A Green Molluscicide for Golden Apple Snails

THE GOLDEN APPLE SNAIL INFESTATION

The golden apple snail is a fresh water snail which is now a major rice pest in Asia. The snail is feeds on vegetal, detrital and animal matter with a voracious appetite. The snail could aestivate underground for more than 10 months, therefore once infested, the situation is seemingly irreversible. The most active period for the snail is during the wet rainy seasons.

Currently, there are no efficient biological controls to combat the invasive molluscs. Whereas the application of synthetic molluscicides has a toxic effect on non-target organisms, it affects crop establishment and causes problems of algal blooms and pesticide residue. This gives rise to the need for botanical molluscicides as an alternative. However, there is currently no effective, safe and economically viable molluscicidal formulation. The innovation is a polyherbal formulation from molluscicidal plant extracts that has been formulated into a bait for the golden apple snail, which is effective in attracting and killing the snails.

THE INNOVATION

The polyherbal molluscicide is an effective formulation to combat the invasive molluscs, namely golden apple snails. In contrast to synthetic molluscicides that has a toxic effects on non-target organisms, this polyherbal formulation from the molluscicidal plant is a biological control method, which is one of its kind with low toxicity to non-target organisms and biodegradable, among others. With the discouragement of the use of chemicals, this green product stands to be in high demand.

COMPETITIVE ADVANTAGES

- Mixture of natural extracts to attract snails
- Active at less than 100 mg/l to kill 90% of the snails exposed for 24 hours
- Botanical molluscicidal formulation in the form of ready to use bait and dispersal granules
- Low toxicity to non-target organisms in the rice field
- Low mammalian toxicity
- Biodegradable

COMMERCIAL POTENTIAL

In Malaysia, the rice areas infested with golden apple snails include 13 states covering an area of about 17,399 ha (2006). The snails devastated some rice fields in the beginning particularly in areas dominated by direct seeding planting method. Paddy farmers are now vigilant on the pest and practice proper crop husbandry to counteract snail attacks. Although biological control of the snails is ineffective, the Department of Agriculture discourages farmers from using chemicals because they are hazardous to the environment, and may also endanger public health. As such, it should be emphasised in control operation, which is environmental friendly and non-toxic to non-target organisms. The developed polyherbal molluscicides is a green product from plant extracts and the cost of production is competitive.

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