

ARTHROPOD MANAGEMENT & APPLIED ECOLOGY

Evaluating the Effects of Excluding Various Insecticide Classes for Control of the Tarnished Plant Bug, *Lygus lineolaris* (Palisot De Beauvois), in ThryvOn Cotton, *Gossypium hirsutum* L.

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SUPPLEMENTAL TABLES

Table 1. Insecticide applications at the Glendora, MS location

Treatment Classification	Application Date	Pest(s)	Product Name	Common Name	Rate (g ai ha ⁻¹)
ThryvOn All Classes	06/21/2023	Thrips	Intrepid Edge® SC	Methoxyfenozide & Spinetoram	79.66
	07/05/2023	Tarnished Plant Bug	Alias® 4F	Imidacloprid	140.16
	07/11/2023	Tarnished Plant Bug	Diamond® 0.83EC	Novaluron	43.59
			Acephate 90WDG	Acephate	504.17
	07/18/2023	Tarnished Plant Bug	Acephate 90WDG	Acephate	756.25
			Brigade 2EC	Bifenthrin	112.04
	07/28/2023	Cotton Bollworm	Vantacor® 5SC	Chlorantraniliprole	70.21
08/01/2023	Tarnished Plant Bug	Bidrin® 8	Dicrotophos	560.19	
ThryvOn No Pyrethroids	06/21/2023	Thrips	Intrepid Edge® SC	Methoxyfenozide & Spinetoram	79.66
	07/11/2023	Tarnished Plant Bug	Diamond® 0.83EC	Novaluron	43.59
			Acephate 90WDG	Acephate	504.1
	07/18/2023	Tarnished Plant Bug	Centric® 40WG	Thiamethoxam	70.02
	07/28/2023	Cotton Bollworm	Vantacor® 5SC	Chlorantraniliprole	70.21
08/01/2023	Tarnished Plant Bug	Bidrin® 8	Dicrotophos	560.19	
ThryvOn No Neonicotinoids	06/21/2023	Thrips	Intrepid Edge® SC	Methoxyfenozide & Spinetoram	79.66
	07/05/2023	Tarnished Plant Bug	Vydate® C-LV	Oxamyl	560.97
	7/11/2023	Tarnished Plant Bug	Acephate 90WDG	Acephate	504.17
			Diamond® 0.83EC	Novaluron	43.59
	07/18/2023	Tarnished Plant Bug	Acephate 90WDG	Acephate	756.25
			Brigade 2EC	Bifenthrin	112.04
07/28/2023	Cotton Bollworm	Vantacor® 5SC	Chlorantraniliprole	70.21	
ThryvOn No Organophosphates	06/21/2023	Thrips	Intrepid Edge® SC	Methoxyfenozide & Spinetoram	79.66
	07/11/2023	Tarnished Plant Bug	Diamond® 0.83EC	Novaluron	43.59
			Centric® 40WG	Thiamethoxam	70.02
	07/18/2023	Tarnished Plant Bug	Centric® 40WG	Thiamethoxam	70.02
	07/23/2023	Tarnished Plant Bug	Transform® 50WG	Sulfoxaflor	70.02
	07/28/2023	Cotton Bollworm	Vantacor® 5SC	Chlorantraniliprole	70.21
ThryvOn No Sulfoxaflor	06/21/2023	Thrips	Intrepid Edge® SC	Methoxyfenozide & Spinetoram	79.66
	07/11/2023	Tarnished Plant Bug	Diamond® 0.83EC	Novaluron	43.59
			Acephate 90WDG	Acephate	504.17
	07/18/2023	Tarnished Plant Bug	Acephate 90WDG	Acephate	756.25
			Brigade 2EC	Bifenthrin	112.04
	07/28/2023	Cotton Bollworm	Vantacor® 5SC	Chlorantraniliprole	70.21
08/01/2023	Tarnished Plant Bug	Bidrin® 8	Dicrotophos	560.19	

