Spray Material Half-Life Chart 2009

Adjusting the pH of the spray solution can reduce spray material decomposition and make the spray more effective.

The following chart shows the Spray Material Half-Life or the time it takes for half the amount of chemical to be decomposed (made inactive at various pH levels).

Spray Material	Buffering	Optimum		Half-Life at nH ir	ndicated (50% dec			
	Burrering		0.0		ndicated (50% dec		E 0	4.5
Product		pН	9,0	8,0	7,0	6,0	5,0	4,5
			Basic	Basic	Neutral	Acidic	Acidic	Acidic
2,4-D Amine		6,0					H 4.5 - 7.0	
Accel®		6,0			Strongly recom	mend pH 5.5 - 6.5		
Achieve®		7,0	>1000 days		114 days		63 days	
Acramite® Updated 6-04	Х	6,0	10 min.		1 hr.	12 hrs.		20 hrs.
Acrobat®		7,0			Stable over wi	de range of pH		
Actara™ Updated 8-04		7,0		Su	sceptible to alkalin		9.0	
Actellic®		7,0		12 days	35 days		7 days	
Admire® Updated 4-08		7,0	355 days		stable at a pH of 5	and 0	30 days	
·		7,0	333 days	1 ully			30 days	
Agri-Mek®						de range of pH	^	
Aliette®		6,0				Stable in pH 4.0 - 8		
Alverde® Added 8-06		7,0			Stable over wide ra	nge of pH above 4.		
Amber®		7,0	Si	table from 7.0 to 9			31 days	
Ambush®		7,0		Stable at	pH 6.0 - 8.0			
Ammo®	Х	4,0	35 hrs.		More st	able in acidic solut	ions	
Apollo® Updated 1-03	Х	6,0	4 hrs.		34 hrs.		248 hrs.	
Asana® Updated 6-04		6,5	•	Stable	over a pH 5.0 - 9.0	range		
Assail™ <i>updated 4-08</i>	İ	6,0		Uns	table in water pH b	elow 4.0 and above	e 7.0	
Atrazine		7,0				vly in base solution		
Auxigro®	х	6,0				mend pH 5.5 - 6.5		
•								
Avaunt®	-	7,0	Danaw	ooo in otrana baaa		de range of pH		
Avenge®	X	5,0	Decompo	ses in strong base	condition	Otable : !!==	0.0	
Banvel®	Х	5,5			0: 1:	Stable at pH 5.0	- v.U	
Basagran®	<u> </u>	7,0				de range of pH		
Bayleton®		7,0				de range of pH		
Baythroid® Added 4-08			6 days		Stab	le over wide range	of pH	
Beacon®		7,0		>900 days			6 days	
Betamix®		7,0	10 min.		17 hrs		60 days	
Bravo®	Ī	7,0	•			de range of pH	. ,-	
Buctril®	х	5,0	Hydrolysis ab	ove pH 7.0	0101 WI	3 p		
Cabrio™ EG	'	7,0	30 days					
Calypso® Updated 1-05	1	7,0	oo aays	-	Stable over wide ra	nge of nH 5.0 to 0	n	
		7,0	Do N	NOT lower pH of w		Inge of pri 3.0 to 3.	0	
Canvas®			D0 I				00.1	
Captan®	Х	5,0		10 min.	8 hrs.		32 hrs.	
CaptEvat® Added 8-04	Х	5,0		10 min.	8 hrs.		32 hrs.	
Capture® Added 6-04		6,0				Stable in pH 4.5 -	7.5	
Carzol®	Х	5,0	2 hrs.		23 hrs.		4 days	
Classic®	Х	5,0					Stable in pH 5.0 w	ater
Copper Products		>7.0				Do Not Use In wa	ater pH below 7.0	
Confirm®		7,0			Stable over wi	de range of pH		
Curzate® DF Updated 3-03		6,5		8 hrs.		pH 5.5 - 6.5		
Dacthal®		7,0				g acid and alkaline		
Decis® added 4-08		7,0	2 days		-	n pH 5 to 8		
Delegate® added 11-09		7,0	2 days	Stol	ole in pH from 5.0 to			
Des-i-cate®	х	5,0		Stat	ole iii pi i iioiii 5.0 t	0 9.0	Stable at pH 4.0	E O
	^				01-1-1	da manana af mili	Stable at pri 4.0	3.0
Di-syston®		7,0	00.1			de range of pH		
Diazinon		7,0	29 days	3 wks.	10wks.		14 days	8 days
Dibrom®	Х	5,0		18 hrs. in pH > 7				
Digon® Dimethoate	Х	5,0	48 mins.			12 hrs.		20 hrs.
