

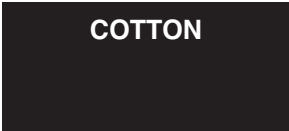
**COTTON INSECTICIDE PERFORMANCE RATING, 2018**

Rating Scale 0 = No control 10 = Excellent	Chemistry	Restricted Entry Interval (hours)	Restricted Use (R)	Thrips	Western Flower Thrips	Plant Bugs	Bollworm	Tobacco Budworm	Aphids**	Spider Mites**	Cutworm	Beet Armyworm	Fall Armyworm	Cabbage Looper	Soybean Looper	Saltmarsh Caterpillar	Green and Southern Green Stink Bug	Brown Stink Bug	Whitefly	Grasshopper
Aeris			X	8	6						5									
Cruiser	NEO	12		2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gaucho	NEO	12		7	4						0									0
Admire/Alias/Imidacloprid	NEO	12		7	1	6	0	0	3	0	0	0	0	0	0	0	2	2	0	2
AgLogic	Car	48	X	9	9															
Ammo	SyP	12	X	6	3	3	4	1	0	0	8	1	5	6	1	5	8	4	1	6
Asana XL/Adjourn	SyP	12	X	6	3	3	4	2	0	0	8	2	5	7	2	5	8	4	2	6
<i>Bacillus thuringiensis</i>	B	4		0	0	0	4	5	0	0	0	1	1	6	6	2	0	0	0	0
Baythroid XL	SyP	12	X	6	2	3	5	2		0	8	2	5	7	2	5	8	4	4	7
Belt	DM	12				3	8	9					8	9	9	7				
Bidrin/Dicromax	OP	144	X	6	5	8	0	0	5	3	0	0	0	0	0	1	9	9	3	7
Bidrin XP II	OP+SyP	144	X	6	5	8	5	2	6	7	8	2	5	7	2	5	9	9	3	7
Blackhawk	SP	4		1	1	0	7	9	0	0	7	9	7	9	9	3	0	0	0	2
Brigadier	NEO+SyP	12	X	6	5	7	5	2	6	7	8	2	5	7	2	5	8	7	6	7
Brigade/Discipline/Fanfare	SyP	12	X	6	2	4	5	2		7	6	2	5	7	2	5	8	7	6	8
Carbine	FL	12		5	1	4	0	0	8	0	0	0	0	0	0	0	2	2	0	2
Centric	NEO	12		4	4	7	0	0	5	0	0	0	0	0	0	0	7	6	8	2
Comite	PRO	144		0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0
Confirm	IGR	4		0	0	0	4	4	0	0	2	8	8	7	7	8	0	0	0	0
Denim	AV	12		1	1	0	8	9	0	5	7	9	8	9	9	3	0	0	0	2
Diamond	IGR	12		1	1	7*	4	4			1		8				4*	4*		
Dicofol	OC	12		0	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0
Dimethoate/Dimate	OP	48		6	2	5	0	0	5	3	0	0	0	0	0	1	5	4	3	6
Endigo	NEO+SyP	24	X	5	4	8	5	2	8	0	8	2	5	7	2	5	8	7	8	7
Intrepid	IGR	4		0	0	0	6	6	0	0	5	9	7	9	8	9	0	0	0	0
Intrepid Edge	IGR+SP	4		6	7		7	7					8	9	9	9				
Intruder/Strafer	NEO	12		6		7	0	0	8	0	0	0	0	0	0	0	1	1	9	0
Karate/Silencer/Lambda-Cy	SyP	24	X	6	2	3	5	2	0	0	8	2	5	7	2	5	8	4	2	7
Lannate	Car	72	X	1	0	3	4	4	5	0	5	4	7	7	7	4	5	3	0	6
Larvin	Car	48	X	0	0	0	6	6	0	0	5	5	7	8	8	4	2	2	0	5
Leverage 360	NEO+SyP	12	X	6	2	7	5	2	5	0	8	2	5	7	2	5	8	6	5	7
Mustang Maxx/Respect	SyP	12	X	6	3	3	5	2	0	0	8	3	5	7	2	5	8	7	2	7
Oberon	Misc	12								9										
Orthene/Acephate	OP	24		6	5	8	5	5	4	0	6	3	4	7	4	3	5	7	5	8
Portal	Misc	12								9										
Prevathon	DM	4				2	8	9					9	9	7					
Prolex/Declare	SyP	24	X	6	2	3	3	2	0	0	8	2	5	7	2	5	8	4	2	7
Radiant	SP	4		6	7															
Steward	OX	12		0	0	6	7	9	0	0	5	9	8	9	9	5	3	3		0
Vydate C-LV	Car	48	X	3	1	6	0	0	1	0	0	0	0	0	0	0	8	7	0	6
Zeal	ET	12								9										
Zoro/Abba/Agri-Mek/Epi-Mek	AV	12	X	0	0	0	0	8	0	9	0	0	0	0	0	0	0	0	0	0

\*Effective on nymphs only.

