Annexure III Pests and diseases of Crops

District: Hamirpur									
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Host	**Insect/ animal**	**Scientific name**	**Local name**	**Habitat**	**Time/ season of attack**	**Management mechanism**	**Associated TK**	**Other details**	**Community knowledge holder**
Maize	Black cutworm	*Agrotis ipsilon*	Katua Keet/ Toka	• Found during day time hiding in soil close to stems. • Larva cut the seedling plants and feed.	April-June & Oct-Nov	• Hand picking and destruction of larvae. • Apply chlorpyriphos 20 EC @ 2 litres/ ha.	-	-	-
	White grubs	*Lepidiota stigma*	Safed Gidar	• Soil dwelling grubs are present in soil at a depth of 5-20 cm. • Grubs feed on underground stem and roots tubers.	June-Oct	• Plough the fields to expose grubs to predators. • chlorpyriphos 20 EC @ 2 litres/ ha after mixing with 20-25 kg of sand.	-	-	-
	Termites	*Microtermes obesi* *Odontotermes obesus*	Deemak	• Build tall (2-4 m), cylindrical mounds or termitarium. • workers damage roots.	Regular	• Locating and destroying termite nests. • Use well decomposed FYM. • Applying chlorpyriphos 20 EC @ 2 litres/ ha after mixing with 20-25 kg of sand.	-	-	-
	Maize Stem Borer	*Chilo partellus*	Tane ki sundi	• larvae first feed on the leaves, making a few shot holes. • Central shoot withers and leading to dead heart.	July	• Remove the dead-hearts and infested plants. • Apply 2 g phorate (Thimmet 10G) per meter of row length.	-	-	-
	Corn leaf aphid	*Rhopalosiphum maidis*	Tela	• Aphids infest leaves, leaf sheaths	September	• Foliar spray of imidacloprid	-	-	-

				and inflorescences. • Most severe damage occurs to the tassel.		200SL or thiamethoxam 25 WDG @ 0.005%.			
Paddy	Grasshopper	*Hieroglyphus* spp., *Chrotogonus* spp.	Tidda	Damage germinating crop by cutting the plants in nursery and in the fields. The adults are often serious and attack the periphery of the **panicles**.	Regular	• Clean cultivation by removing weeds • Bunds must be cleared off grasses and weeds • Spray 1250 ml Chlorpyriphos 20 EC per 500 L water/ha on appearance of pest.	Dusting of wood ash		Local people
	Leaf folder	*Cnaphalocrocis medinalis*		Caterpillars infest leaves of young plants by fastening the edges of the leaf together and live inside rolled leaf. Occasionally cause serious damage at vegetative stage	Occasional / at vegetative stage	• Clip-off the affected leaves. • Remove weeds especially graminaceous ones • Spray 1250 ml chlorpyriphos20 EC (per 500 L water/ha on pest appearance.	Clip-off the affected leaves		Local people
	Stem borer	*Scirpophaga innotata*		Damage is caused by feeding of the larvae within the stem. The damaged plants result in `dead heart' and `white head' formation	Occasional at vegetative stage	• Apply carbofuran 3 G by broadcasting in 3-4 cm deep standing water @ 1 kg/ha (a.i.) 10 days after transplanting, if necessary. • Spray 500 ml methyl parathion 50 EC in 500 L water/ha. Repeat after 45 days.			Local people
	Leafhopper	*Nilaparvata lugens*		Nymphs and adults of	Regular	• Spray 1250 ml			

				hoppers cause heavy damage to this crop by sucking the sap from various parts of the plant during July-September. Cause 'hopper burn' symptoms		Chlorpyriphos20 EC per 500 L water/ha on appearance of pest.			
Wheat	Termite	*Odontotermis obesus, Microtermis obesi*	Deemak	Infest crop at germination stage. Cause yellowing and patchy growth of wheat visible from seedlings to maturity	Regular	• Remove stubbles of previous crop before sowing. • Termite mound should be destroyed in vicinity of crop • Seed treatment with chlorpyriphos 20 EC (4ml/kg seed) • Soil application of 2lt.chlorpyriphos 20 EC mixed in 25 kg sand per ha at the time of sowing			
	Grasshopper	*Hieroglyphus* spp., *Chrotogonus* spp.	Tidda	Feed on foliage and soft stem of young plants	Regular	• Bunds must be cleared off grasses and weeds • Collect and destroy the insect • Dust Folidol 2% @ 20-25 kg/ha It is better to dust the grass on bunds and in waste land near the field before germination of wheat and barley as hopper migrate to germinating crop	Dusting of wood ash		Local people

						from these sources.			
	Aphid	*Rhopalosiphum maidis, Sitobion avenae*	Tela	Suck sap from soft leaves, stem and developing grains from December till crop maturity and ultimately inhibiting grain formation	Regular	• Follow common cultural, mechanical and biological practices • Spray 750 ml methyl demeton 25 EC or dimethoate 30EC in 750 l water/ ha • Generally, natural enemies present in the field help in controlling the population of this pest	Dusting of wood ash		Local people
	Borer	*Helicoverpa armigera*	Sundi	Damage wheat ear heads at grain development stage heat, wheat serve as a bridge host for carry over of this polyphagous pest	Occasional / near harvesting stage	• Damage is near harvest, so only mechanical control			
Gram (Chic kpea)	Gram pod borer	*Helicoverpa armigera*	Falli ki sundi	• The larvae feed on leaves and bore into pods.	March	• early sown crop escapes the infestations • intercrop with wheat, mustard and linseed • Apply HaNPV @ 250LE/ ha • Spray the crop with lambda-cyhalothrin 5% EC @ 400-500ml/ 400-600 L/ ha	-	-	-