Dipel®		6,0	Unstable in pH >	· 8				
Dithane®	Х	5,5	34 hrs.		17 hrs.		20 days	
Diquat®		6,0			17 1110.		20 uays	
Distinct®		6,0				eutral or acid solut		
	<u></u>	7,0			Stable in n	eutral or acid solut de range of pH		
Dursban®	Х			1.5 days	Stable in n			
		7,0 5,0			Stable in n Stable over wi 35 days	de range of pH	ions	
Dylox®	X X	7,0 5,0 5,0		1.5 days 63 min.	Stable in n Stable over wi 35 days 6.5 hrs.	de range of pH 3.7 days	ions	
Dylox® Echo® / Bravo®		7,0 5,0 5,0 7,0			Stable in n Stable over wi 35 days 6.5 hrs. Stable over wi	de range of pH 3.7 days de range of pH	ions	
Dylox® Echo® / Bravo® Elite®		7,0 5,0 5,0 7,0 7,0			Stable in n Stable over wi 35 days 6.5 hrs. Stable over wi Stable over wi	de range of pH 3.7 days de range of pH de range of pH	ions	
Dylox® Echo® / Bravo® Elite® Endura® <i>7-04</i>		7,0 5,0 5,0 7,0 7,0 6,8	Ctable	63 min.	Stable in n Stable over wi 35 days 6.5 hrs. Stable over wi Stable over wi Stable over wi	de range of pH 3.7 days de range of pH	63 days	
Dylox® Echo® / Bravo® Elite® Endura® 7-04 Entrust® added 9-07	Х	7,0 5,0 5,0 7,0 7,0 6,8 7,0		63 min. in pH from 6.0 to 1	Stable in n Stable over wi 35 days 6.5 hrs. Stable over wi Stable over wi Stable over wi	de range of pH 3.7 days de range of pH de range of pH	ions	
Dylox® Echo® / Bravo® Elite® Endura® 7-04 Entrust® added 9-07 Ethrel® updated 2-06		7,0 5,0 5,0 7,0 7,0 6,8 7,0 7,0	Hydrolized ur	63 min. in pH from 6.0 to of the details alkaline conditions.	Stable in n Stable over wi 35 days 6.5 hrs. Stable over wi Stable over wi Stable over wi	de range of pH 3.7 days de range of pH de range of pH	63 days	
Dylox® Echo® / Bravo® Elite® Endura® 7-04 Entrust® added 9-07 Ethrel® updated 2-06 Endosulfon	Х	7,0 5,0 5,0 7,0 7,0 6,8 7,0 7,0 6,0	Hydrolized ur Some alkaline	63 min. in pH from 6.0 to of the details alkaline conditions.	Stable in n Stable over wi 35 days 6.5 hrs. Stable over wi Stable over wi Stable over wi 11.0	de range of pH 3.7 days de range of pH de range of pH de range of pH	63 days 12 hrs.	
Dylox® Echo® / Bravo® Elite® Endura® 7-04 Entrust® added 9-07 Ethrel® updated 2-06 Endosulfon Envidor® added 4-08	Х	7,0 5,0 5,0 7,0 7,0 6,8 7,0 7,0 6,0 7,0	Hydrolized ur	63 min. in pH from 6.0 to of the details alkaline conditions.	Stable in n Stable over wi 35 days 6.5 hrs. Stable over wi Stable over wi Stable over wi 11.0	de range of pH 3.7 days de range of pH de range of pH de range of pH stable from pH 4 to	63 days 12 hrs.	
Dylox® Echo® / Bravo® Elite® Endura® 7-04 Entrust® added 9-07 Ethrel® updated 2-06 Endosulfon Envidor® added 4-08 Everest®	Х	7,0 5,0 5,0 7,0 7,0 6,8 7,0 7,0 6,0 7,0 7,0	Hydrolized ur Some alkaline 2 days	63 min. in pH from 6.0 to ² nder alkaline condi hydrolysis	Stable in n Stable over wi 35 days 6.5 hrs. Stable over wi Stable over wi Stable over wi 11.0 itions	de range of pH 3.7 days de range of pH de range of pH de range of pH	63 days 12 hrs.	
Dylox® Echo® / Bravo® Elite® Endura® 7-04 Entrust® added 9-07 Ethrel® updated 2-06 Endosulfon Envidor® added 4-08	Х	7,0 5,0 5,0 7,0 7,0 6,8 7,0 7,0 6,0 7,0	Hydrolized ur Some alkaline 2 days	63 min. in pH from 6.0 to of the details alkaline conditions.	Stable in n Stable over wi 35 days 6.5 hrs. Stable over wi Stable over wi Stable over wi 11.0 itions	de range of pH 3.7 days de range of pH de range of pH de range of pH stable from pH 4 to	63 days 12 hrs.	
Dylox® Echo® / Bravo® Elite® Endura® 7-04 Entrust® added 9-07 Ethrel® updated 2-06 Endosulfon Envidor® added 4-08 Everest®	Х	7,0 5,0 5,0 7,0 7,0 6,8 7,0 7,0 6,0 7,0 7,0	Hydrolized ur Some alkaline 2 days	63 min. in pH from 6.0 to ² nder alkaline condi hydrolysis	Stable in n Stable over wi 35 days 6.5 hrs. Stable over wi Stable over wi Stable over wi itions Stable over wi itions	de range of pH 3.7 days de range of pH de range of pH de range of pH stable from pH 4 to	63 days 12 hrs.	
Dylox® Echo® / Bravo® Elite® Endura® 7-04 Entrust® added 9-07 Ethrel® updated 2-06 Endosulfon Envidor® added 4-08 Everest® Express®	Х	7,0 5,0 5,0 7,0 7,0 6,8 7,0 7,0 6,0 7,0 7,0 7,0	Hydrolized ur Some alkaline 2 days	63 min. in pH from 6.0 to ² nder alkaline condi hydrolysis	Stable in n Stable over wi 35 days 6.5 hrs. Stable over wi Stable over wi Stable over wi 11.0 Stable over wi Stable over wi	de range of pH 3.7 days de range of pH de range of pH de range of pH de range of pH	63 days 12 hrs.	
