

Cotton Pest Status in North Zone Alert and Advisory (27.08.22)

General Crop Condition

Cotton sowings were spread over a wide sowing window (April to First week of June) during 2022-23 season owing to delayed release of water for irrigation. Initially weather in general was drier with low rainfall, lower humidity and higher day and night temperatures and the crop was under stress at many locations. Dry weather conditions were ideal for whitefly infestation (above ETL). Presently the crop is in full bloom stage.

In Haryana, Rajasthan and Punjab, crop is at square to boll development stage (95-120 DAS). At majority of locations, it is observed that **Whitefly** population is **above ETL** and continuously showing an increasing trend both in nymphal and adult population but counts are decreasing now. As the crop is at full flush stage, Pink Bollworm infestation is increasing. Farmers are advised to monitor their crop and follow recommended guidelines.

Current Insect-pests Status

Based on season long surveys conducted weekly, in Haryana (Sirsa & Hisar) out of 254 locations surveyed, whitefly incidence crossed Economic threshold level (ETL) at 105 locations and the pest ranged between 0-64 adults/ 3 leaves (ETL is reached when number of adult whiteflies crosses 18 /3 leaves). Jassid incidence crossed ETL at 45 locations and pest ranged between 0-17/ 3 leaves (ETL is 6 leafhoppers/ 3 leaves). Thrips incidence crossed ETL at 26 locations and pest ranged between 0-35/ 3 leaves (ETL is 30 thrips/ 3 leaves).

Out of 254, pink bollworm (PBW) incidence has been reported at 26 locations and crossed ETL at 22 locations based on flower damage (rosette flower). Green boll damage (%) ranged between 2-35 % (ETL is 10% flower or 10% boll damage).

Punjab (Bathinda & Faridkot) out of 251 locations surveyed, whitefly crossed ETL at 171 locations and pest ranged between 0-90/ 3 leaves. Jassid incidence crossed ETL at 8 locations and pest ranged between 3.3-30/3 leaves. Thrips incidence crossed ETL at 2 locations and pest ranged between 0-45/ 3 leaves.

Out of 251 locations PBW incidence has been reported at some locations and at 22 locations above ETL based on green boll damage (%) ranged between 0-50%.

Rajasthan (Sri Ganganagar) out of 286 locations surveyed, whitefly crossed ETL at 270 locations and pest ranged between 19-222/ 3 leaves. Jassid crossed ETL at 159 locations and pest ranged between 0-48 / 3 leaves. Thrips incidence crossed ETL at 6 locations and pest ranged between 0-42/ 3 leaves. Pink bollworm (PBW) incidence has been reported to cross ETL at 41 locations showing infestation based on green boll damage (%) ranged between 0-20.

Season Long Survey conducted in North Zone up to 26th August 2022

SMW	No. of locations surveyed	Details	Name of pest & no. of ETL cross Location					Remarks
			WF	LH	TH	PBW (GBD %)		
Haryana State								
28 th May to 26 th Aug	254	ETL	105	45	16	26		
		Pest Range	0-64	0-17	0-56.6	0-35		
Punjab State								
11 th June to 26 th Aug	251	ETL	171	08	02	22		
		Pest Range	0-90	3.3-30	0-45	0-50		
Rajasthan State								
11 th June - 19 th Aug	286	ETL	270	159	6	41		
		Pest Range	19-222	0-48	0-42	0-20		

Advisory for Monitoring and Management of Sucking Pest and Bollworms for North zone during remaining part of 2022 crop season.

Methodology to monitor Punk Bollworm Infestation in cotton Crop

Pest	Method of observation	ETL	Sample Size	Symptoms
Whitefly	Observe 3 Leaves from Upper, Middle and lower portion of the plant	18-24 adults/ 3 leaves	Minimum 20 plants per acre	
Thrips		30 nymphs or adults / 3 leaves		
Jassids		6 nymphs or adults / 3 leaves		
Pink Boll worm	Flower Based	10 % Rosette flower	Randomly observe 100 flowers per acre	
	Destructive sampling for Green Boll damage	10 % damaged green boll	Randomly collect 20 bolls and dissect to detect PBW larvae	

	Trap Catches	8 adults per trap for three consecutive nights	2 Traps per acre for monitoring of adult moth arrival in fields	
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Management Strategies

91-120 Days After Sowing	
<p>Sucking Pest</p> 	<ul style="list-style-type: none"> ➤ Apply Diafenthiuron 50WP (500 gm/ha or Afidopyropen 50G/L@ 1000 ml/ha or Dinotefuran 20 SG (150g/ha) or Flonicamid 50 WG (200 g/ha) for adults control. ➤ If a higher population of eggs and nymphs of whitefly is observed under the leaves as indicated by sticky leaves, then application of Buprofezin 25 SC (1000 ml) or Spiromesifen 22.9 SC (500 ml) or Pyriproxyfen 10EC (1250 ml) per hectare is advisable.
<p>Bollworms</p>  	<ul style="list-style-type: none"> ➤ Chlorpyrifos 20 EC (1250 ml) or Profenophos 50 EC (1250-2000 ml) or Indoxacarb 14.5 SC (500ml); Emamectin benzoate 5 SG (250 g) per hectare is advisable for Pink Bollworm. ➤ In the case of Arboreum or American cotton, the incidence of Spotted bollworm or American bollworm is observed apply Spinosad 45SC @150ml/ha or Flubendiamide 480 SC @ 100 ml/ha or Indoxacarb14.5 SC @500ml/ha or Spinetoram 11.7 SC (425ml) or Chlorantraniliprole18.5SC 150 ml/ ha (only for ABW).
121-150 Days After Sowing	
<p>Sucking pests</p>	<ul style="list-style-type: none"> ➤ To manage the second flush of whitefly (later part of season after 15th September) restricted use of Ethion 50EC (2000 ml/ha) is also advisable
<p>Bollworms</p>  	<ul style="list-style-type: none"> ➤ For pink bollworm control, spraying the crop with Ethion 50 EC (2000 ml/ha) or Fenvalerate 20 EC (250-500 ml/ha) or Lambda- cyhalothrin 5 EC (500 ml/ha) or Cypermethrin 10 EC (500-625 ml/ha) or Cypermethrin 25 EC (200-250 ml/ha) or Deltamethrin 2.8 EC (400-500 ml/ha) or Alphamethrin 10 EC (250-310 ml/ha) or Fenpropathrin 10 EC (750 ml/ha). ➤ Terminate the crop as early as economically feasible. For this purpose give last irrigation by end of September. It would reduce bollworms damage and their carryover to the next cropping season. ➤ Allow sheep and goat grazing in field after picking to reduce the carryover of bollworms. Stack cotton sticks away from the field vertically. If possible shredding of cotton stalks in soil is advisable. <p>*Use 150-200 litres of water /acre for dilution of the insecticides.</p>