




Stem borers on Rice

Chilo spp., *Scirpophaga* spp., *Sesamia calamistis* and *Maliarpha separatala*

	Prevention	Monitoring	Direct Control
	<ul style="list-style-type: none"> • Use resistant rice cultivars • Before transplanting, cut the leaf-top to reduce carry-over of eggs from the seedbed to the field • Practise early and synchronised planting to avoid damage at the most susceptible stages (tiller elongation and panicle extensions), and maintain proper crop spacing 	<ul style="list-style-type: none"> • Monitor weekly from seedling to harvest for the presence of the insect and damage symptoms: <ul style="list-style-type: none"> • Look for egg masses on the leaf tips and on the underside of the leaves 	<ul style="list-style-type: none"> • Handpick and destroy egg masses at seedbed and transplanting stages
<p>Adult <i>Chilo suppressalis</i> (Merle Shepard)</p>	<ul style="list-style-type: none"> • Practise early and synchronised planting to avoid damage at the most susceptible stages (tiller elongation and panicle extensions), and maintain proper crop spacing 	<ul style="list-style-type: none"> • During vegetative stage, larvae bore at the base of the plants, killing growing points and resulting in deadheart (central tiller dries up and is easily pulled from the base) 	<ul style="list-style-type: none"> • After transplanting seedlings, place pheromone traps (@3/acre) or light traps (@12/acre) between 7-9pm to control adult moths in the field
	<ul style="list-style-type: none"> • Avoid excess use of nitrogenous fertilizers as high rates favour population build-up • Avoid water stagnation in the field • Conserve natural enemies such as dragonflies, spiders, carabids beetles, parasitic wasps by reducing the amount of insecticides used 	<ul style="list-style-type: none"> • During reproductive stage, larvae bore through the upper nodes and feed toward the base resulting in whiteheads (emerging panicles are whitish and empty) • Larvae leave tiny holes on the stems and tillers, and frass inside the damaged stems 	<ul style="list-style-type: none"> • Raise level of irrigation water periodically to submerge the eggs deposited on the lower parts of the plant • Spread or release natural enemies if available in your country such as the parasitoids <i>Cotesiaspp.</i>, <i>Trichogrammaspp.</i>, and <i>Pediobius furvus</i> • Remove and destroy deadhearts and whiteheads
<p><i>Scirpophaga incertulas</i> caterpillars (IRRI)</p>	<ul style="list-style-type: none"> • Remove stubble, volunteer rice and wild grasses around nurseries and planting areas 	<ul style="list-style-type: none"> • Damage may be confused with that caused by rats, neck blast or black bug diseases. To confirm stem borer damage, pull and dissected stems to find larvae or pupae 	<ul style="list-style-type: none"> • Plough and flood after harvest to destroy dormant stem borer caterpillars
	<ul style="list-style-type: none"> • Harvest crops at ground level to remove the larvae in stubble • After harvest, burn crop residues or feed to livestock • Practise crop rotation (e.g. legumes/vegetables) 	<ul style="list-style-type: none"> • Take control measures when 10-15% of plants/m² show damage 40 days after planting 	<ul style="list-style-type: none"> • Attacks result from infestation by more than one species and IPM programmes should be adapted according to differences in biology and ecology, and local conditions
<p>Boring damage of <i>Scirpophaga incertulas</i> causing whiteheads (NBAIR)</p>			

Note: Pesticides may be available to control this pest. Please check with the Ministry of Agriculture in your country to find out which pesticides are registered in your country and the local restrictions for their use.