Dylox® Echo® / Bravo® Elite® Endura® 7-04 Entrust® added 9-07 Ethrel® updated 2-06 Endosulfon Envidor® added 4-08 Everest® Express® Flint® Folicur®	Х	7,0 5,0 5,0 7,0 7,0 6,8 7,0 7,0 6,0 7,0 7,0 7,0 7,0 7,0	Hydrolized ur Some alkaline 2 days Do N 27 hours	63 min. in pH from 6.0 to of adder alkaline conditional hydrolysis	Stable in n Stable over wi 35 days 6.5 hrs. Stable over wi Stable over wi Stable over wi 11.0 Stable over wi 25 days Stable over wi 25 days Stable over wi 26 days Stable over wi 27 days Stable over wi 28 days Stable over wi	de range of pH 3.7 days de range of pH de range of pH de range of pH stable from pH 4 to de range of pH Stable from pH 4 to	63 days 12 hrs.	
Dylox® Echo® / Bravo® Elite® Endura® 7-04 Entrust® added 9-07 Ethrel® updated 2-06 Endosulfon Envidor® added 4-08 Everest® Express® Filint® Folicur® Funginex®	X	7,0 5,0 5,0 7,0 7,0 7,0 6,8 7,0 7,0 6,0 7,0 7,0 7,0 7,0 7,0 7,0 6,5	Hydrolized ur Some alkaline 2 days Do N 27 hours Neutralized ir	63 min. in pH from 6.0 to ² nder alkaline condi hydrolysis	Stable in n Stable over wi 35 days 6.5 hrs. Stable over wi Stable over wi Stable over wi 11.0 Stable over wi 25 days Stable over wi 25 days Stable over wi 26 days Stable over wi 27 days Stable over wi 28 days Stable over wi	de range of pH 3.7 days de range of pH de range of pH de range of pH de range of pH Stable from pH 4 to de range of pH Stable from pH 4 to de range of pH	63 days 12 hrs.	
Dylox® Echo® / Bravo® Elite® Endura® 7-04 Entrust® added 9-07 Ethrel® updated 2-06 Endosulfon Envidor® added 4-08 Everest® Express® Flint® Folicur® Funginex® Furadan®	Х	7,0 5,0 5,0 7,0 7,0 7,0 7,0 7,0 7,0 7,0 7,0 7,0 7	Hydrolized ur Some alkaline 2 days Do N 27 hours Neutralized ir 78 hrs.	63 min. in pH from 6.0 to of adder alkaline conditional hydrolysis	Stable in n Stable over wi 35 days 6.5 hrs. Stable over wi Stable over wi Stable over wi itions Stable over wi	de range of pH 3.7 days de range of pH de range of pH de range of pH stable from pH 4 to de range of pH Stable from pH 4 to	63 days 12 hrs.	65 wke
Dylox® Echo® / Bravo® Elite® Endura® 7-04 Entrust® added 9-07 Ethrel® updated 2-06 Endosulfon Envidor® added 4-08 Everest® Express® Fiint® Folicur® Furginav® Furginav® Furginav® Furginav®	X	7,0 5,0 5,0 7,0 7,0 6,8 7,0 7,0 7,0 7,0 7,0 7,0 7,0 7,0 7,0 7,0	Hydrolized ur Some alkaline 2 days Do N 27 hours Neutralized ir	63 min. in pH from 6.0 to of adder alkaline conditional hydrolysis	Stable in n Stable over wi 35 days 6.5 hrs. Stable over wi Stable over wi Stable over wi 11.0 Stable over wi 25 days Stable over wi 25 days Stable over wi 25 days Stable over wi 27 days Stable over wi 28 days Stable over wi 29 days Stable over wi 21 wks.	de range of pH 3.7 days de range of pH de range of pH de range of pH stable from pH 4 to de range of pH Stable from pH 4 to de range of pH 8 days	63 days 12 hrs.	65 wks.
Dylox® Echo® / Bravo® Echo® / Bravo® Elite® Endura® 7-04 Entrust® added 9-07 Ethrel® updated 2-06 Endosulfon Envidor® added 4-08 Exerest® Express® Flint® Folicur® Funginex® Furadan® Fusilade® Gallery®	X	7,0 5,0 5,0 7,0 7,0 6,8 7,0 6,0 7,0 7,0 7,0 7,0 7,0 7,0 7,0 7,0 7,0 7	Hydrolized ur Some alkaline 2 days Do 1 27 hours Neutralized ir 78 hrs. 17 days	63 min. in pH from 6.0 to of adder alkaline conditional hydrolysis	Stable in n Stable over wi 35 days 6.5 hrs. Stable over wi Stable over wi Stable over wi 11.0 Stable over wi 25 stable over wi 25 stable over wi 26 stable over wi 27 stable over wi 28 stable over wi 28 stable over wi 38 stable over wi	de range of pH 3.7 days de range of pH de range of pH de range of pH de range of pH Stable from pH 4 to de range of pH Stable from pH 4 to de range of pH Stable from pH 4 to de range of pH de range of pH	63 days 12 hrs. 8	65 wks.
Dylox® Echo® / Bravo® Echo® / Bravo® Elite® Endura® 7-04 Entrust® added 9-07 Ethrel® updated 2-06 Endosulfon Envidor® added 4-08 Everest® Express® Flint® Folicur® Funginex® Furadan® Fusilade® Gallery® Gem®	X	7,0 5,0 5,0 7,0 7,0 7,0 6,8 7,0 7,0 7,0 7,0 7,0 7,0 7,0 7,0	Hydrolized ur Some alkaline 2 days Do 1 27 hours Neutralized ir 78 hrs. 17 days 27 hours	63 min. in pH from 6.0 to 3 oder alkaline condi hydrolysis NOT lower pH of was a slightly alkaline value of the slightly a	Stable in n Stable over wi 35 days 6.5 hrs. Stable over wi Stable over wi Stable over wi 11.0 Stable over wi 21 water 21 wks. Stable over wi Stable over wi	de range of pH 3.7 days de range of pH de range of pH de range of pH stable from pH 4 to de range of pH Stable from pH 4 to de range of pH 8 days	63 days 12 hrs. 8	65 wks.
