

I. Maternal Effects of Novaluron (Rimon® 0.83EC) upon Colorado Potato Beetle, (Arlington Agricultural Experiment Station, Arlington, WI Field 560).

Treatments	Application Rates	Application Number	Plot Numbers	Mean Proportion of Viable Egg Masses					
				16 June	23 June	30 June	7 July	14 July	Mean
1) Rimon® 0.83EC	12 fl oz. / A	2 (14 days apart)	(101, 201, 301, 401)	0.8	0.65	X.X	X.X	X.X	
2) Rimon® 0.83EC Alverde™ 240SC	6 fl oz. / A 2.4 fl oz. / A	2 (14 days apart) 2 (14 days apart)	(102, 202, 302, 402)	0.78	0.6	X.X	X.X	X.X	
3) Alverde™ 240SC	4.75 fl oz. / A	2 (14 days apart)	(103, 203, 303, 403)	1.00	0.95	X.X	X.X	X.X	
4) Rimon® 0.83EC	6 fl oz. / A	4 (7 days apart)	(104, 204, 304, 404)	0.88	0.68	X.X	X.X	X.X	
5) UTC			(105, 205, 305, 405)	0.95	1.00	X.X	X.X	X.X	

II. Foliar Insecticide Evaluations for the Control of Colorado Potato Beetle, (Arlington Agricultural Experiment Station, Arlington, WI Field 560)¹.

Treatments	Active Ingredient	Application Rate	Plot Numbers	Treatments	Active Ingredient	Application Rate	Plot Numbers
1) Brigadier	imidacloprid +bifenthrin	4.8 oz. / A	(101, 201, 301, 401)	31) Rimon	novaluron	12 fl oz. / A	(131, 231, 331, 431)
2) Brigadier	imidacloprid +bifenthrin	6.2 oz. / A	(102, 202, 302, 402)	32) Agri-Mek	abamectin	8.0 fl oz. / A	(132, 232, 332, 432)
3) HGW 86 OD experimental		0.044 lb a.i. / A	(103, 203, 303, 403)	33) Agri-Mek	abamectin	12.0 fl oz. / A	(133, 233, 333, 433)
4) HGW 86 OD		0.088 lb a.i. / A	(104, 204, 304, 404)	34) Vydate	oxamyl	4 pt. / A	(134, 234, 334, 434)
5) HGW 86 OD		0.134 lb a.i. / A	(105, 205, 305, 405)	35) SpinTor	spinosad	4.5 fl oz. / A	(135, 235, 335, 435)
6) HGW 86 OD + MSO		0.088 lb a.i. / A	(106, 206, 306, 406)	36) SpinTor	spinosad	6.0 fl oz. / A	(136, 236, 336, 436)
7) HGW 86 SE experimental		0.088 lb a.i. / A	(107, 207, 307, 407)	37) UTC			(137, 237, 337, 437)
8) Coragen 1.67 SC rynaxypyr		3.5 fl oz/A	(108, 208, 308, 408)	38) Radiant	spinetoram	6.0 fl oz. / A	(138, 238, 338, 438)
9) Coragen 1.67 SC rynaxypyr		5.0 fl oz/A	(109, 209, 309, 409)	39) Radiant	spinetoram	8.0 fl oz. / A	(139, 239, 339, 439)
10) Alverde metaflumizone		4.5 fl oz/A	(110, 210, 310, 410)	40) Thiodan	endosulfan	1.33 qt. / A	(140, 240, 340, 440)
11) Alverde metaflumizone		6.0 fl oz/A	(111, 211, 311, 411)	41) Imidan	phosmet	1.33 lb / A	(141, 241, 341, 441)
12) Belay 16 WSG clothianadin		1.8 fl oz/A	(112, 212, 312, 412)	42) A15645	experimental	4.0 oz. / A	(142, 242, 342, 442)
13) Belay 16 WSG clothianadin		2.8 fl oz/A	(113, 213, 313, 413)	43) A15397	experimental	5.0 fl oz. / A	(143, 243, 343, 443)
14) UTC			(114, 214, 314, 414)	44) A15397	experimental	7.0 fl oz. / A	(144, 244, 344, 444)
15) Assail	acetamiprid	4.0 oz. / A	(115, 215, 315, 415)	45) A15397	experimental	8.9 fl oz. / A	(145, 245, 345, 445)
16) Actara	thiamethoxam	1.5 oz. / A	(116, 216, 316, 416)	46) Endigo ZC	thiamethoxam+(Warrior)	3.5 fl oz. / A	(146, 246, 346, 446)
17) Provado	imidacloprid	3.75 fl oz. / A	(117, 217, 317, 417)	47) Mustang MAX	zeta-cypermethrin	4.7 fl oz. / A	(147, 247, 347, 447)
18) Belay 50 WDG clothianadin		1.5 oz. / A	(118, 218, 318, 418)	48) Movento	spirotriflufenuron	5.0 fl oz. / A	(148, 248, 348, 448)
19) Belay 50 WDG clothianadin+(Warrior)		1.5 oz. / A	(119, 219, 319, 419)	49) Venom	dinotefuran	1.0 oz. / A	(149, 249, 349, 449)
20) Belay 16 WSG clothianadin		2.8 fl oz/A	(120, 220, 320, 420)	50) Venom	dinotefuran	1.5 oz. / A	(150, 250, 350, 450)
21) Belay 16 WSG clothianadin+(Warrior)		2.8 fl oz/A	(121, 221, 321, 421)	51) Novodor	<i>B.t. tenebrionis</i>	2.75 L / A	(151, 251, 351, 451)
22) Leverage	imidacloprid +Baythroid	3.75 fl oz. / A	(122, 222, 322, 422)	52) Novodor	<i>B.t. tenebrionis</i>	2.0 L / A	(152, 252, 352, 452)
23) Endigo ZC	thiamethoxam+(Warrior)	2.74 fl oz. / A	(123, 223, 323, 423)				
24) XXXX	experimental	15.3 fl oz. / A	(124, 224, 324, 424)				
25) XXXX	experimental	30.6 fl oz. / A	(125, 225, 325, 425)				
26) XXXX	experimental	45 g a.i. / A	(126, 226, 326, 426)				
27) XXXX	experimental	90 g a.i. / A	(127, 227, 327, 427)				
28) UTC			(128, 228, 328, 428)				
29) Asana XL	esfenvalerate +PBO	9.7 fl oz. / A	(129, 229, 329, 429)				
30) Rimon	novaluron	9.0 fl oz. / A	(130, 230, 330, 430)				

