

# 2009 - 2010 Insecticide Resistance Management Strategy for Cotton

## Central

### Darling Downs, Balonne, Macintyre, Gwydir, Lower & Upper Namoi, Bourke

	Stage 1	Stage 2	Stage 3	Stage 4		
		Dec 15	Jan 15	Feb 15		
See Cotton Pest Management Guide for suggested thresholds		Maximum 2 consecutive sprays of any one insecticide group, alone or in mixtures			Post-Harvest Sprayed conventional cotton crops defoliated after 9th March are more likely to harbour insecticide resistant diapausing <i>Helicoverpa armigera</i> pupae and should be pupae busted as soon as possible after picking and no later than the end of August	
	Helicoverpa	FOLIAR <i>Bacillus thuringiensis</i> (BT) - on conventional and Bollgard cotton but EXCLUDING any refuges				
		HELICOVERPA VIRUSES - (GEMSTAR, VIVUS) avoid season long use of low rates				
		CANOPY OIL , ABRADE - No restrictions				
		AMITRAZ - Max of 4				
		ENDOSULFAN - see label for restrictions				
		AFFIRM - February 1				
		ABAMECTIN - for <i>H. punctigera</i> , Max of 2, including mite sprays				
		December 1 ALTACOR - Max of 3				
		STEWARD* - Max of 3				
		PYRETHROIDS & PYRETHROID MIXES - PBO, Max of 2 - TALSTAR sprays, Max of 2, including mite sprays.				
		February 1 CHLORPYRIFOS - Max of 3 including mixtures Other OPs - Max of 3 including mixtures METHOMYL - Max of 4 carbamates Including mixtures THIODICARB - Max of 4 carbamates Including mixtures				
		* October 15 <sup>th</sup> No use of Steward or Tracer on chickpeas after this date				
		PRODIGY - Max of 3				
		December 1 TRACER* - Max of 3				
INTREPID - Max of 1 at any rate including mite sprays						
February 1 CHLORPYRIFOS METHYL - Max of 3 including mixtures PROFENOFOS - Max of 3 including mixtures						
					Registered but currently commercially unavailable insecticides	



	Stage 1	Stage 2	Stage 3	Stage 4					
		Dec 15	Jan 15	Feb 15					
See Cotton Pest Management Guide for suggested thresholds	1. Maximum 2 sprays per mode of action group, including mixtures, unless otherwise indicated below. 2. Rotate chemistry. No consecutive use of the same group 3. Failures with neonicotinoids against aphids have been confirmed. Do not follow a seed or planting insecticide with the first foliar spray from the same group. <b>ALTERNATE</b>					With-holding Period	Post-Crop Management		
	Aphids	Canopy Oil - No restrictions						Nil See label	
		CRUISER GAUCHO / GENERO AMPARO } Seed dressing						Nil See label	
		CONFIDOR - Finish date determined by long withholding period						91 days	
		ACTARA, INTRUDER, SHIELD						28, 10 & 5 days	
		PIRIMICARB - January 1 Use when beneficial conservation is important						21 days	
		FULFILL - Crop must be actively growing - Finish date determined by crop growth (see label)						28 days	
		ENDOSULFAN - see label for restrictions						28 days	
		February 1 DIMETHOATE & OMETHOATE						14 & 21 days	
		CHLORPYRIFOS-METHYL - see Helicoverpa strategy						5 days	
		ALDICARB - In furrow at sowing						Nil See label	
		PHORATE - in furrow at sowing or side dress						70 days	
		February 1 CHLORPYRIFOS - See Helicoverpa strategy						28 days	
		Start date determined by canopy closure (see label) PECASUS						14 days	
		February 1 PROFENOFOS - See Helicoverpa strategy						28 days	
Aphids and Mites		DICOFOL - NSW only + Ground application only					7 days		
	PARAMITE - Max of 1					21 days			
	ABAMECTIN - Max of 2, including <i>H. punctigera</i> sprays					20 days			
	Don't use pre squaring PROPARGITE					28 days			
	TALSTAR - sprays, Max of 2, including Helicoverpa sprays.					14 days			
Mites	INTREPID - Max of 1 at any rate including Helicoverpa sprays					28 days			
	See Silver Leaf Whitefly Matrix and associated Notes								
	WARNING Avoid early season omethoate/dimethoate use as it may compromise their efficacy and pirimicarb efficacy against aphids as well as flare other pests including silver leaf whitefly.								
SLW Mirids									