Dylox® Echo® / Bravo® Echo® / Bravo® Elite® Endura® 7-04 Entrust® added 9-07 Ethrel® updated 2-06 Endosulfon Envidor® added 4-08 Everest® Express® Flint® Folicur® Funginex® Furadan® Fusilade® Gallery® Gem® Glean®	X	7,0 5,0 5,0 7,0 7,0 7,0 7,0 7,0 6,0 7,0 7,0 7,0 7,0 7,0 7,0 7,0 7	Hydrolized ur Some alkaline 2 days Do 1 27 hours Neutralized ir 78 hrs. 17 days 27 hours	63 min. in pH from 6.0 to of adder alkaline conditional hydrolysis	Stable in n Stable over wi 35 days 6.5 hrs. Stable over wi Stable over wi Stable over wi 11.0 Stable over wi 21 was a stable over wi stable over wi 22 stable over wi	de range of pH 3.7 days de range of pH de range of pH de range of pH de range of pH Stable from pH 4 to de range of pH 8 days de range of pH 8 table from pH 4 to	63 days 12 hrs. 8	65 wks.
Dylox® Echo® / Bravo® Elite® Endura® 7-04 Entrust® added 9-07 Ethrel® updated 2-06 Endosulfon Envidor® added 4-08 Everest® Express® Flint® Folicur® Funginex® Furadan® Fusilade® Gallery® Gem® Glean® Genesis®	X	7,0 5,0 5,0 7,0 7,0 7,0 7,0 7,0 7,0 7,0 7,0 7,0 7	Hydrolized ur Some alkaline 2 days Do 1 27 hours Neutralized ir 78 hrs. 17 days 27 hours	63 min. in pH from 6.0 to 3 oder alkaline condi hydrolysis NOT lower pH of was a slightly alkaline value of the slightly a	Stable in n Stable over wi 35 days 6.5 hrs. Stable over wi Stable over wi Stable over wi itions Stable over wi stable over wi stable over wi 21 wks. Stable over wi	de range of pH 3.7 days de range of pH de range of pH de range of pH Stable from pH 4 to de range of pH 8 days de range of pH 8 days de range of pH de range of pH de range of pH de range of pH	63 days 12 hrs. 8	65 wks.
Dylox® Echo® / Bravo® Elite® Endura® 7-04 Entrust® added 9-07 Ethrel® updated 2-06 Endosulfon Envidor® added 4-08 Everest® Express® Flint® Folicur® Fruginex® Furadan® Fusilade® Gallery® Gem® Glean® Genesis® Goal®	X	7,0 5,0 5,0 7,0 7,0 6,8 7,0 7,0 6,0 7,0 7,0 7,0 7,0 7,0 7,0 7,0 7	Hydrolized ur Some alkaline 2 days Do 1 27 hours Neutralized ir 78 hrs. 17 days 27 hours	63 min. in pH from 6.0 to oder alkaline conditional hydrolysis NOT lower pH of with a slightly alkaline via the slightly	Stable in n Stable over wi 35 days 6.5 hrs. Stable over wi Stable over wi Stable over wi 11.0 Stable over wi 21 was a stable over wi stable over wi 22 stable over wi	de range of pH 3.7 days de range of pH de range of pH de range of pH Stable from pH 4 to de range of pH 8 days de range of pH 8 days de range of pH de range of pH de range of pH de range of pH	63 days 12 hrs. 8	65 wks.
Dylox® Echo® / Bravo® Elite® Endura® 7-04 Entrust® added 9-07 Ethrel® updated 2-06 Endosulfon Envidor® added 4-08 Everest® Express® Flint® Folicur® Funginex® Furadan® Fusilade® Gallery® Gem® Glean® Genesis®	X	7,0 5,0 5,0 7,0 7,0 7,0 7,0 7,0 7,0 7,0 7,0 7,0 7	Hydrolized ur Some alkaline 2 days Do 1 27 hours Neutralized ir 78 hrs. 17 days 27 hours	63 min. in pH from 6.0 to oder alkaline conditional hydrolysis NOT lower pH of with a slightly alkaline via the slightly	Stable in n Stable over wi 35 days 6.5 hrs. Stable over wi Stable over wi Stable over wi itions Stable over wi stable over wi stable over wi 21 wks. Stable over wi	de range of pH 3.7 days de range of pH de range of pH de range of pH Stable from pH 4 to de range of pH 8 days de range of pH 8 days de range of pH de range of pH de range of pH de range of pH	63 days 12 hrs. 8	65 wks.