	Aphids	*Aphis craccivora*	Tela	• Aphid is dark green to black Bean aphids. • Attack terminal leaves, flower heads, and stems of pods.	Regular	• Foliar application of imidacloprid 200SL (0.005%), acetamiprid 20SP (0.01%), lambda cyhalothrin 5EC (0.008%)	-	-	-
	Black cutworm	*Agrotis ipsilon*	Katua Keet/ Toka	• Found during day time hiding in soil close to stems. • Larva cut the seedling plants and feed.	April-June & Oct-Nov	• Hand picking and destruction of larvae. • Apply chlorpyriphos 20 EC @ 2 litres/ ha	-	-	-
	Termites	*Microtermes obesi* *Odontotermes obesus*	Deemak	• Build tall (2-4 m), cylindrical mounds or termitarium. • Workers damage roots.	Regular	• Locating and destroying termite nests. • Use well decomposed FYM • Applying chlorpyriphos 20 EC @ 2 litres/ ha after mixing with 20-25 kg of sand	-	-	-
Mash	Blister beetle	*Mylabris pustulata*	Ghodi	Adults feed voraciously on flowers	Regular/ at flowering and pod bearing stage	• Collect and destroy beetle • Spray 625 ml methyl parathion (Metacid 50 EC) in 625 L water/ha at the tasselling stage, if required.	Collect and destroy beetles		Local people
	Hairy caterpillar	*Spilosoma obliqua*	Jhan	Feed gregariously on foliage and soft stems of young plants	Occasional at vegetative stage	• Collect and destroy the congregating caterpillars. • Dust Folidol 2% @ 20-25 kg/ha			
	Thrips	*Megalurothrips* spp.	-	Suck sap from flowers	Minor	• Follow common			

						cultural, mechanical and biological practices • Spray dimethoate 30% EC @ 264 ml in 200- 400 l water/acre for controlling thrips.			
Rapeseed-mustard	Cabbage aphid	*Brevicoryne brassicae*	*Tela*		Rabi *	• Spray methyl demeton 25EC or dimethoate 30EC @1ml/l. • If crop is meant for 'Sag' purpose, then spray malathion 50EC @ 1ml/l and observe 1 week waiting period			
	Mustard aphid	*Lipaphis erysimi*	*Tela*		-do-	• -do-			
	Green peach aphid	*Myzus persicae*	*Tela*		-do-	• -do-			
	Mustard saw fly	*Athalia lugens proxima*	-		-do-	• Spray malathion 50EC @ 1ml/l			
	Cabbage butterfly	*Pieris brasscae*	-		-do-	• -do-			
	Pea leaf miner	*Chromatomyia horticola*	-		-do-	• Spray methyl demeton 25EC or dimethoate 30EC @1ml/l. in crop meant for seed			
	Painted bug	*Bagrada hilaris*	-		-do-	• -do-			
Til	Hairy caterpillar	*Spilosoma obliqua*	Jhan	• Feed on leaves and growing shoots	Vegetative stage	• Collect and destroy the gregarious caterpillars • Spraying cypermethrin @ 0.01% when the caterpillars are	-	-	-

						small in size (less than 2mm)			
	Jassids	*Amrasca biguttula biguttula*		• Suck cell sap from leaves	-do-	• Apply phorate 10 CG @ 10kg/ha • Spray oxy demeton methyl @ 0.025%	-	-	-
	Leaf roller	*Antigastra catalaunalis*		• Young larvae roll the leaves and feed inside	-do-	• Spray quinalphos @0.05%	-	-	-
	Hawk moth	*Acherontia styx*		• Larvae feed voraciously on leaves by rolling them • Later on feed on flowers also	Vegetative and flowering stages	• Collect and destroy the caterpillars • Spray quinalphos @ 0.05%	-	-	-
Potato	Greasy cutworm	*Agrotis ipsilon*	Katua Keet/ Toka	• Found during day time hiding in soil close to stems •Newly hatched larvae first feed on haulms and then drop from plants and feed underground on stems and tubers	April-June & Oct-Nov	• Forking the soil exposes the larvae to avian predators • Apply chlorpyriphos 20 EC @ 2 liters/ ha after mixing with 20-25 kg of sand			
	Green Peach aphid	*Myzus persicae* (Sulzer)	Tela	•Aphids can injure a potato plant directly by sap feeding and indirectly by transmitting several important potato viruses	Regular	• Seed plots must be kept free of aphids • Selection and rouging of plants infected with a virus • Foliar sprays of dimethoate @ 1ml/L of water/ha • Imidacloprid and thiamethoxam also provide effective protection			
	Red ants	*Dorylus orientalis*	Cheenti	•Live in colonies,	Minor	• Applying a spray			

		D. labiatus		there may be one or several queens • Damages potato stems and tubers by chewing holes		with chlorpyriphos to the soil as a pre-planting dust formulation or as a post-planting spray			
	Tobacco caterpillar	*Spodoptera litura*	Kali Sundi	• The caterpillars hide during day in crevices and feed at night. • Defoliation of foliage	June-Oct	• Collect and destroy eggs and larvae mechanically • Ploughing to expose and kill pupae in the soil • Flood irrigation may drown the hibernating caterpillars and pupae • Spray Cypermethrin 25 EC or Lamba cyhalothrin 5 EC @ 600 ml/ 750L of water			