFENZOIDE		NO	Stable over wide pH range					
MALATHION	MALATHION	5	YES	5 hours	19 hours	3 days	8 days		
MERIT*	IMIDACLOPRID		NO	Stable over wide pH range					
ORTHENE*	ACEPHATE	7	NO	16 days	46 days	40 days			
SCIMITAR*	LAMBDA-CYHALOTHRIN	5.0 - 7.0	YES	Adjust pH to level between 5.0 - 7.0					
SEVIN*	CARBARYL	7	YES	24 hours	2.5 days	24 days	100 days		
TALSTAR*	BENFENTHRIN		NO	Stable over pH range 5.0 - 9.0					
TEMPO*	CYFLUTHRIN		NO	Stable over pH range 5.0 - 9.0					
<b>PLANT GROWTH REGULATORS</b>									
B-NINE*	DEMINOZIDE	<7	YES	Do not use with alkaline materials					
BONZI*	PACLOBUTRAZOL		NO	Stable pH 4.0 - 9.0					
CUTLESS	FLURPRIMIDOL		NO	Stable over wide pH range					
EMBARK	MEFLUIDIDE	6.5	NO						
PRIMO MAXX™	TRINEXAPAC -ETHYL	< 7.0	YES	Best performance in acidic solutions					



## Adjuvants

### Chem-Stik™ - Nonionic Spreader Sticker

Highly concentrated and uniquely formulated for efficacy and easy handling and clean up. Excellent for contact fungicides and insecticides that require leaf surface retention.

### Delux™ - Surfactant plus Ammonium Sulfate Adjuvant

A biodegradable activator surfactant and ammonium sulfate premix formulated to enhance the performance of certain postemergence herbicides.

### Microyl™ - Activator Adjuvant

A unique non-ionic paraffin based mso replacement that provides superior performance and improved turfgrass safety at low use rates.

### New Balance™ - pH Buffer and Nonionic Surfactant

A surfactant and buffer combination that effectively lowers spray solution pH and improves leaf surface coverage.

### Pen-A-Trate II™ - Premium Nonionic Surfactant

Formulated for use with conventional and new-generation low-use-rate pesticides, to ensure superior wetting and spreading for excellent weed control.

### Persist® Ultra - Methylated Seed Oil

Formulated to optimize pesticide performance and mixing characteristics with a wider range of tank mix partners than ordinary methylated seed oils or crop oils.

### Speed™ - Nonionic Siloxane Surfactant

Utilizes Silquick™ wicking action to move spray solution up and down the plant for superior coverage of targeted pests.

Distributed by:

\*NEW BALANCE is a safe to use, citric based buffering and wetting agent specifically designed to modify spray solution pH to prevent alkaline hydrolysis.