\*\*Cotton aphids and spider mites can be flared by use of broad spectrum insecticides such as synthetic pyrethroids.

Shaded boxes indicate products recommended for specific pests in this guide. The performance ratings in the chart are for comparison purposes only and are not necessarily a measure of percent control.



### QUICK VIEW THRESHOLD GUIDE

Insect	Threshold	Scouting Procedure
Tarnished plant bug (TPB)	3 TPB per 5 row feet or 2 TPB per 5 row feet (problem fields) or 8-12 per 100 sweeps from early squaring through cutout. After cutout (NAWF = 5), treat for 6 plant bugs per 5 row feet.	At least 2 drop cloth samples per area.
Bollworm (BW) and Tobacco budworm (TBW)	Non- <i>Bt</i> cotton: 1 BW or 1 TBW (< 0.25 inch) per 2 row feet <i>Bt</i> cotton: 6% damaged fruit	At least 3.5 row feet whole-plant samples per area.
Thrips	2-5 thrips per plant and damage present	At least 5 plants per area sampled with a cup or box.
Aphids	50% of plants infested with actively growing colonies present, if no predators are present	General visual observation, noting predator populations. See comments in aphid section.
Fall armyworm (FAW)	10-20 FAW per 100 plants	Examine as with BW and TBW, supplementing with drop cloth observations and counts in blooms.
Spider mites	50% of plants infested with actively growing colonies present	General visual observation, noting symptoms of feeding injury to leaves.
Stink bugs	1 stink bug per 6 row feet or 20% boll damage	At least 2 drop cloth samples per area or sample at least 25 quarter-sized bolls per area.

### INSECTICIDE TERMINATION GUIDE

Determine Date of Cutout using the earlier of Date of NAWF = 5 or Weather-restricted date (North AR: Aug. 8, Central AR: Aug. 14, South AR: Aug. 21)  
Record daily heat units (DD60s) from Date of Cutout. (DD60s are calculated by subtracting 60 from the average daily temperature.)

Insect	Termination Rules	
Tarnished plant bug	Cutout + 250 DD60s	Crop termination recommendations are based on long-standing and ongoing COTMAN research conducted by University of Arkansas System Division of Agriculture scientists. Date of Cutout is the flowering date of the last economically significant boll population. If a field reaches physiological cutout [average number of nodes above white flower = 5 (NAWF = 5)] in late July or early August in Arkansas, then heat units are accumulated from the NAWF = 5 date. Otherwise, heat units are accumulated from a seasonal cutout date based on historical weather for that production region. Typically, a boll needs 850 DD60s to mature with acceptable size and quality.
Bollworm and Tobacco budworm	Cutout + 350 DD60s	
Stink bugs	Cutout + 450 DD60s	
Fall armyworm	Cutout + 500 DD60s	

The weather-restricted, seasonal cutout date is the calendar date on which there is a 50% probability that the crop will have the benefit of late season temperatures sufficient to develop a mature boll. Seasonal cutout dates range across the state from Aug. 8 in northernmost parts of Arkansas (Clay County) to Aug. 21 in the most southern portions of the state (Ashley County).

### COTTON INSECT CONTROL

Insect	Insecticide	Formulation/Acre	Lb ai/Acre	Acres/Gallon	Application/Comments	Minimum Days From Last Application to Harvest
Thrips	<b>In Furrow</b>					
	acephate		0.75-1.0		Orthene-treated seed may require one or more foliar treatments for thrips control.	21
	Acephate 90S IFS	0.83-1.1 lb				
	Orthene 97 IFS	0.77-1.03 lb				
	Orthene 90S IFS	0.83-1.1 lb				
	aldicarb		0.5-0.75		DO NOT feed forage to livestock.	90
	AgLogic 15G	3.5-5 lb				
	imidacloprid	12.8 oz per 100 lb seed			Seed treatment.	
	Gaucho 600	0.375 mg ai/seed				
	imidacloprid + thiodicarb (R)				Commercially available seed treatment.	
	Aeris	0.75 mg ai/seed				
	Avicta Elite Cotton	see label			Seed treatment.	