**STOP**  
Over resistant populations by practising good farm hygiene (see IPM Guidelines)



Chemical Groups for Rotation	Effective against		
	Helicoverpa (14)	Mites (7)	Aphids (7)
Group. Chemical: Sold as			
16A. METHOXYFENOZIDE (IGR): PRODIGY			
11C. BT: DIPEL, COSTAR, MVP2, etc			
VIRUS. HELICOVERPA VIRUS (NPV's: GEMSTAR, VIVUS)			
OTHERS. CANOPY, ABRABE			Canopy
28. RYNAXYPYR: ALTACOR			
5A. SPINOSAD: TRACER			
3A. PYRETHROID: BULLDOCK, DECIS, DOMINEX, FASTAC, KARATE, etc			
3A. PYRETHROID (BIFENTHRIN): TALSTAR		Suppress only	
19A. AMITRAZ: AMITRAZ, OVASYN etc			
2A. ENDOSULFAN: THIODAN etc.			
22A. INDOXACARB: STEWARD			
6A. AVERMECTIN: EMAMECTIN BENZOATE (AFFIRM)		Suppress only	
6A. AVERMECTIN: ABAMECTIN (WIZARD etc)	<i>H. punctigera</i> only		
1A. CARBAMATES: METHOMYL (NUDRIN, LANNATE etc), THIODICARB (LARVIN etc)			
1A. CARBAMATE at planting: ALDICARB			No cross resistance
1A. CARBAMATE Foliar: (PIRIMICARB) PIRIMOR, APHIDEX			
1B. CHLORPYRIFOS (+ methyl) (OP): CHLORFOS, LORSBAN, PREDATOR, (RESCUE, DIPLOMAT) etc	No cross resistance		
1B. PROFENOFOS (OP): CURACRON, SABRE etc	No cross resistance		
1B. Other OPs At Planting or side-dress: THIMET, PHORATE Foliar: DIMETHOATE, OMETHOATE, PARATHION METHYL.			
13A. CHLORFENAPYR: INTREPID			
12B. DIAFENTHIURON: PEGASUS			
4A. NEONICOTINOIDS (IMIDACLOPRID, THIAMETHOXAM, ACETAMIPRID & CLOTHIANIDIN); Seed treatments: GAUCHO, GENERO, AMPARO, CRUISER Foliar: CONFIDOR, ACTARA, INTRUDER, SHIELD			
9A. PYMETROZINE: FULFILL			
2B. DICOFOL: KELTHANE, MITIFOL			
14A. PROPARGITE: COMITE, BULLET			
10A. ETOXAZOLE: PARAMITE			

Cross resistance in Aphids - Treat Pirimicarb and group 1B as one chemical group. Do not use first foliar spray from this group if seed or furrow treatment from this group.

Do not use first foliar spray from group 4a if seed /furrow treatment from this group

### Key Changes

- Altacor windowed:  
Northern regions - Nov 15 - Feb 1  
Central and southern regions: Dec 1 - Feb 15.
- Incorporation of the Darling Downs with the Central regions
- New Southern Region IRMS incorporating Macquarie, Lachlan and Murrumbidgee
- Northern: Steward moved 15 days further into the season, Dec 1 - Feb 15.
- Central: pyrethroids moved 1 month further into the season, Jan 15 - end
- Shield (clothianidin) added to Neonicotinoid group
- Chemicals registered but not commercially available identified.

### Key Guidelines

- Pupae bust cotton and alternative crop residues as soon as possible.
  - Use recommended thresholds for all pests.
  - Monitor 1st position fruit retention at flowering.
  - Avoid using broad spectrum sprays.
  - Monitor pest and beneficial populations.
  - Avoid continuous sprays from same group.
  - Do not respray apparent failure with same group.
  - Control weeds on farm which are hosts for pests.
  - Comply with any insecticide use restrictions according to label
- For more detailed information see web page:  
[http://www.cottoncrc.org.au/content/Industry/Publications/PestsandBeneficials/Insect\\_Resistance\\_Management.aspx](http://www.cottoncrc.org.au/content/Industry/Publications/PestsandBeneficials/Insect_Resistance_Management.aspx)

Trouble shooting: A TIMS sub-committee has been established to arbitrate in cases where individuals, groups or regions expect to have difficulties following the strategy guidelines. It includes representation from: CSIRO, Industry and Investment NSW; Department of Employment, Economic Development and Innovation Qld; ACGRA .

If problems arise, contact: Tracey Farrell Phone 0267924088 Fax: 02 6792 4400 Email: tracey.farrell@crdc.com.au

Produced by: Cotton Catchment Communities CRC, CRDC, CropLife, TIMS