Dylox® Echo® / Bravo® Eitle® Eitle® Endura® 7-04 Entrust® added 9-07 Ethrel® updated 2-06 Endosulfon Envidor® added 4-08 Everest® Express® Filint® Folicur® Funginex® Furadan® Fusilade® Gallery® Gem® Glean® Genesis® Goal® Gramoxone® Extra	X	7,0 5,0 5,0 7,0 7,0 6,8 7,0 7,0 6,0 7,0 7,0 7,0 7,0 7,0 7,0 7,0 7	Hydrolized ur Some alkaline 2 days Do 1 27 hours Neutralized ir 78 hrs. 17 days 27 hours	in pH from 6.0 to 3 der alkaline condi hydrolysis NOT lower pH of was a slightly alkaline value of the slightly alkaline of the slightly alkaline value of the slightly alkaline of the	Stable in n Stable over wi 35 days 6.5 hrs. Stable over wi Stable over wi Stable over wi itions Stable over wi stable over wi stable over wi 21 wks. Stable over wi	de range of pH 3.7 days de range of pH de range of pH de range of pH Stable from pH 4 to de range of pH 8 days de range of pH 8 days de range of pH de range of pH de range of pH de range of pH	63 days 12 hrs. 8	65 wks.
Dylox® Echo® / Bravo® Eitle® Eitle® Endura® 7-04 Entrust® added 9-07 Ethrel® updated 2-06 Endosulfon Envidor® added 4-08 Everest® Express® Filint® Folicur® Funginex® Furadan® Fusilade® Gallery® Gem® Glean® Genesis® Goal® Gramoxone® Extra	X	7,0 5,0 5,0 7,0 7,0 7,0 6,8 7,0 7,0 7,0 7,0 7,0 7,0 7,0 7,0	Hydrolized ur Some alkaline 2 days Do 1 27 hours Neutralized ir 78 hrs. 17 days 27 hours Do 1 Not stable in pH	in pH from 6.0 to 3 der alkaline condi hydrolysis NOT lower pH of was a slightly alkaline value of the slightly alkaline of the slightly alkaline value of the slightly alkaline of the	Stable in n Stable over wi 35 days 6.5 hrs. Stable over wi Stable over wi Stable over wi itions Stable over wi stable over wi stable over wi 21 wks. Stable over wi	de range of pH 3.7 days de range of pH de range of pH de range of pH Stable from pH 4 to de range of pH 8 days de range of pH 8 days de range of pH de range of pH de range of pH de range of pH	63 days 12 hrs. 8	65 wks.
Dylox® Echo® / Bravo® Echo® / Bravo® Elite® Endura® 7-04 Entrust® added 9-07 Ethrel® updated 2-06 Endosulfon Envidor® added 4-08 Everest® Express® Flint® Folicur® Funginex® Furadan® Fusilade® Gallery® Gem® Glean® Genesis® Goal® Gramoxone® Extra Gramoxone® MAX Guthion® updated 4-08	X	7,0 5,0 5,0 7,0 7,0 7,0 7,0 7,0 7,0 7,0 7	Hydrolized ur Some alkaline 2 days Do 1 27 hours Neutralized ir 78 hrs. 17 days 27 hours Do 1 Not stable in pH Not stable in pH 12 hours	in pH from 6.0 to adder alkaline conditional hydrolysis NOT lower pH of water alkaline was a slightly	Stable in n Stable over wi 35 days 6.5 hrs. Stable over wi Stable over wi Stable over wi itions Stable over wi stable over wi stable over wi itions Stable over wi Stable in neutra	de range of pH 3.7 days de range of pH de range of pH de range of pH Stable from pH 4 to de range of pH 8 days de range of pH 8 days de range of pH de range of pH de range of pH de range of pH	63 days 63 days 12 hrs. 8	
Dylox® Echo® / Bravo® Echo® / Bravo® Elite® Endura® 7-04 Entrust® added 9-07 Ethrel® updated 2-06 Endosulfon Envidor® added 4-08 Everest® Express® Finit® Folicur® Fouginar® Furadan® Fusilade® Gallery® Genesis® Genesis® Goal® Gramoxone® Extra Gramoxone® MAX Guthion® updated 4-08 Harmony®	X	7,0 5,0 5,0 7,0 7,0 6,8 7,0 7,0 6,0 7,0 7,0 7,0 7,0 7,0 7,0 7,0 7,0 7,0 7	Hydrolized ur Some alkaline 2 days Do 1 27 hours Neutralized ir 78 hrs. 17 days 27 hours Do 1 Not stable in pH 12 hours Do 1	in pH from 6.0 to ander alkaline conditional hydrolysis NOT lower pH of water alkaline very pH of water alkaline very pH of water pH of w	Stable in n Stable over wi 35 days 6.5 hrs. Stable over wi Stable over wi Stable over wi 11.0 Stable over wi 11.0 Stable over wi 21 wks. Stable over wi 22 wks. Stable over wi	de range of pH 3.7 days de range of pH de range of pH de range of pH Stable from pH 4 to de range of pH 8 days de range of pH 8 days de range of pH de range of pH de range of pH de range of pH	63 days 63 days 12 hrs. 8	