COTTON INSECT CONTROL

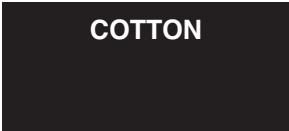
Insect	Insecticide	Formulation/Acre	Lb ai/Acre	Acres/Gallon	Application/Comments	Minimum Days From Last Application to Harvest
<b>Thrips</b> Treat with foliar sprays when 1st or 2nd true leaf emerges with noticeable damage from thrips. On larger seedlings, treat for an average of 5 thrips per plant and damage that may cause delayed growth or stunting of plants.	<b>Foliar Sprays</b>					
	acephate		0.2		Avoid tank-mixing organophosphate insecticides (acephate, Bidrin, dimethoate) with certain herbicides (Staple, Warrant, Dual, Liberty) as foliar burn may occur.	21
	Acephate 90 S	0.22 lb				
	Orthene 97 (See Generic Insecticides)	0.21 lb				
	dicrotophos (R) Bidrin/Dicromax 8 EC	3.2 oz	0.2	40	DO NOT apply more than 3.2 oz of Bidrin pre-bloom.	30
	dimethoate Dimethoate 4 EC	6.4 oz	0.2	20		14
	spinetoram Radiant 1 SC	1.5-3.0 oz	0.0117-0.0234	42.7-85.3	Use Radiant for early-season suppression. DO NOT use without an adjuvant.	28
<b>Western Flower Thrips</b>	acephate		0.5		Treatment should be made when at least 100 thrips are found per bloom plus some damage. Treatment is seldom warranted. Populations may resurge to treatment levels 10 days after treatment.	21
	Acephate 90 S	0.56 lb				
	Orthene 97 (See Generic Insecticides)	0.52 lb			Treat with foliar sprays when 1st or 2nd leaf emerges with noticeable damage from thrips. On larger seedlings, treat for an average of 5 thrips per plant and damage that may cause delayed growth or stunting of plants.	
	spinetoram Radiant 1 SC	1.5-3.0 oz	0.0117-0.0234	42.7-85.3	Use Radiant for early-season suppression. DO NOT use without an adjuvant.	28
<b>Tarnished Plant Bug/Fleahopper</b> Treat for 3 plant bugs per 5 row feet on normal fruiting fields. If small square set is less than 75%, treat for 2 plant bugs per 5 row feet. After last week of June in north Arkansas and the first week of July in south Arkansas, if small square set is less than 85%, treat for 2 plant bugs on 5 row feet. Treat for 8-12 per 100 sweeps when sampling with a sweep net. After cutout (NAWF=5), treat when 6 plant bugs per 5 row feet are found.	acephate		0.5-0.75		First two weeks of squaring, treat for plant bugs if square set is 75% or less and plant bugs are present.	21
	Acephate 90 S	0.56-0.83 lb				
	Orthene 97 (See Generic Insecticides)	0.31-0.77 lb			<b>Resistance Management</b> 1. Avoid using OPs prior to bloom. 2. Rotate classes of insecticide when possible. 3. Tank mix classes of insecticides for better control.	
	acetamiprid Strafer 70 WSP	3.0-3.5 oz	0.13-0.15		DO NOT make more than 2 applications/season.	28
	clothianidin Belay 50WDG	3-6 oz	0.05-0.1		DO NOT apply more than 12 oz/acre per season. DO NOT apply less than 7 days apart.	21
	dicrotophos (R) Bidrin/Dicromax 8 EC	4.8-8.0 oz	0.3-0.5	16-26.7		30
	dimethoate Dimethoate 4 E	8 oz	0.25	16		14
	flonicamid Carbine 50 WG	1.7-2.85 oz	0.053-0.089		DO NOT apply more than 8.4 oz or 3 applications of Carbine per season, allowing at least 7 days between applications.	30

