DEPARTMENT OF AGRICULTURE
1898
BUREAU OF PLANT INDUSTRY

BPI • CROP PEST MANAGEMENT DIVISION
1932

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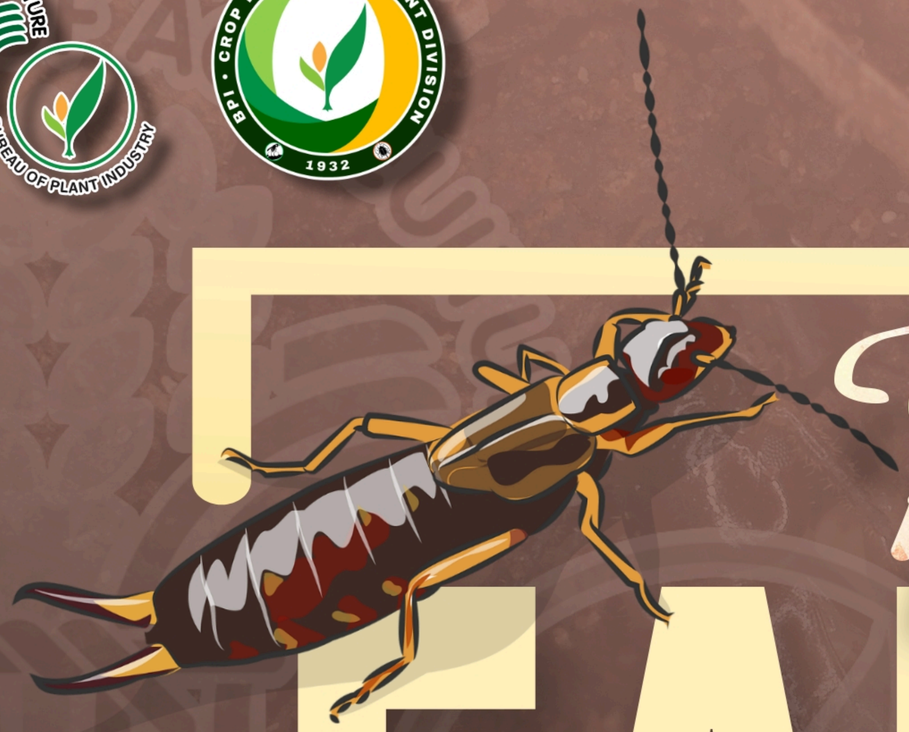

Predatory

EARWIG

Euborellia annulata

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DID YOU KNOW?

Nymph

Egg

EARWIG life cycle

Adult

HEMIMETABOLOUS

Earwigs undergo incomplete metamorphosis, developing through a series of 4 to 6 molts. The developmental stages between molts are called instars.

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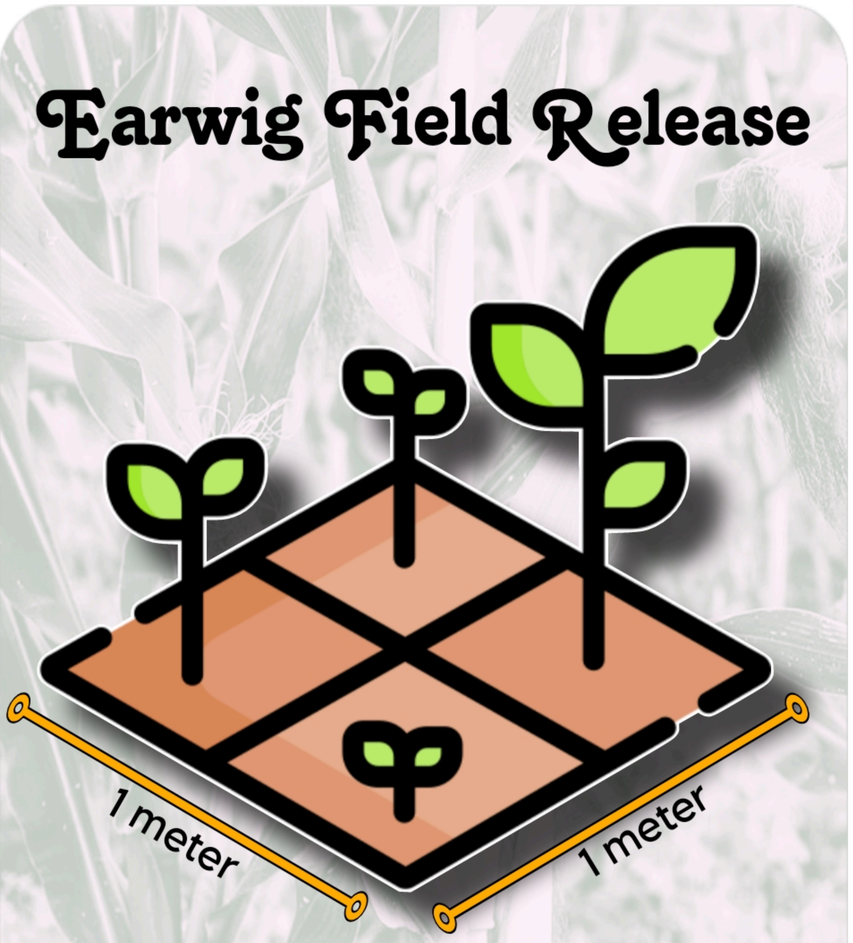
How to apply in the field?

