

Technical Bulletin #56

## Yellow Stem Borer (*Scirpophaga* species)

The contents of this bulletin are based upon information taken with permission from the International Rice Research Institute (IRRI) Rice Knowledge Bank at [www.knowledgebank.irri.org](http://www.knowledgebank.irri.org).

### Description:

Stem borers are caterpillars that live in rice stems. They eventually turn into yellow or light brown moths; usually one larva occurs per tiller. The moths are active at night. A female can lay up to three egg masses during her 7 to 10 day life as an adult.



Egg masses of yellow stem borers are disc-shaped and covered by a light brown mat of hair from the female abdomen. Each egg mass contains about 100 eggs.

### Damage:

- ✓ Causes deadheart or drying of the central tiller during vegetative stage.
- ✓ Causes whiteheads at reproductive stage.



### Factors favoring insect development:

- ✓ Fields planted later than surrounding rice fields.
- ✓ Stubbles that remain in the field.



### Why should stem borers be controlled?

Stem borers can destroy rice at any stage of the plant from seedling to maturity. If the plant is young, the center leaves of the damaged tillers turn brown and die. This condition is called deadheart. If the damage occurs after the panicle form, then the panicles turn white - a condition known as whitehead. Although damage often looks very bad, control is often not cost-effective. Also by the time damage is evident, it is too late to apply control measures. Stem borers can have a significant impact on the yield of traditional rices as tillers lost to deadheart are often not replaced.

### Cultural control:

Cultural control is the best way to reduce damage. Some things farmers can do are:

- **Clip the tip of the leaf blades before transplanting** – The eggs of yellow stem borers are laid near the tip of the leaf blade. Clipping the seedling before transplanting reduces the transfer of eggs from the seed bed to the field.
- **Spray a neem seed kernel solution** to repel the adult females and reduce the egg laying activity.
- **Plant all rice fields at a similar time as neighboring fields** to avoid pest build-up.
- **Plant stem borer resistant varieties** - For example, IR36, IR32, IR66, and IR77 have varying degrees of resistance to some stem borer species.
- **Spread straw in the sun** to kill resident stem borer larvae.
- **Plow and flood the field after harvest.**



### About chemical control:

Chemical control of stem borers is generally not recommended as stem borers are quite difficult to control with insecticides. The caterpillars are only vulnerable to many foliar sprays in the short time between hatching from the egg and entering into a stem.

Systemic insecticides, which go inside the plant, are the only reliable form of chemical control for stem borers after the borers have entered into the stem, but by then it is generally too late to save the rice stem anyway. Like all pesticides, the benefits of using an insecticide must be weighed against the risks to health and the environment. Indiscriminate insecticide use can disrupt existing biological control, resulting in pest outbreaks. Before using a pesticide contact your Cambodia HARVEST technician for suggestions, guidance, and warnings about specifics of your situation. Always read pesticide labels carefully.

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