**COTTON INSECT CONTROL**

<b>Insect</b>	<b>Insecticide</b>	<b>Formulation/Acre</b>	<b>Lb ai/Acre</b>	<b>Acres/Gallon</b>	<b>Application/Comments</b>	<b>Minimum Days From Last Application to Harvest</b>
<b>Tarnished Plant Bug/Fleahopper</b> (cont.) Treat for 3 plant bugs per 5 row feet on normal fruiting fields. If small square set is less than 75%, treat for 2 plant bugs per 5 row feet. After last week of June in north Arkansas and the first week of July in south Arkansas, if small square set is less than 85%, treat for 2 plant bugs on 5 row feet. Treat for 8-12 per 100 sweeps when sampling with a sweep net. After cutout (NAWF=5), treat when 6 plant bugs per 5 row feet are found.	imidacloprid <i>(See Generic Insecticides)</i>				<b>Terminate sprays for plant bugs after NAWF = 5 + 250 heat units.</b>	14
	Admire Pro 4.6 SC	1.7 oz	0.062	75		
	Imidacloprid 4 F	2.0 oz	0.062	64		
	Alias/Couraze 4 F	2.0 oz	0.062	64		
	Couraze 2 F	4.0 oz	0.0625	32		
	Couraze 1.6 F	5.0 oz	0.0625	25.6		
	oxamyl (R) Vydate 3.77 CLV	10.5-17 oz	0.31-0.5	7.5-12.2	DO NOT apply more than 0.5 lb ai Vydate per application and 4 lb ai per season. DO NOT graze treated fields.	14
	thiamethoxam Centric 40 WG	1.75-2.5 oz	0.044-0.0625		DO NOT exceed a total of 5 oz of Centric per acre during each growing season. Allow at least 5 days between applications. DO NOT apply Centric within 45 days of neonicotinoid seed treatment (Cruiser, Gaucho, Aeri, Avicta). Use higher rates of Centric on high populations on larger cotton.	21
	sulfoxaflor Transform 50 WG	1.5-2.25 oz	0.047-0.071		Notifying known beekeepers within 1 mile of the treatment area 48 hours before the product is applied will allow them to take additional steps to protect bees. If known apiaries are within 1 mile of cotton fields intended for treatment, applications should be made within 3 hours of sunset during the flowering period. Prior to use of Transform WG, growers and beekeepers hosted on their farm are advised to implement cooperative standards outlined in the Arkansas Pollinator Stewardship Program.	14
	<b>NOT CURRENTLY LABELED – DO NOT USE UNTIL SECTION 18 IS APPROVED FOR USE IN COTTON IN ARKANSAS.</b>					
<b>Tank Mix Insecticide</b>						
	novaluron Diamond 0.83 EC	6-9 oz	0.039-0.058	14.2-21.3	Effective on nymphs only. Tank mix with a recommended insecticide for control of adults. DO NOT apply more than 4 applications or 42 oz of Diamond per season.	30
<b>Bollworm</b> Treat for 7,000 (1 per 2 row feet) small larvae (< 0.25 inch) per acre (non-Bt cotton). If larger larvae (> 0.25 inch) begin to develop in fields, treat for 14,000 damaged squares (1 per row foot) plus eggs and small larvae. Time insecticide applications to egg hatch (non-Bt cotton).	<b>Pyrethroids</b>					
	beta-cyfluthrin (R) Baythroid XL 1 EC	1.6-2.6 oz	0.012-0.013	49-80	In recent years, pyrethroids have shown reduced efficacy and can be expected to provide poor to moderate control.	0
	bifenthrin (R) Brigade 2 EC <i>(See Generic Insecticides)</i>	2.56-6.4 oz	0.04-0.1	20-50	Consider tank-mixing with another chemistry when using a pyrethroid to control bollworm.	14
	cyfluthrin (R) Tombstone 2 EC <i>(See Generic Insecticides)</i>	1.6-2.6 oz	0.025-0.041	49-80		0
	cypermethrin (R) Ammo 2.5 EC	2-5 fl oz	0.04-0.1	25-62.5		14
	esfenvalerate (R) Asana XL 0.66 EC <i>(See Generic Insecticides)</i>	5.8-9.6 oz	0.03-0.05	13-22		21

**COTTON INSECT CONTROL**

<b>Insect</b>	<b>Insecticide</b>	<b>Formulation/Acre</b>	<b>Lb ai/Acre</b>	<b>Acres/Gallon</b>	<b>Application/Comments</b>	<b>Minimum Days From Last Application to Harvest</b>
<b>Bollworm</b>  On <i>Bt</i> cotton, treat when damage levels to fruiting structures (squares/bolls) reaches 6%.	<b>Pyrethroids</b>					
	gamma-cyhalothrin 1.25 (R) Prolex/Declare	1.28-2.05 oz	0.0125-0.02	62.5-100	<b>Terminate sprays for bollworm control after NAWF = 5 + 350 heat units or 350 heat units past the last effective boll date for your area.</b>	21
	lambda-cyhalothrin (R) Karate Z 2.08 CS (See <i>Generic Insecticides</i> )	1.6-2.56 oz	0.025-0.04	50-80		21
	zeta-cypermethrin 0.8 EC (R) Mustang Maxx/Respect	2.64-4.0 oz	0.0165-0.025	32-48		14
	<b>Carbamates</b>					
	methomyl (R) Lannate 90 SP Lannate 2.4 LV	0.5-0.75 lb 1 1/2-2 1/4 pt	0.45-0.675	3.6-5.3	Lannate may redden cotton. If excessive, stop use or alternate with other insecticides. Use Lannate as an occasional spray in regular schedule but not more than every 10 days.	15
	thiodicarb (R) Larvin 3.2 F	1 3/4-2 1/4 pt	0.7-0.9	3.5-4.6		28
	<b>Other Classes of Insecticides</b>					
	chlorantraniliprole Prevathon 0.43 SC	14-27 oz	0.045-0.088	4.1-9.7		21
	emamectin benzoate Denim 0.16 EC	8-12 oz	0.01-0.015	10.7-16		21
	flubendiamide Belt 4 SC	2-3 oz	0.062-0.094	42.7-64	DO NOT apply Belt more than 3 times per season.	28
	indoxacarb Steward 1.25 SC	9.2-11.3 fl oz	0.09-0.11	11.3-14		14
	lambda-cyhalothrin + chlorantraniliprole (R) Besiege 1.25 SC	6.5-12.5 oz	0.417-0.835	10.24-19.7	Use higher rates with heavy infestations.	21
	methoxyfenozide + spinetoram Intrepid Edge 3 F	6-8 oz	0.14-0.188	16-21.3	DO NOT apply at closer than 4-day intervals and no more than 6 applications per year.	28
	spinosad Blackhawk	2.4-3.2 oz	0.054-0.07		DO NOT apply more than 20 oz of Blackhawk per year.	28
<b>Tobacco Budworm</b>	<b><u>Bt Cotton</u></b>				Cotton varieties expressing the <i>Bt</i> ( <i>Bacillus thuringiensis</i> ) protein are very effective against the tobacco budworm.	
<i>See notes on the following page.</i>	Bollgard II, WideStrike, WideStrike III, TwinLink					
	<b>Carbamates</b>					
	methomyl (R) Lannate 90 SP Lannate 2.4 LV	0.5-0.75 lb 1 1/2-2 1/4 pt	0.45-0.675	3.6-5.3	Lannate may redden cotton. If excessive, stop use or alternate with other insecticides. Use Lannate as an occasional spray in regular schedule but not more than every 10 days.	15
thiodicarb (R) Larvin 3.2 F	1 3/4-2 1/4 pt	0.7-0.9	3.5-4.6	28		