Dylox® Echo® / Bravo® Echo® / Bravo® Elite® Endura® 7-04 Entrust® added 9-07 Ethrel® updated 2-06 Endosulfon Envidor® added 4-08 Everest® Express® Flint® Folicur® Furgians® Furgians® Furgians® Furgians® Gallery® Gem® Glean® Genesis® Goal® Gramoxone® Extra Gramoxone® MAX Guthion® updated 4-08 Harmony®	X	7,0 5,0 5,0 7,0 7,0 6,8 7,0 7,0 6,0 7,0 7,0 7,0 7,0 7,0 7,0 7,0 7,0 7,0 7	Hydrolized ur Some alkaline 2 days Do 1 27 hours Neutralized ir 78 hrs. 17 days 27 hours Do 1 Not stable in pH Not stable in pH 12 hours Do 1	in pH from 6.0 to 3 oder alkaline condi hydrolysis NOT lower pH of word lower lowe	Stable in n Stable over wi 35 days 6.5 hrs. Stable over wi Stable over wi Stable over wi 11.0 Stable over wi 11.0 Stable over wi 12.0 Stable over wi 13.0 Stable over wi 14.0 Stable over wi 15.0 Stable over wi 16.0 Stable over wi 17.0 Stable over wi 18.0 Stable over wi 19.0 Stable over wi 19.0 Stable over wi 10.0 Stable over	de range of pH 3.7 days de range of pH de range of pH de range of pH Stable from pH 4 to de range of pH 8 days de range of pH 8 days de range of pH de range of pH de range of pH de range of pH	63 days 63 days 12 hrs. 8	
Dylox® Echo® / Bravo® Echo® / Bravo® Elite® Endura® 7-04 Entrust® added 9-07 Ethrel® updated 2-06 Endosulfon Envidor® added 4-08 Everest® Express® Flint® Folicur® Funginex® Furadan® Fusilade® Gallery® Geme® Glean® Genesis® Goal® Gramoxone® Extra Gramoxone® MAX Guthion® updated 4-08 Harmony® Harmony® Harmony® Harmony® Extra Harmony® GT	X	7,0 5,0 5,0 7,0 7,0 7,0 6,8 7,0 7,0 6,0 7,0 7,0 7,0 7,0 7,0 7,0 7,0 7,0 7,0 7	Hydrolized ur Some alkaline 2 days Do 1 27 hours Neutralized ir 78 hrs. 17 days 27 hours Do 1 Not stable in pH Not stable in pH 12 hours Do 1 Do 1	in pH from 6.0 to ander alkaline conditional hydrolysis NOT lower pH of water alkaline very pH of water alkaline very pH of water pH of w	Stable in n Stable over wi 35 days 6.5 hrs. Stable over wi Stable over wi Stable over wi 11.0 Stable over wi 11.0 Stable over wi 12.0 Stable over wi 13.0 Stable over wi 14.0 Stable over wi 15.0 Stable over wi 16.0 Stable over wi 17.0 Stable over wi 18.0 Stable over wi 19.0 Stable over wi 19.0 Stable over wi 10.0 Stable over	de range of pH 3.7 days de range of pH de range of pH de range of pH Stable from pH 4 to de range of pH 8 days de range of pH 8 days de range of pH de range of pH de range of pH de range of pH	63 days 63 days 12 hrs. 8	
Dylox® Echo® / Bravo® Echo® / Bravo® Echo® / Bravo® Elite® Endura® 7-04 Entrust® added 9-07 Ethrel® updated 2-06 Endosulfon Envidor® added 4-08 Everest® Express® Flint® Folicur® Funginex® Furadan® Fusilade® Gallery® Gem® Glean® Genesis® Goal® Gramoxone® Extra Gramoxone® MAX Guthion® updated 4-08 Harmony® Extra	X	7,0 5,0 5,0 7,0 7,0 6,8 7,0 7,0 6,0 7,0 7,0 7,0 7,0 7,0 7,0 7,0 7,0 7,0 7	Hydrolized ur Some alkaline 2 days Do 1 27 hours Neutralized ir 78 hrs. 17 days 27 hours Do 1 Not stable in pH Not stable in pH 12 hours Do 1	in pH from 6.0 to 3 oder alkaline condi hydrolysis NOT lower pH of word lower lowe	Stable in n Stable over wi 35 days 6.5 hrs. Stable over wi Stable over wi Stable over wi 11.0 Stable over wi 11.0 Stable over wi 12.0 Stable over wi 13.0 Stable over wi 14.0 Stable over wi 15.0 Stable over wi 16.0 Stable over wi 17.0 Stable over wi 18.0 Stable over wi 19.0 Stable over wi 19.0 Stable over wi 10.0 Stable over	de range of pH 3.7 days de range of pH de range of pH de range of pH Stable from pH 4 to de range of pH 8 days de range of pH 8 days de range of pH de range of pH de range of pH de range of pH	63 days 63 days 12 hrs. 8	

Section Sect	Intrepid®		7,0	Stable in pH from 6.0 to 11.0				12 hrs.	
Basel on Inglingly policy value	Kelthane®	Х	,	1 hr.				,	
American Processor Proce									
Station Stat						Lingffe steed by Al		le in slightly acidic	water
Assession X S.5		V				Unarrected by Ai		H 10 - 75	
Josephson Fig. Fi				Affe	cted by alkaline w	ater	Stable III p	114.0 - 7.3	
Incidence				7.110	otou by untained in		kaline Hydrolysis		
MetaPath	Lindane			11 days					
Manage M	Lorsban®		7,0		1.5 days	35 days		63 days	
Maintain Register	Malathion	Х	5,0	5 hrs.	19 hrs.	3 days	8 days		
Mains FNV	Maneb® Updated 5-03								
Minerations 1.5 days	Manzate®	Х	,	4 hrs.					
Milesch X S, 0 1.5 hrs.					Do no	ot put into solution b		8.0 pH	
MetaSyster R © X 6.0 Unstable in lakalies 12 hrs. Montrol Moope@ 7.0 7.0 Decomposes repidly at pH > 7 Stable over wide range of pH 30 days Montrol Moore Add 1109 X 5.5 Decomposes repidly at pH > 7 Stable over wide range of pH 10 days Montrol Moore Add 1109 X 4.8 4 hrs. 8.0 hrs. 8.0 hrs. 10 days		V				45 h	30 days	05 h	
Moceyrip 7,0 Decomposes rapidly at pH 37 Stable over vide range of pH					Instable in alkalie		12 hre	35 nrs.	
