

Rice

PEST rivia



Golden Apple Snail

Scientific Name:

Pomacea canaliculata

Distribution:

Golden apple snail (GAS) or locally known as Golden kuhol is native to South America. In the 1980s, it was introduced to Filipino farmers to increase their income, as well as a protein diet, and as an aquarium pet from Argentina through Taiwan.

How to identify?

1. Has muddy brown shell
2. Possesses golden pinkish, or orange-yellow flesh.
3. Bigger and lighter in color compared to native snails.
4. The eggs are bright pink in color.



Figure 1. Golden Apple Snail (Adult)



Figure 2. Golden Apple Snail (Egg mass)



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Did you know?

P. canaliculata is capable of destroying 1 square meter of field overnight. Thus, could lead to more than 50% yield loss.

In the Philippines, this pest has brought an estimated USD 1200 million per annum economic losses to aquatic crops, excluding the non-crop damage it has inflicted to human health and natural ecosystems.

Characteristics of *P. canaliculata*

- Are voracious plant eater which feeds on array of plants such as azolla, duck weed, water hyacinth, rice seedlings, and other succulent leafy plants, etc.
- Commonly found in irrigation canals, natural water distribution pathways, and during flooding events.
- Snails are capable of aestivation during drought for up to six months. Then, they re-emerge upon irrigation.
- Cultivated rice neither direct wet-seeded or the transplanted ones are vulnerable to GAS attack during its 30 days old.



When is the best time to manage GAS in rice?

- It is best to control the pest during the first 10 days after transplanting (DAT), and during the first 21 days after direct wet-seeding.
- The period to best control them is during land preparation and crop establishment.

Community-based Snail Management

- During land preparation or crop establishment, it is important to conduct mass snail and egg collection campaigns.
- During the 30 days old of the seedlings, keep fields drained.



PEST MANAGEMENT RECOMMENDATIONS

BIOLOGICAL CONTROL

1. Use of natural predators such as:
 - a. Domestic ducks - feeds on young snails during final land preparation, crop establishment, or when field is flooded .
 - b. Red ants - feeds on eggs.
 - c. Rats - also feeds on young snails.
 - d. Wild bird species - several species has learn to feed on them.

CULTURAL CONTROL

1. Handpick snails - best done when they are active during the morning and afternoon, then crush it afterwards.
Note: Provide egg laying sites such as bamboo stakes, for ease of egg collection.
2. Manage Water - keep water level below 2 cm of water for difficulty of movement during the vulnerable stages of rice plant.



- Build small canals or canalettes (15-25 cm wide and 5 cm deep), after land preparation . This facilitates drainage and acts as focal point for snails making manual collection and killing easier.

3. Use toxic plants - such as tobacco leaves, heartleaf false pickerelweed, and citrus leaves.

4. Prevent field entry - put up a barrier such as woven bamboo screen or mesh bag at the entry and exit points of your rice field.

5. Transplanted rice - less vulnerable than direct seeded rice.

CHEMICAL CONTROL

1. Do not apply to whole field rather, apply products only to low spots and canalettes. Thus, ensure safe application at all times.

2. Apply immediately after transplanting or during the seedling establishment phase in direct seeded rice and only for rice younger than 30 days old.



REFERENCES

- <http://www.knowledgebank.irri.org/step-by-step-production/growth/pests-and-diseases/golden-apple-snails>.
- Joshi, R.C., 2007. Problems with the Management of the Golden Apple Snail *Pomacea canaliculata*: an Important Exotic Pest of Rice in Asia.
- Department of Agriculture - Bureau of Plant Industry, 2010. Integrated “Golden” Kuhol Management.

PHOTOCREDITS

- <http://www.knowledgebank.irri.org/step-by-step-production/growth/pests-and-diseases/golden-apple-snails>.