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<b>Insect</b>	<b>Insecticide</b>	<b>Formulation/Acre</b>	<b>Lb ai/Acre</b>	<b>Acres/Gallon</b>	<b>Application/Comments</b>	<b>Minimum Days From Last Application to Harvest</b>	
<b>Tobacco Budworm</b> (cont.)	<b>Other Classes of Insecticides</b>						
Time insecticide application to egg hatch. Under heavy pressure, do not reduce rates. Treat for 7,000 (1 per 2 row feet) small larvae (less than 1/4 inch) per acre. If larger larvae begin to develop in fields, treat for 3,500 (1 per 4 row feet) larvae.  When damage to squares occurs, treat for 14,000 damaged squares (1 per row foot) plus eggs and small larvae.	chlorantraniliprole Prevathon 0.43 SC	14-27 oz	0.045-0.088	4.7-9.1		21	
	emamectin benzoate Denim 0.16 EC	8-12 oz	0.01-0.015	10.7-16		21	
	flubendiamide Belt 4 SC	2-3 oz	0.062-0.094	42.7-64	DO NOT apply Belt more than 3 times per season.	28	
	indoxacarb Steward 1.25 SC	11.3 fl oz	0.11	11.5	<b>Terminate sprays for tobacco budworm control after NAWF = 5 + 350 heat units or 350 heat units past the last effective boll date for your area.</b>	14	
	lambda-cyhalothrin + chlorantraniliprole (R) Besiege 1.25 SC	6.5-12.5 oz	0.417-0.835	10.24-19.7		21	
	methoxyfenozide + spinetoram Intrepid Edge 3 F	6-8 oz	0.14-0.188	16-21.3	DO NOT apply at closer than 4-day intervals and no more than 6 applications per year.	28	
	spinosad Blackhawk	2.4-3.2 oz	0.054-0.07		DO NOT apply more than 20 oz of Blackhawk per year.	28	
	<b>Aphid</b>	<b>Aphid Management and Control</b>					
		Treatment for aphids alone seldom results in a yield increase.					
		1. Resistance to neonicotinoid insecticides (imidacloprid, Intruder, Centric) has developed. Avoid unnecessary/automatic applications of these insecticides when aphids are present.					
	2. Threshold: When populations are building and aphid colonies are present on approximately 50% of the plants:						
	a. If there are less than 0.3 lady beetle adults AND less than 0.2 lady beetle larvae (per row-ft), <u>treat</u> .						
	b. If there are at least 0.3 lady beetle adults OR 0.2 lady beetle larvae (per row-ft), <u>do not treat, but resample within 7 days</u> .						
	i. If aphid population is still increasing after 7 days, <u>treat</u> , otherwise continue normal sampling interval.						
	3. The aphid fungus is very effective in reducing aphid populations in early to mid-July. Fields should be checked for fungus before treatments are applied. If confident the fungus is present in 15% of the aphid population, do not treat.						
	acetamiprid Intruder/Strafer 70 WP	0.8-1.1 oz	0.035-0.05			28	
	flonicamid Carbine 50 WG	1.41-2.02 oz	0.044-0.063		DO NOT apply more than 3 applications of Carbine per season, allowing at least 7 days between applications.	30	
<b>Spider Mites</b>	<b>abamectin (R)</b>						
Treat when 50% of plants are infested. Early-season spot treatments may be beneficial in preventing spread of mites across the field.	Agri-Mek 0.7 SS (See Generic Insecticides)	1.3-2.6 fl oz	0.0046-0.00188	49-98	Use lower rates early season for Agri-Mek when cotton is small. DO NOT apply more than 7 fl oz in any growing season. Must be applied with a non-ionic surfactant in a minimum of 5 gallons per acre. DO NOT graze or feed cotton foliage.	20	
	dicofol Dicofol 4 E	1 1/2-3 pt	0.75-1.5	2.66-5.3	Dicofol should not be applied more than two times per season.	30	