Montrol® X 5.5 Decomposes rapidly at pH = 7		Α	,	,	JIIStable III alkalie				
Movement Andread 11-109 7.0 Stable over wide range of pH	Monitor®	Х		Decomposes ra	pidly at pH >7		Je samge er pri	>30 days	
Nomeror® 7,0 8 days 700 days 40 days 700 da	Movento® Added 11-09			· ·		Stable over wi	de range of pH	· · · · · · · · · · · · · · · · · · ·	•
Discording Active 4-1-66 7.0 Column Pris 6-0-8.0 Do Not Acody Below 6.0	Morestan®	Х		4 hrs.		80 hrs			10 days
Difference	Nemacur®			8 days					
The companies The companie	Oberon® Added 4-06		,		С	.	3.0	Do Not Acid	
Otherwise April Age Ag						525 days			325 days
Parathon						17		EE dava	
Peak 7.0 672 days	·			3 days	25 hre			oo days	
Permits Perm				672 days	23 1113.			10 days	
Pencace® X 5.5 4 hrs. 17 hrs. 20 days	Permit®/Sandea®			572 days			de range of pH	.o days	
Pendimethalin	Pencozeb®	Х		4 hrs.			la de la composition della com	20 days	
Platinum Added 8-04 7,0 Susceptible to alkalie in pH 4.0 - 1.0.0	Pendimethalin					Stable over wi	de range of pH	,	
Pounce@	Pinnacle®		6,0	Rapid hydrolysis a	t pH 9				
Pounce@ P	Platinum® Added 8-04				Su			9.0	
Printing 7-04 6,8 24 days Stable in pH 6.7 - 7.5 96 days 120 days Previous 7,0 Stable over wide range of pH Provadio 7,0 Stable from 7.0 to 9.0 Stable in neutral or acid solutions Provadio 7,0 Stable from 7.0 to 9.0 Stable in neutral or acid solutions Provadio 7,0 Stable from 7.0 to 9.0 Stable in neutral or acid solutions Provadio 7,0 Stable in pH 5.0 - 7.0 optimum 37 days Provadio 7,0 Stable in neutral or acid solutions Provadio 7,0 Stable in pH 5.0 - 7.0 optimum 37 days Provadio 7,0 Stable in pH 5.0 - 7.0 optimum 37 days Provadio 7,0 Stable over wide range of pH Provadio 7,0 Stable over wide range of pH Provadio 7,0 Stable over wide range of pH Provadio 7,0 Stable in pH 5.0 - 9.0 Provadio 7,0 Stable in pH 5.0 - 9								1	
Princept® 6,0 24 days 96 days 120 days 120 days Premature 7,0 Stable over wide range of pH Premature 7,0 Stable over wide range of pH Provado® 7,0 Stable over wide range of pH Pryentrum Added 6-04 7,0 Stable from 7.0 to 9.0 31 days Regione® 6,0 Stable from 7.0 to 9.0 31 days Regione® 7,0 Stable from 7.0 to 9.0 Stable in neutral or acid sofutions Roman Added 8-27 Roman Added 8-28 Roman Added 8-29 Roman			,						
Previous				24 days		Stable in p	OH 6.7 - 7.5	OC days	100 days
Promating			,	24 days		Ctable over wi	ido rongo of pU	96 days	120 days
Provide				Unetable in nH	√8	Stable over wi	de lange of pri		
Provide 7,0 Stable over wide range of pH				Chotable in pri	70	Stable over wi	ide range of pH		
Pyramities	Prowl®								
Pyrethrum Added 6-04	Proaxis® Added 8-04								
Reversion Reversion Regione	Pyramite®		7,0			Stable over wi	ide range of pH		
Regione® 6,0 Stable in neutral or acid solutions Ridomil Gold® MZ	Pyrethrum Added 6-04						1 6.5 - 7.5 is optimu		
Ridomi Gold® MZ	Rave®			S	table from 7.0 to 9				
Rimon® Added 8-27 Ronilan® 7-04 6,8 Stable in pH 6,7-7.5 Roundup® X 5,5 Roundup® X 5,5 Roundup® X 6,0 Rapid above 8.0 PH 5,0-7.0 optimum 37 days Roundup® PH 5,0-7.0 optimum 37 days Roundup® 7,0 Stable over wide range of pH Rynaxpy™ revised 9-07 7,0 Stable over wide range of pH Sencor® 7,0 Stable in pH 5,0-9.0 Stable over wide range of pH Sencor® 7,0 Stable in pH 5,0-9.0 Sevin® 7,0 1 day 2,5 days 24 days 100 days Shadeout® 7,0 Stable in pH from 5,0 to 9.0 Stable in pH 5,0-8.0 Stable over wide range of pH Stable in pH from 5,0 to 9.0 Stable over wide range of pH Stable over wide range of pH Thindan® 7,0 Rapid hydrolysis at pH > 7 Thindan® 7,0 Stable over wide range of pH Thindan® 7,0 Stable over wide range of pH Stable over wide range of pH Thindan® 7,0 Stable over wide range of pH Thindan® 8,0 Rapid hydrolysis at pH > 7 Stable over wide range of pH Thindan® 7,0 Thindan® 7,0 Stable over wide range of pH Th		V							