Table 1. continued

Treatment Classification	Application Date	Pest(s)	Product Name	Common Name	Rate (g ai ha ⁻¹)
Non-ThryvOn All Classes	06/21/2023	Thrips	Intrepid Edge [®] SC	Methoxyfenozide & Spinetoram	79.66
	07/05/2023	Tarnished Plant Bug	Alias [®] 4F	Imidacloprid	140.16
	07/11/2023	Tarnished Plant Bug	Diamond [®] 0.83EC	Novaluron	43.59
	07/18/2023	Tarnished Plant Bug	Acephate 90WDG	Acephate	504.17
	07/28/2023	Tarnished Plant Bug	Centric [®] 40WG	Thiamethoxam	70.02
	07/28/2023	Cotton Bollworm	Vantacor [®] 5SC	Chlorantraniliprole	70.21
	08/01/2023	Tarnished Plant Bug	Bidrin [®] 8	Dicrotophos	560.19
	08/09/2023	Tarnished Plant Bug	Transform [®] 50WG	Sulfoxaflor	70.0
Non-ThryvOn No Pyrethroids	06/21/2023	Thrips	Intrepid Edge [®] SC	Methoxyfenozide & Spinetoram	79.66
	07/11/2023	Tarnished Plant Bug	Diamond [®] 0.83EC	Novaluron	43.59
	07/18/2023	Tarnished Plant Bug	Acephate 90WDG	Acephate	504.17
	07/18/2023	Tarnished Plant Bug	Centric [®] 40WG	Thiamethoxam	70.02
	07/23/2023	Tarnished Plant Bug	Transform [®] 50WG	Sulfoxaflor	70.02
	07/28/2023	Cotton Bollworm	Vantacor [®] 5SC	Chlorantraniliprole	70.21
Non-ThryvOn No Neonicotinoids	06/21/2023	Thrips	Intrepid Edge [®] SC	Methoxyfenozide & Spinetoram	79.66
	07/11/2023	Tarnished Plant Bug	Diamond [®] 0.83EC	Novaluron	43.59
	07/18/2023	Tarnished Plant Bug	Acephate 90WDG	Acephate	504.17
	07/18/2023	Tarnished Plant Bug	Brigade 2EC	Bifenthrin	112.04
	07/28/2023	Cotton Bollworm	Vantacor [®] 5SC	Chlorantraniliprole	70.21
	08/01/2023	Tarnished Plant Bug	Bidrin [®] 8	Dicrotophos	560.19
	08/09/2023	Tarnished Plant Bug	Transform [®] 50WG	Sulfoxaflor	70.02
Non-ThryvOn No Organophosphates	06/21/2023	Thrips	Intrepid Edge [®] SC	Methoxyfenozide & Spinetoram	79.66
	07/11/2023	Tarnished Plant Bug	Diamond [®] 0.83EC	Novaluron	43.59
	07/11/2023	Tarnished Plant Bug	Centric [®] 40WG	Thiamethoxam	70.02
	07/18/2023	Tarnished Plant Bug	Centric [®] 40WG	Thiamethoxam	70.02
	07/28/2023	Cotton Bollworm	Vantacor [®] 5SC	Chlorantraniliprole	70.21
	08/01/2023	Tarnished Plant Bug	Endigo [®] ZCX	Lambda-cyhalothrin & Thiamethoxam	106.38
	08/09/2023	Tarnished Plant Bug	Transform [®] 50WG	Sulfoxaflor	70.02
Non-ThryvOn No Sulfoxaflor	06/21/2023	Thrips	Intrepid Edge [®] SC	Methoxyfenozide & Spinetoram	79.66
	07/11/2023	Tarnished Plant Bug	Diamond [®] 0.83EC	Novaluron	43.59
	07/11/2023	Tarnished Plant Bug	Centric [®] 40WG	Thiamethoxam	70.02
	07/18/2023	Tarnished Plant Bug	Acephate 90WDG	Acephate	756.25
	07/18/2023	Tarnished Plant Bug	Brigade 2EC	Bifenthrin	112.04
	07/28/2023	Cotton Bollworm	Vantacor [®] 5SC	Chlorantraniliprole	70.21
	07/23/2023	Tarnished Plant Bug	Brigade 2EC	Bifenthrin	112.04
	07/23/2023	Tarnished Plant Bug	Acephate 90WDG	Acephate	756.25
	08/09/2023	Tarnished Plant Bug	Diamond [®] 0.83EC	Novaluron	43.59
	08/09/2023	Tarnished Plant Bug	Acephate 90WDG	Acephate	504.17