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<b>Insect</b>	<b>Insecticide</b>	<b>Formulation/Acre</b>	<b>Lb ai/Acre</b>	<b>Acres/Gallon</b>	<b>Application/Comments</b>	<b>Minimum Days From Last Application to Harvest</b>
<b>Spider Mites</b>	fenpyroximate Portal XLO 0.4EC	0.75-2 pt	0.0375-0.1	4-10.7	DO NOT apply more than 2 pints per season.	14
	bifenthrin (R) Brigade 2 EC <i>(See Generic Insecticides)</i>	3.8-6.4 oz	0.06-0.1	20-33	Avoid unnecessary use of pyrethroid insecticides as they can flare spider mite populations.	14
	etoxazole Zeal	0.66-1.0 oz	0.03-0.045			28
	propargite Comite 6.55	1 1/2-2 pt	1.23-1.64	4.0-5.3	DO NOT apply Comite until cotton is 12 inches tall. When spider mite populations are high, 2 applications at 5- to 7-day intervals are required using 25-40 gal of water by ground and 5-15 gallons by air.	50
	spiromesifan Oberon 2 SC	8-16 oz	0.125-0.25	8-16		30
<b>Cutworm</b>	acephate Acephate 90 S Orthene 97 <i>(See Generic Insecticides)</i>	1.0 lb 0.93 lb	0.9		Maintain 2-3 plants per row ft. Cutworm control is most effective when ground applications are made and sprays are directed (banded) to the base and lower portion of the plant.	21
	beta-cyfluthrin (R) Baythroid XL 1 EC	0.8-1.6 oz	0.007-0.013	80-160	Stale seedbed/no-till fields, fields with cover crops and/or heavy spring weed pressure or fields with a history of cutworm problems should be considered high-risk fields. Consider preventative pyrethroid applications for cutworm in these situations utilizing a 1/3 band applicator behind the planter.	0
	bifenthrin (R) Brigade 2 EC <i>(See Generic Insecticides)</i>	2.4-6.4 oz	0.04-0.1	20-49.2		14
	cyfluthrin (R) Tombstone 2 EC <i>(See Generic Insecticides)</i>	0.8-1.6 oz	0.013-0.025	80-160		0
	cypermethrin (R) Ammo 2.5 EC	1.3-5.0 oz	0.025-0.1	25-100		14
	esfenvalerate (R) Asana XL 0.66 EC <i>(See Generic Insecticides)</i>	5.5-9.6 oz	0.03-0.05	22-40		21
	gamma-cyhalothrin 1.25 (R) Prolex/Declare	0.77-1.02 oz	0.0675-0.01	125-166		21
	lambda-cyhalothrin (R) Karate Z 2.08 CS <i>(See Generic Insecticides)</i>	0.96-1.28 oz	0.015-0.02	100-133		21
	thiodicarb (R) Larvin 3.2 F	24 oz	0.6	5.3		28
	zeta-cypermethrin 0.8 EC (R) Mustang Maxx/Respect	1.28-1.92 oz	0.008-0.012	67-100		14

