

## Rice white borer (408)

### Summary

- Restricted. South and Southeast Asia, Oceania. In Australia, Fiji, New Caledonia, Papua New Guinea.
- Minor pest. Mostly rice, but also sedges. Damage worse if infestation after panicle initiation and flowering.
- Larvae bore into rolled leaves, and then through internodes to the growing point, killing it; stems pull out easily ('deadhearts'). Panicles fail to emerge, or emerge with unfilled grain ('whiteheads').
- Eggs on underside of leaf; brownish-yellow larvae, becoming whiter, with reddish line along back. Adults white (males with four dark spots on each forewing). Strong flyers. Nocturnal.
- Natural enemies: many egg and larval parasitoids and predators.
- Cultural control: handpick in nursery; plough land well (burying larvae/pupae of previous crop); plant at higher density than normal; rotate, e.g., legumes; synchronise plantings with neighbours; submerge eggs by raising water occasionally; weed; apply split applications N; harvest at ground level to remove larvae; plough in stubble, unharvested plants and weeds; use resistant (short, high tillering, early maturing) varieties.
- Chemical control: unlikely to be needed. Use abamectin. Avoid broad-spectrum insecticides to preserve natural enemies.



Photo 1. 'Whitehead' - a symptom caused by stem borers: the base of the panicle is damaged preventing it from emerging or, if already emerged, the grain is unfilled and white.



Photo 2. Larva white rice borer, *Scirpophaga nivella*.

### Common Name

White rice borer; also known as the paddy stem borer.

### Scientific Name

*Scirpophaga nivella*; however, there are other *Scirpophaga* species and there has been confusion between them: e.g., *Scirpophaga excerptalis* is a pest of sugarcane, *Scirpophaga incertulas*, yellow stem borer, occurs on rice as does *Scirpophaga innotata*, white rice stem borer. Some authors consider *Scirpophaga nivella* to be the sugarcane top borer, and a miner pest of rice. Additionally, in the introduction to *Scirpophaga nivella*, PaDIL states: "This species is the same moth as the Australian species, *Scirpophaga chrysorrhoea*..." These moths belong in the Crambidae.



Photo 3. Adult white rice borer (female), *Scirpophaga nivella*.



Photo 4. Adult white rice borer (male), *Scirpophaga nivella*.



Photo 5. Adult white rice borer, *Scirpophaga nivella* (side view).



Photo 6. Damage ('deadheart') to rice stem by *Chilo auricilius* (damage by *Scirpophaga nivella* is similar).

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Information (and Photo 1) Rice Knowledge Bank, IRRI. (<http://www.knowledgebank.iri.org/training/fact-sheets/pest-management/insects/item/stem-borer>); and CABI (2019) *Scirpophaga nivella* (white rice borer) Crop Protection Compendium. (<https://www.cabi.org/cpc/datasheet/49050>); and Khan ZR *et al.* (1991) World bibliography of rice stem borers 1794–1990. IRRI/ICIPE. ([http://books.iri.org/9712200159\\_content.pdf](http://books.iri.org/9712200159_content.pdf)); and White rice borer (and Photos 2–4) Anderson S, Tran-Nguyen L (2012) White Rice Borer (*Scirpophaga nivella*). (Source: N. Sallam DAFF Biosecurity.) PaDIL - (<http://www.padil.gov.au>); and from Pathak MD, Khan ZR (1994) Insect Pests of Rice. IRRI/ICIPE. ([http://books.iri.org/9712200280\\_content.pdf](http://books.iri.org/9712200280_content.pdf)). Photo 5 CBG Photography Group, Centre for Biodiversity Genomics. ([http://v3.boldsystems.org/index.php/Taxbrowser\\_Taxonpage?taxid=271138](http://v3.boldsystems.org/index.php/Taxbrowser_Taxonpage?taxid=271138)). Photo 6 Anderson S, Tran-Nguyen L (2012) Gold-fringed Rice Borer (*Chilo auricilius*). PaDIL - (<http://www.padil.gov.au>)

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