Table 2. Insecticide applications at the Sidon, MS location

Treatment Classification	Application Date	Pest(s)	Product Name	Common Name	Rate (g ai ha ⁻¹)
ThryvOn All Classes	06/21/2023	Thrips	Intrepid Edge® SC	Methoxyfenozide & Spinetoram	79.66
	08/01/2023	Tarnished Plant Bug	Bidrin® 8	Diclotophos	560.19
	07/28/2023	Cotton Bollworm	Vantacor® 5SC	Chlorantraniliprole	70.21
ThryvOn No Pyrethroids	06/21/2023	Thrips	Intrepid Edge® SC	Methoxyfenozide & Spinetoram	79.66
	07/05/2023	Tarnished Plant Bug	Alias® 4F	Imidacloprid	140.16
	07/28/2023	Cotton Bollworm	Vantacor® 5SC	Chlorantraniliprole	70.21
	08/01/2023	Tarnished Plant Bug	Bidrin® 8	Diclotophos	560.19
ThryvOn No Neonicotinoids	06/21/2023	Thrips	Intrepid Edge® SC	Methoxyfenozide & Spinetoram	79.66
	08/01/2023	Tarnished Plant Bug	Bidrin® 8	Diclotophos	560.19
	07/28/2023	Cotton Bollworm	Vantacor® 5SC	Chlorantraniliprole	70.21
ThryvOn No Organophosphates	06/21/2023	Thrips	Intrepid Edge® SC	Methoxyfenozide & Spinetoram	79.66
	07/05/2023	Tarnished Plant Bug	Alias® 4F	Imidacloprid	140.16
	07/28/2023	Cotton Bollworm	Vantacor® 5SC	Chlorantraniliprole	70.21
	08/01/2023	Tarnished Plant Bug	Endigo® ZCX	Lambda-cyhalothrin & Thiamethoxam	106.38
ThryvOn No Sulfoxaflor	06/21/2023	Thrips	Intrepid Edge® SC	Methoxyfenozide & Spinetoram	79.66
	07/05/2023	Tarnished Plant Bug	Alias® 4F	Imidacloprid	140.16
	07/28/2023	Cotton Bollworm	Vantacor® 5SC	Chlorantraniliprole	70.21
	08/01/2023	Tarnished Plant Bug	Bidrin® 8	Diclotophos	560.19
Non-ThryvOn All Classes	06/21/2023	Thrips	Intrepid Edge® SC	Methoxyfenozide & Spinetoram	79.66
	07/05/2023	Tarnished Plant Bug	Alias® 4F	Imidacloprid	140.16
	07/28/2023	Cotton Bollworm	Vantacor® 5SC	Chlorantraniliprole	70.21
	07/23/2023	Tarnished Plant Bug	Transform® 50WG	Sulfoxaflor	70.02
Non-ThryvOn No Pyrethroids	06/21/2023	Thrips	Intrepid Edge® SC	Methoxyfenozide & Spinetoram	79.66
	07/28/2023	Cotton Bollworm	Vantacor® 5SC	Chlorantraniliprole	70.21
	08/01/2023	Tarnished Plant Bug	Bidrin® 8	Diclotophos	560.19
Non-ThryvOn No Neonicotinoids	06/21/2023	Thrips	Intrepid Edge® SC	Methoxyfenozide & Spinetoram	79.66
	07/05/2023	Tarnished Plant Bug	Dimethoate 4EC	Dimethoate	560.19
	07/18/2023	Tarnished Plant Bug	Centric® 40WG	Thiamethoxam	70.02
	07/28/2023	Cotton Bollworm	Vantacor® 5SC	Chlorantraniliprole	70.21
	07/23/2023	Tarnished Plant Bug	Transform® 50WG	Sulfoxaflor	70.02
Non-ThryvOn No Organophosphates	06/21/2023	Thrips	Intrepid Edge® SC	Methoxyfenozide & Spinetoram	79.66
	07/05/2023	Tarnished Plant Bug	Alias® 4F	Imidacloprid	140.16
	07/18/2023	Tarnished Plant Bug	Centric® 40WG	Thiamethoxam	70.02
	07/28/2023	Cotton Bollworm	Vantacor® 5SC	Chlorantraniliprole	70.21
	08/01/2023	Tarnished Plant Bug	Endigo® ZCX	Lambda-cyhalothrin & Thiamethoxam	106.38
	08/09/2023	Tarnished Plant Bug	Centric® 40WG	Thiamethoxam	70.02
Non-ThryvOn No Sulfoxaflor	06/21/2023	Thrips	Intrepid Edge® SC	Methoxyfenozide & Spinetoram	79.66
	07/05/2023	Tarnished Plant Bug	Alias® 4F	Imidacloprid	140.16
	07/28/2023	Cotton Bollworm	Vantacor® 5SC	Chlorantraniliprole	70.21
	07/23/2023	Tarnished Plant Bug	Acephate 90WDG	Acephate	756.25
	07/23/2023	Tarnished Plant Bug	Brigade 2EC	Bifenthrin	112.04
08/09/2023	Tarnished Plant Bug	Centric® 40WG	Thiamethoxam	70.02	