Ronilan® 7-04 Ronilan® 7-04 Roundup® X 5.5 pH 5.0 - 6.0 optimum Ronilan® 7-05 pH 5.0 - 6.0 optimum Ronilan® 7-05 PH 5.0 - 6.0 optimum Ronilan® 7-05 Rapid above 8.0 pH 5.0 - 7.0 optimum 37 days Rubigan® 7.0 Stable over wide range of pH Ronilan® 7-05 Rapid above 8.0 PH 5.0 - 7.0 optimum 37 days Rubigan® 7.0 Stable over wide range of pH Ronilan® 7-05 Rapid above 8.0 Rapid above 8.0 PH 5.0 - 7.0 optimum 37 days Rubigan® 7-06 Rapid above 8.0 Rapid above 8.0 PH 5.0 - 9.0 Rapid above 8.0 PH 5.0 - 9.0 Rapid above 8.0 Rapid hydrolysis at pH 5.0		X	5,0		IVIO			9.0	
Roundup® X 5.5 Rapid above 8.0 PH 5.0 - 6.0 optimum 37 days Rounal@ updated 3-08 X 6.0 Rapid above 8.0 PH 5.0 - 7.0 optimum 37 days Rubigan® 7,0 Stable over wide range of pH Rynaxpyr™ revised 9-07 7.0 Stable over wide range of pH Rynaxpyr™ revised 9-07 7.0 Stable over wide range of pH Rubigan® 7.0 1 day 2.5 days 24 days 100 days Rubigan® 7.0 1 day 2.5 days 24 days 100 days Rubigan® 7.0 R			6.8						
Royral@updated 3-08 X 6,0 Rapid above 8.0 pH 5.0 - 7.0 optimum 37 days		Х				Otable III		imum	
Rynaxpyr™ revised 9-07	Rovral® updated 3-08			Rapid al	oove 8.0				37 days
Scale	Rubigan®		7,0			Stable over wi	de range of pH		
7,0 Stable over wide range of pH	Rynaxpyr™ revised 9-07				5			.0	
Sencor® 6,5	Savey®			Stable over wide range of pH					
Sevin® 7,0					0:-1: : ::		de range of pH		
Sevin XLR® 7,0				1 dov			100 days		
Shadeout® 7,0 Stable in neutral pH									
Sovran@ added 6-08	Shadeout®			1 day	2.0 day3				
Spinosad® added 11-09 7,0 Stable in pH from 5.0 to 9.0 12 hrs. Spintor®/Success® 7,0 Stable in pH from 5.0 to 9.0 12 hrs. Stratego® 27 hours Stable in pH 5.0 - 8.0 Surflan® 7,0 Stable over wide range of pH Tanos™ Added 12-03 X 6,5 Rapid hydrolysis at pH > 7 Terrachlor® X 5,5 Rapid hydrolysis at pH > 7 Thiodan® 6,0 Some alkaline hydrolysis Till® 7,0 Stable over wide range of pH Topsin® M Update 8-06 7,0 Stable over wide range of pH Trifeflan®/Trifurallin 7,0 Stable over wide range of pH Triumph® 7,0 Avoid pH 5.0 or less Triumph® X 5,5 20 hrs 8.3 days Avoid pH 5.0 or less Turcan® 6,0 45 mins. 3 days 48 days Warrior® Updated 8-04 7,0 Not effected by pH Vydate® X 5,0 30 hrs. Stable over wide range of pH	Sovran® added 6-08			7 hrs.				Stable	
Spintor®/Success®	Spinosad® added 11-09				Stable		0		
Surflan®	Spintor®/Success®								
Tanos™ Added 12-03 X 6,5 Rapid hydrolysis at pH > 7 Terrachlor® X 5,5 Rapid hydrolysis at pH > 7 Thiodan® 6,0 Some alkaline hydrolysis Tifl® 7,0 Stable over wide range of pH Topsin® M Update 8-06 7,0 Stable over wide range of pH Treflan®/Trifuralin 7,0 Stable over wide range of pH Trimec® 7,0 Avoid pH 5.0 or less Triumph® X 5,5 20 hrs 8.3 days Avoid pH 5.0 or less Turcam® 6,0 45 mins. 3 days 48 days Warrior® Updated 8-04 6,5 Stable in pH 5.5 - 7.0 Vendex® 7,0 Not effected by pH Vydate® X 5,0 30 hrs. Stable over wide range of pH	Stratego®			27 hours					
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Zeal® 7,0 Stable over wide range of pH				90.1		Not effec	ted by pH	O: 1:	- 4 4 7 - 11
,		X		30 nrs.		Stable over	ido rango of pU	Stable	at 4.7 pH
		ame listed is th	,	emark of the manuf-	acturer	Stable Over WI	ue range or pn		

^{**®} indicates that the product name listed is the registered trademark of the manufacturer.

**For most pesticides, the optimum pH is in the range of 5.0 - 6.5 (slightly acidic).

**An 'X' in the buffering column denotes that the use of a buffering agent such as TRI-FOL(r) should produce significant agronomic gains.

**Check with the respective manufacturer's label for recommended pH levels. Many factors determine the efficacy of sprays, therefore, it is not possible to guarantee any combination or results accordingly. The following factors are involved with chemical performance: pH, temperature, solubility, concentrations, type of agitation, humidity, mixture time in tank and time of application. The above pH half-life information has been obtained from various manufacturers, universities, and state agricultural sources. Wilbur-Ellis has not tested the above stability levels nor verified the pH half-life ranges, but rather offers the above information as a guideline to address the issue of pH importance to more effective spray application.

**Data Sources; University of Massachusetts, Ohio State University, North Carolina Ag extension, and product labeling.