

**TABLE 14: Insect pest and damage thresholds**

Insect pest	Planting to flowering (1 flower/m)	Flowering to 1 open boll/m	1 open boll/m to harvest		Comments
			Up to 15% open	After 15% open	
<b>Helicoverpa spp. in conventional cotton</b>					
White eggs/m	–	–	–	–	
Brown eggs/m	–	5	5	5	
Total larvae/m	2	2	3	5	
Medium and large larvae/m	1	1	1	2	
Helicoverpa Tip damage (% of plants affected)	100–200% (100% of plants tipped once or twice)	–	–	–	
<b>Helicoverpa spp. in Bollgard II cotton</b>					
<b>All season</b>					
White eggs/m		–			
Brown eggs/m		–			
Total larvae/m (excluding larvae < 3 mm)		2/m over 2 consecutive checks			
Medium and large larvae/m		1/m on the first check			
<b>Green mirids</b>					
Adults and nymphs/m					
cool region – visual	0.7	0.5	–	–	
warm region – visual	1.3	1.0	–	–	
cool region – beatsheet	2	1.5	–	–	
warm region – beatsheet	4	3	–	–	
Fruit retention	< 65%	< 65%	–	–	
Boll damage		20%	20%	20%	
Tip damage (% of plants affected) (heavy)	20%	–	–	–	
(light)	50%	–	–	–	
<b>Cotton aphid (check species)</b>					
Presence of adults and nymphs	Calculate Cumulative Season Aphid Score*	Calculate Cumulative Season Aphid Score	50% infestation	50% infestation	Until 1% of the bolls are open calculate the Cumulative Season Aphid Score to determine the threshold. * When using this Score in very young cotton, yield loss predictions should be treated with caution as in many cases aphid populations will naturally decline.
Honeydew presence	–	monitor for the presence of honeydew	10% infestation if honeydew present	10% infestation if honeydew present	Once open bolls are present in the crop, use 50% infestation. When 1% of bolls are open and honeydew is present, the aphid threshold is reduced to 10% infestation. Check field borders and spray them separately where necessary. Some cotton aphid strains are resistant to organophosphates and carbamates. Aphids can carry and transmit cotton bunchy top virus. Monitor plants in aphid hotspots for symptoms of this disease, such as mottling of leaf margins.

**TABLE 14: Insect pest and damage thresholds (continued)**

Insect pest	Planting to flowering (1 flower/m)	Flowering to 1 open boll/m	1 open boll/m to harvest		Comments
			Up to 15% open	After 15% open	
<b>Green peach aphid</b>					
% of plants infested	25%				May be a problem early season, populations normally decline in hot weather. Some populations are resistant to organophosphates and carbamates.
<b>Mites</b>					
% of leaves infested	30% Normally suppressed by predators. Use the table on page 21.	30% or population increases at > 1% of infested plants/day in 2 consecutive checks	> 60%	No effect on yield after 20% bolls open.	A nominal threshold of 30% of leaves infested is used from seedling emergence up to 20% of bolls open. Alternatively, use the table on page 21 to base thresholds on potential yield loss. Yield loss is estimated using time of infestation and rate of population increase.
<b>Thrips</b>					
Adults and nymphs/plant	10	–	–		Control is justified if there are 10 thrips/plant plus the reduction in leaf area due to thrips is greater than 80% (roughly leaves less than 1 cm long). Control is also justified if there is a reduction in leaf area of more than 50% once the plant has reached the six true leaf stage. Thereafter, thrips are unlikely to affect the yield or maturity date of cotton crops. If conditions were cool or the plant had another set-back then the thresholds could be reduced.
Damage (reduction in leaf area)	80%	–	–		
<b>Green vegetable bug</b>					
Visual	–	0.5	0.5		Green vegetable bug cause significantly more damage to bolls less than 21 days old and prefer bolls 10 days old or less. Older bolls are generally not preferred. Instars 4, 5 and adults do the same amount of damage. Instar 3 does half the damage of instar 4 and 5 and adults. A cluster (more than 10) of first and second instars does as much damage as one adult. Thresholds are in adult equivalents.
Beat sheet, OR	–	1	1		
Damage to small bolls (14 day old)	–	20%	20%		
<b>Pale cotton stainers</b>					
Visual	–	1.5	1.5		Threshold is based on relationship between cotton stainer damage and damage caused by other plant bugs. Both nymphs (usually 3rd to 5th stage nymphs) and adults cause similar amounts of damage.
Beat sheet		3	3		
Damaged bolls (%)		30%	30%		
<b>Cotton leafhopper</b>					
(jassids)/m	50	–	–		
<b>Tipworm</b>					
Larvae/m	1–2	–	–		Sample for tipworm up until first flower. Larvae tend to burrow into the terminals and squares so may not be found using the beat sheet or sweep nets. Visual sampling methods are the most accurate. Bollgard II cotton provides good control of tipworm.
Tip damage (% of plants affected) (not entrenched)	100–200%	–	–		
(entrenched)	50–100%	–	–		
<b>Armyworm</b>					
Large larvae/m	1	–	–	–	
Small larvae/m	2	–	–	–	
<b>Rough bollworm</b>					
Larvae/m	2	3	3		Susceptibility to rough bollworm starts when there are more than 5 bolls/m over 2 weeks old. Susceptibility ceases when there are fewer than 5 growing bolls/m less than 2 weeks old. Bollgard II cotton provides good control of rough bollworm.
Damaged bolls (%)	–	3%	3%		
<b>Pink spotted bollworm</b>					
% bolls infested	–	5	5		The threshold for pink spotted bollworm is based on the infestation as determined by examining inner boll walls. Bollgard II cotton provides good control of pink spotted bollworm.
<b>Loopers</b>					
Larvae/m	–	20	50		