Table 3. Insecticide applications at the Stoneville, MS location

Treatment Classification	Application Date	Pest(s)	Product Name	Common Name	Rate (g ai ha ⁻¹)
ThryvOn All Classes	05/30/2023	Thrips	Intrepid Edge® SC	Methoxyfenozide & Spinetoram	79.66
	07/17/2023	Cotton Bollworm	Vantacor® 5SC	Chlorantraniliprole	70.21
		Tarnished Plant Bug	Diamond® 0.83EC	Novaluron	43.59
			Acephate 90WDG	Acephate	756.25
ThryvOn No Pyrethroids	05/30/2023	Thrips	Intrepid Edge® SC	Methoxyfenozide & Spinetoram	79.66
	07/10/2023	Tarnished Plant Bug	Transform® 50WG	Sulfoxaflor	70.02
		Cotton Bollworm	Vantacor® 5SC	Chlorantraniliprole	70.21
ThryvOn No Neonicotinoids	05/30/2023	Thrips	Intrepid Edge® SC	Methoxyfenozide & Spinetoram	79.66
	07/10/2023	Cotton Bollworm	Vantacor® 5SC	Chlorantraniliprole	70.21
	07/17/2023	Tarnished Plant Bug	Diamond® 0.83EC	Novaluron	43.59
			Acephate 90WDG	Acephate	504.17
ThryvOn No Organophosphates	05/30/2023	Thrips	Intrepid Edge® SC	Methoxyfenozide & Spinetoram	79.66
	07/10/2023	Tarnished Plant Bug	Transform® 50WG	Sulfoxaflor	70.02
		Cotton Bollworm	Vantacor® 5SC	Chlorantraniliprole	70.21
	07/17/2023	Tarnished Plant Bug	Endigo® ZCX	Lambda-cyhalothrin & Thiamethoxam	106.38
ThryvOn No Sulfoxaflor	05/30/2023	Thrips	Intrepid Edge® SC	Methoxyfenozide & Spinetoram	79.66
	06/19/2023	Tarnished Plant Bug	Centric® 40WG	Thiamethoxam	70.02
	07/10/2023	Cotton Bollworm	Vantacor® 5SC	Chlorantraniliprole	70.21
	07/17/2023	Tarnished Plant Bug	Diamond® 0.83EC	Novaluron	43.59
			Acephate 90WDG	Acephate	504.17
Non-ThryvOn All Classes	05/30/2023	Thrips	Intrepid Edge® SC	Methoxyfenozide & Spinetoram	79.66
	06/19/2023	Tarnished Plant Bug	Centric® 40WG	Thiamethoxam	70.02
	07/10/2023	Tarnished Plant Bug	Transform® 50WG	Sulfoxaflor	70.02
		Cotton Bollworm	Vantacor® 5SC	Chlorantraniliprole	70.21
	07/17/2023	Tarnished Plant Bug	Diamond® 0.83EC	Novaluron	43.59
Non-ThryvOn No Pyrethroids	05/30/2023	Thrips	Intrepid Edge® SC	Methoxyfenozide & Spinetoram	79.66
	07/10/2023	Cotton Bollworm	Vantacor® 5SC	Chlorantraniliprole	70.21
	07/17/2023	Tarnished Plant Bug	Diamond® 0.83EC	Novaluron	43.59
			Acephate 90WDG	Acephate	504.17
	07/31/2023	Tarnished Plant Bug	Transform® 50WG	Sulfoxaflor	70.02
Non-ThryvOn No Neonicotinoids	05/30/2023	Thrips	Intrepid Edge® SC	Methoxyfenozide & Spinetoram	79.66
	06/19/2023	Tarnished Plant Bug	Vydate® C-LV SC	Oxamyl	560.97
	07/10/2023	Cotton Bollworm	Vantacor® 5SC	Chlorantraniliprole	70.21
	07/17/2023	Tarnished Plant Bug	Diamond® 0.83EC	Novaluron	43.59
Non-ThryvOn No Organophosphates	05/30/2023	Thrips	Intrepid Edge® SC	Methoxyfenozide & Spinetoram	79.66
	06/19/2023	Tarnished Plant Bug	Centric® 40WG	Thiamethoxam	70.02
	07/10/2023	Tarnished Plant Bug	Transform® 50WG	Sulfoxaflor	70.02
		Cotton Bollworm	Vantacor® 5SC	Chlorantraniliprole	70.21
	07/17/2023	Tarnished Plant Bug	Endigo® ZCX	Lambda-cyhalothrin & Thiamethoxam	106.38
	07/31/2023	Tarnished Plant Bug	Transform® 50WG	Sulfoxaflor	70.02