Earwig Field Release



(1) One earwig per square meter

Third instar to adult earwigs can be released in the field at the rate of (1) one earwig per square meter or 10,000 earwig per hectare.

Release earwig when weather is favorable.
Avoid periods of heavy rains.
Best time to release earwigs is early in the morning or late in the afternoon.

Target Pest :
Asian Corn Borer (Egg mass, early instar, larva and pupal stage) and other soft bodied insects attacking vegetable crops

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How do you distinguish male and female Earwig?

The mobile abdomen extends into a pair of forcep like structures called **CERCI**

It is capable of opening and closing its forceps which are used for a variety of purpose such as in holding prey.

The forceps tend to be more curved in males than in females.

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PREDATORY EARWIG

Euborellia annulata

- is elongated, flattened, and is shiny black in color. It is 10–14 mm long and has no wings.
- They are more active at night and prefer to stay in the soil during daytime.
- They crawl on the plants at nightime and tend to gather in damp areas like the stalks and underneath the leaves.

Hi I'm Erwin, your earwig friend!

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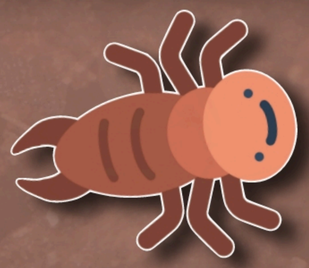

This is my life cycle

Egg Development

- Size and color of eggs change in times from creamy white to brown
- Once hatched, the mother will continue to provide food to her young until they are ready to feed for themselves
- Typically hatch after 7-8 days, where the earwig will experience their first molting

Nymph Development

- All instars have 10 abdominal segments
- Four to six molting
- Five (5) nymphal instars Grows bigger and darker as they were developed in a matter of 40-60 days
- The fourth instar started to have predation capability. Each nymphal period last 7-8 days except the fifth which is shorter (2-6 days)

Adult Development

- Female abdomen length varied ranging from 12 to 16 mm with the average of 14 mm
- While the male ranging from 11 to 13 mm with the average of 11.93 mm
- Female and male were shiny black with a pair of dark brown antenna

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References

- Biological Control Agents Mass Production and Utilization Technology Handbook 1st Edition, Bureau of Plant Industry – Crop Pest Management Division
- Earwig and Trichogramma, Biological Control Agents against Asian Corn Borer; Department of Agriculture, Regional Field Office 5, San Agustin, Pili, Camarines Sur

Photo References

- BPI-CPMD, Biological Control Agents (Captured under Keyence Digital Microscope)
- Clip art and Icon used

  https://www.freepik.com/icon/field_3442662#fromView=resource_detail&position=16
  https://pixabay.com/vectors/european-earwig-insect-animal-5796565/
  https://commons.wikimedia.org/wiki/user:Bugboy52.40
  https://www.flaticon.com/free-icon/earwig_5513229

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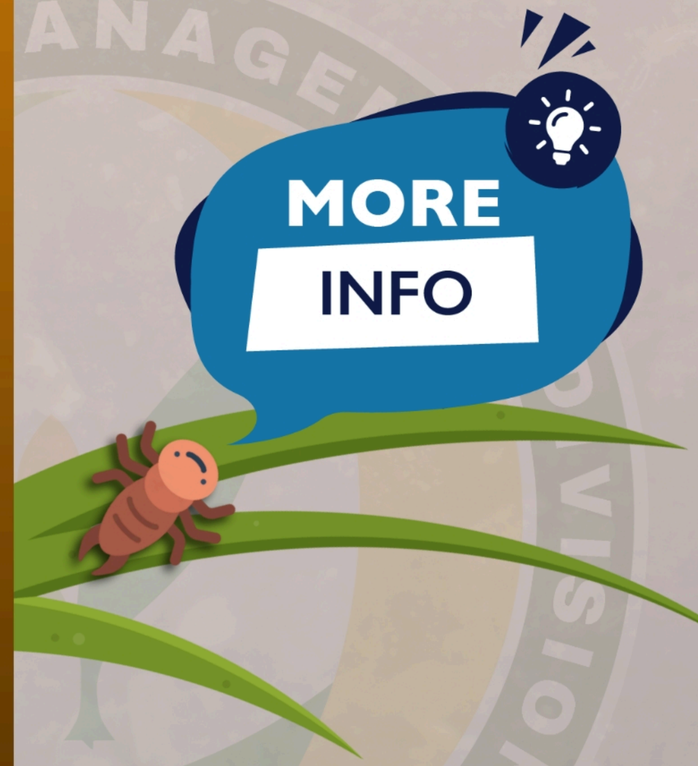

FOR MORE INFORMATION

Please visit us at :

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692, San Andres Street, Malate, Manila
or
Any nearest Department of Agriculture
Regional Crop Protection Center (DA-RCPC)

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