**COTTON INSECT CONTROL**

<b>Insect</b>	<b>Insecticide</b>	<b>Formulation/Acre</b>	<b>Lb ai/Acre</b>	<b>Acres/Gallon</b>	<b>Application/Comments</b>	<b>Minimum Days From Last Application to Harvest</b>
<b>Beet Armyworm</b> Apply treatment when field scouting reveals "hits" 3-5 or more or egg hatch or small larvae. Mixtures may increase activity. Adding 1 qt of crop oil may aid in control. Beet armyworm infestations are difficult to control, and the listed insecticides may only give suppression.	chlorantraniliprole Prevathon 0.43 SC	14-27 oz	0.045-0.09	4.7-9.1		21
	emamectin benzoate Denim 0.16 EC	6-8 oz	0.0075-0.01	16-21		21
	flubendiamide Belt 4 SC	2-3 oz	0.063-0.094	42.7-64	DO NOT apply Belt more than 3 times per season.	28
	indoxacarb Steward 1.25 SC	9.2-11.3 fl oz	0.09-0.11	11.5-14		14
	lambda-cyhalothrin + chlorantraniliprole (R) Besiege 1.25 SC	6.5-12.5 oz	0.417-0.835	10.24-19.7		21
	methoxyfenozide Intrepid 2 F	4-10 oz	0.06-0.16	12.8-32		14
	methoxyfenozide + spinetoram Intrepid Edge 3 F	4-8 oz	0.09-0.188	16-32	DO NOT apply at closer than 4-day intervals and no more than 6 applications per year.	28
	spinosad Blackhawk	2.4-3.2 oz	0.054-0.07		DO NOT apply more than 20 oz of Blackhawk per year.	28
<b>Fall Armyworm</b> Treat for 10-20 fall armyworms per 100 plants.	chlorantraniliprole Prevathon 0.43 SC	14-27 oz	0.045-0.09	4.7-9.1		21
	emamectin benzoate Denim 0.16 EC	8-12 oz	0.01-0.015	10.7-16	<b>Terminate sprays for fall armyworm control after NAWF = 5 + 500 heat units past the last effective boll date for your area.</b>	21
	flubendiamide Belt 4 SC	2-3 oz	0.063-0.094	42.7-64	DO NOT apply Belt more than 3 times per season.	28
	indoxacarb Steward 1.25 SC	9.2-11.3 fl oz	0.09-0.11	11.3-13.9		14
	lambda-cyhalothrin + chlorantraniliprole (R) Besiege 1.25 SC	6.5-12.5 oz	0.417-0.835	10.24-19.7		21
	methomyl (R) Lannate 2.4 LV Lannate 90 SP	1 1/2-2 1/4 pt 0.50-0.75 lb	0.45-0.675	3.6-5.3	Lannate may redden cotton. If excessive, stop use or alternate with other insecticides.	15
	methoxyfenozide Intrepid 2 F	4-10 oz	0.06-0.16	12.8-32		14
	methoxyfenozide + spinetoram Intrepid Edge 3 F	6-8 oz	0.14-0.188	16-21.3	DO NOT apply at closer than 4-day intervals and no more than 6 applications per year.	28
	novaluron Diamond 0.83 EC	6-12 oz	0.039-0.078	10.7-21.3		30



COTTON INSECT CONTROL

Insect	Insecticide	Formulation/Acre	Lb ai/Acre	Acres/Gallon	Application/Comments	Minimum Days From Last Application to Harvest
<b>Fall Armyworm</b>	profenofos (R) Curacron 8 E	3/4-1 pt	0.75-1.0	8.0-10.67	Continuous agitation during mixing, filling and application is required.	14
	spinosad Blackhawk	2.4-3.2 oz	0.054-0.07		Pyrethroids at maximum labelled rates will provide control if timed to egg lay and small larvae.	28
	thiodicarb (R) Larvin 3.2 F	1 1/2-2 1/4 pt	0.6-0.9	3.5-5.3		28
<b>Cabbage Looper Soybean Looper</b>  Economic damage seldom occurs; treat when 25% defoliation occurs and bolls are still being developed.	<i>Bacillus thuringiensis</i>	Check label.				
	chlorantraniliprole Prevathon 0.43 SC	20-29 oz	0.067-0.097	4.4-6.4		21
	emamectin benzoate Denim 0.16 EC	8-12 oz	0.01-0.015	10.7-16		21
	flubendiamide Belt 4 SC	2-3 oz	0.062-0.094	42.7-64	DO NOT apply Belt more than 3 times per season.	28
	indoxacarb Steward 1.25 SC	6.7-9.2 fl oz	0.065-0.09	14-19		14
	lambda-cyhalothrin + chlorantraniliprole (R) Besiege 1.25 SC	10.5-12.5 oz	0.417-0.835	10.24-12.2		21
	methoxyfenozide Intrepid 2 F	4-10 oz	0.0625-0.156	12.8-32		14
	methoxyfenozide + spinetoram Intrepid Edge 3 F	4-8 oz	0.094-0.188	16-32	DO NOT apply at closer than 4-day intervals and no more than 6 applications per year.	28
	spinosad Blackhawk	2.4-3.2 oz	0.054-0.07		DO NOT apply more than 20 oz of Blackhawk per year.	28
	thiodicarb (R) Larvin 3.2 F	1 1/2-2 1/4 pt	0.6-0.9	3.6-5.3		28
<b>Stink Bugs (Green and Southern Green)</b>  Treat when stink bugs exceed 1 bug per 5 row feet or when 20% of medium bolls display internal signs of feeding and stink bugs are observed.  (cont. next page)	acephate Acephate 90 Orthene 97 (See Generic Insecticides)	0.83 lb 0.77 lb	0.75		<b>Terminate sprays for stink bugs after NAWF = 5 + 450 heat units.</b>	21
	beta-cyfluthrin (R) Baythroid XL 1 EC	1.6-2.6 oz	0.013-0.021	48-80	DO NOT graze after applying Baythroid, Karate, Respect, Mustang Maxx, Asana XL or Adjourn.	0
	bifenthrin (R) Bidrin/Dicromax 8 EC (See Generic Insecticides)	3.8-6.4 oz	0.06-0.1	20-33	<b>Terminate sprays for stink bugs after NAWF = 5 + 450 heat units.</b>	14
	cyfluthrin (R) Tombstone 2 EC (See Generic Insecticides)	1.6-2.6 oz	0.025-0.041	49-80		0