Table 3. continued

Treatment Classification	Application Date	Pest(s)	Product Name	Common Name	Rate (g ai ha ⁻¹)
Non-ThryvOn No Sulfoxaflor	05/30/2023	Thrips	Intrepid Edge [®] SC	Methoxyfenozide & Spinetoram	79.66
	07/03/2023	Tarnished Plant Bug	Diamond [®] 0.83EC	Novaluron	43.59
			Acephate 90WDG	Acephate	756.25
	07/10/2023	Cotton Bollworm	Vantacor [®] 5SC	Chlorantraniliprole	70.21
07/17/2023	Tarnished Plant Bug	Diamond [®] 0.83EC	Novaluron	43.59	
		Acephate 90WDG	Acephate	504.17	

Table 4. Insecticide prices used to calculate net economic returns for each year

Insecticide Formulation	Insecticide Common Name	Insecticide Rate (g ai ha ⁻¹)	Insecticide Price ^z (\$ ha ⁻¹)
Alias 4F	Imidacloprid	140.16	2.59
Acephate 90WDG	Acephate	504.17	13.45
Acephate 90WDG	Acephate	756.25	20.17
Bidrin 8	Diclotophos	560.19	27.97
Brigade 2EC	Bifenthrin	112.04	16.37
Centric 40WG	Thiamethoxam	70.02	33.48
Diamond [®] 0.83EC	Novaluron	43.59	26.19
Dimethoate 4EC	Dimethoate	560.19	18.59
Endigo ZCX	Thiamethoxam & Lambda-cyhalothrin	106.38	32.47
Intrepid Edge SC	Methoxyfenozide & Spinetoram	79.66	18.60
Transform 50WG	Sulfoxaflor	70.02	20.10
Vantacor [®] 5SC	Chlorantraniliprole	70.21	65.90
Vydate C-LV	Oxamyl	560.97	41.51

^zInsecticide prices obtained from local pesticide suppliers.