¹ Foliar insecticides applied with a 6' boom operating at 30 psi delivering 24.9 gpa through 3 flat-fan nozzles (8002VS-XR) spaced 18" apart. Two applications of each foliar insecticide applied 16 and 23 June, 2008.

III. Cucumber Beetle Management: New Systemic Insecticides, Seed Treatments, and Matrix Impregnation, (Arlington Agricultural Experiment Station, Arlington, WI Field 560)¹.

Treatments	Active Ingredient	Application Rate	Application Method	Vendor	Plot Numbers
1)	UTC		N/A	N/A	(101, 201, 301, 401)
2)	clothianadin + imidacloprid	1 mg a.i./seed 0.332 mg a.i./seed	Seed	Pre-treated (Bayer)	(102, 202, 302, 402)
3)	clothianadin + imidacloprid	0.75 mg a.i./seed 0.25 mg a.i./seed	Seed	Pre-treated (Bayer)	(103, 203, 303, 403)
4)	clothianadin + imidacloprid	0.375 mg a.i./seed 0.125 mg a.i./seed	Seed	Pre-treated (Bayer)	(104, 204, 304, 404)
5)	clothianadin + imidacloprid	0.187 mg a.i./seed 0.0625 mg a.i./seed	Seed	Pre-treated (Bayer)	(105, 205, 305, 405)
6)	thiamethoxam	0.75 mg a.i./seed	Seed	Pre-treated (Syngenta)	(106, 206, 306, 406)
7)	thiamethoxam	Platinum 2SC (11.0 fl oz/acre)	Drench	5.8 ml / 24 L H ₂ O (mix) Drench 250 ml (mix) / plant	(107, 207, 307, 407)
8)	thiamethoxam	Platinum 2SC (11.0 fl oz/acre) (20 lb/acre)	Polyacrylate matrix-impregnated	4.8 ml / 110 g polyacrylate Deliver 0.68 g / plant	(108, 208, 308, 408)
9)	thiamethoxam	Platinum 2SC (5.5 fl oz/acre) (20 lb/acre)	Polyacrylate matrix-impregnated	2.4 ml / 110 g polyacrylate Deliver 0.68 g / plant	(109, 209, 309, 409)

¹ Seed treatments were applied by Bayer Crop Sciences and Syngenta Crop Protection prior to planting. In-furrow insecticide applications were applied in a 4" band over open furrows using a CO₂ pressurized, backpack sprayer delivering 5 gpa at 24.9 psi with a single hollow-cone nozzle (TXVS-6). Applications were applied 20 April and in-furrow applications applied 24 April, 2007.

VII. 2008, Additional Vegetable Insect Research.

I. Colorado Potato Beetle: Statewide Neonicotinoid Insensitivity.

- ❖ Populations of Colorado potato beetle collected from various locations in Wisconsin. Resistance ratio estimates calculated against a New Jersey reference control strain of Colorado potato beetle adults (LD₅₀ = 0.031).

II. Colorado Potato Beetle: Soil Injection Assays.

- ❖ Improved application techniques for the control of Colorado potato beetles to 1) extend the interval of control of water-soluble neonicotinoids, and 2) limit foliar applications of 2nd generation CPB

III. Full Season Snap Bean Pest Management (Field 560).

- ❖ Evaluation of select registered seed treatments (e.g. Cruiser®) and selected experimental in-furrow, systemic insecticides (anthrillid diamides) for season-long control of key insect pests in snap beans including 1) seed maggots, potato leafhopper, and European corn borer.