**COTTON INSECT CONTROL**

<b>Insect</b>	<b>Insecticide</b>	<b>Formulation/Acre</b>	<b>Lb ai/Acre</b>	<b>Acres/Gallon</b>	<b>Application/Comments</b>	<b>Minimum Days From Last Application to Harvest</b>
<b>Stink Bugs (Green and Southern Green)</b>  Check at least 25-50 bolls per 40 acres. Many pyrethroids, at bollworm rates, will provide good control of "green" species, but "brown" species are less susceptible to insecticides, specifically pyrethroids.	dicrotophos (R) Bidrin/Dicromax 8 EC	4.8-8.0 oz	0.3-0.5	16-26.7	DO NOT apply more than 16 oz Bidrin per season during bloom. DO NOT make applications of Bidrin closer than 14 days apart.	30
	esfenvalerate (R) Asana XL 0.66 EC <i>(See Generic Insecticides)</i>	5.8-9.6 oz	0.03-0.05	13-22		21
	lambda-cyhalothrin (R) Karate Z 2.08 CS <i>(See Generic Insecticides)</i>	1.6-2.56 oz	0.025-0.04	50-80		21
	oxamyl (R) Vydate 3.77 CLV	13.6 oz	0.4	9.4		14
	zeta-cypermethrin 0.8 EC (R) Mustang Maxx/Respect	2.64-3.6 oz	0.016-0.022	35.6-48.5		14
<b>Brown Stink Bug</b>  Treat when stink bugs exceed 1 bug per 5 row feet or when 20% of medium bolls display internal signs of feeding and stink bugs are observed. Check at least 25-50 bolls per 40 acres.	acephate Orthene 90 S Orthene 97 <i>(See Generic Insecticides)</i>	0.83 lb 0.77 lb	0.75		<b>Terminate sprays for stink bugs after NAWF = 5 + 450 heat units.</b>	21
	bifenthrin (R) Brigade 2 EC <i>(See Generic Insecticides)</i>	3.8-6.4 oz	0.06-0.1	20-33		14
	dicrotophos (R) Bidrin 8 EC	8 oz	0.5	16		30
<b>Whitefly</b>  Treat infested areas when 50% of the plants are infested.	acephate Orthene 90 S Orthene 97 <i>(See Generic Insecticides)</i>	0.56-1.1 lb 0.52-1.1 lb	0.5-1.0	8-16		21
	acetamiprid Intruder 70 WP	1.7-2.3 oz	0.75-0.1			28
	bifenthrin (R) Brigade 2 EC <i>(See Generic Insecticides)</i>	3.8-6.4 oz	0.06-0.1	20-33		14
	thiamethoxam Centric 40 WG	2 oz	0.05		DO NOT exceed a total of 5 oz of Centric/acre during each growing season. Allow at least 5 days between applications. DO NOT apply Centric within 45 days of neonicotinoid seed treatment (Cruiser, Gaucho, Aeris, Avicta).	21

**COTTON INSECT CONTROL**

<b>Insect</b>	<b>Insecticide</b>	<b>Formulation/Acre</b>	<b>Lb ai/Acre</b>	<b>Acres/Gallon</b>	<b>Application/Comments</b>	<b>Minimum Days From Last Application to Harvest</b>
<b>Multiple Pests</b>	bifenthrin (R) + avermectin Athena 0.87 E	10-17 oz	0.068-0.116	7.5-12.8	DO NOT graze.	20
	chloryrifos + lambda-cyhalothrin (R) Cobalt Advanced 2.63 EC	16-38 oz	0.33-0.76	3.4-8.0	For control of multiple pests exceeding thresholds, including but not limited to the following: bollworm, aphids, plant bugs, spider mites and stink bugs.	21
	dicrotophos/bifenthrin (R) Bidrin XP II	8-12.8 oz	0.31-0.5	10-16		30
	imidacloprid/beta-cyfluthrin (R) Leverage 360 SC	2.8-3.2 oz	0.067-0.075	40-45.7		14
	imidacloprid/bifenthrin (R) Brigadier 2 SC Swagger 1 SC	3.8-7.7 oz 7.6-15.4 oz	0.06-0.12	16.6-33.7 8.3-16.8		14
	gamma-cyhalothrin + spinosad (R) Consero 5.25 SC	2.8-4 oz	0.054-0.083	32-45		28
	lambda-cyhalothrin + chlorantraniliprole (R) Besiege 1.25 SC	6.5-12.5 oz	0.417-0.835	10.24-19.7		21
	lambda-cyhalothrin + thiamethoxam (R) Endigo 2.06 ZC	4.5-5.5 oz	0.072-0.09	28.4-36.6		21
	zeta-cypermethrin + bifenthrin + imidacloprid (R) Triple Crown 2.25	4.5-6.4 oz	0.079-0.112	20-28.4	DO NOT graze.	14