



MEMORANDUM

FOR: REGIONAL EXECUTIVE DIRECTORS
Regions 1-12, CAR, CARAGA, and BARMM

FROM: GERALD GLENN F. PANGANIBAN, Ph.D.
Director

DATE: January 18, 2024

SUBJECT: Pest Management Advisory: Onion Armyworm (*Spodoptera exigua*)

In view of the reported and validated onion armyworm infestation in the Municipality of Bongabon, Nueva Ecija affecting 40 hectares of onion farms, you are hereby alerted to conduct pest surveillance and monitoring of onion armyworm. We kindly advise the Regional Field Offices (RFOs) through the Regional Crop Protection Centers (RCPCs) and Regulatory Division to conduct a detection survey for the presence of this pest in onion producing areas in your respective region for immediate implementation of containment and pest management activities.

Attached are pertinent information and possible appropriate management strategies for your information and immediate action.

PEST MANAGEMENT ADVISORY

ONION ARMYWORM (*Spodoptera exigua*)

Taxonomic Tree

Domain: Eukaryota
Phylum: Arthropoda
Class: Insecta
Order: Lepidoptera
Family: Noctuidae
Genus: *Spodoptera*
Species: *exigua*

Scientific Name

Spodoptera exigua

Other Name

Harabas

Destructive Stage: larvae

Crop Growth Stages Affected: All Stages



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ONION ARMYWORM (*Spodoptera exigua*)

Overview

High-value crops (such as banana, mango, **onion**, cabbage, pineapple, sugarcane, coconut, cacao, coffee and okra, etc.) are important agricultural crops in the Philippines. These are mainly used for domestic consumption and foreign trade. They give a good yield and high income to farmers however, the production of the said high-value crops is decreasing and some are being affected aesthetically and are not anymore accepted for export due to pest and diseases.

As per Philippine Statistics Authority (PSA), there had been various reports of a decrease in the production of different high-value crops from 2019 to 2020. These decreases in production are not specified if they were caused by pest and diseases, climate change, or abiotic stresses, but there are reports of infestations such as **onion armyworm** that cause significant yield losses. There are two species of worms attacking in the onion areas, the common cutworm (*Spodoptera litura*) and onion armyworm (*Spodoptera exigua*). Among these two, onion army worm is the worst enemy of our onion farmers. The worms breed in grassy patches near the farms and attack as farmers begin to plant their crops. Army worms produce more eggs during a long dry spell after a rainfall. A female army worm can lay 800 to 1,000 eggs. The larvae skeletonized the leaves and the feeding reached down to the bulbs thereby reducing yield.

The said pest is difficult to control since they have many alternate hosts. Therefore, it is needed to have continuous monitoring of fields, training, and awareness campaign for farmers on the identification and management of major onion pest and diseases. Also, there should be an established reference regarding pest and disease epidemics since there is no system yet for early warning on threats to agrobiodiversity in the country (Altoveros & Borrromeo, 2007).

Distribution

Have been reported in all major onion growing areas in the Philippines.

Host Range

Cucurbits

Solanaceous crops

Legumes

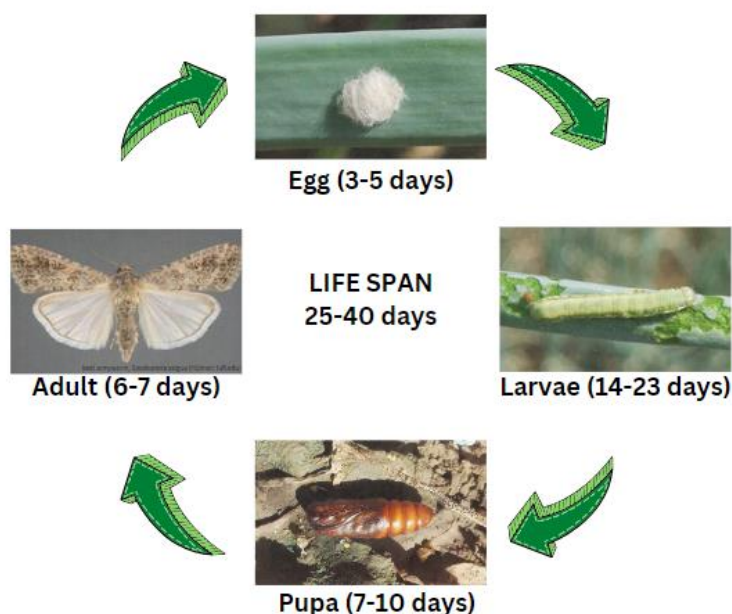
Cotton

Tobacco

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Description of Life Stages



Egg

- The female lays pale greenish or pinkish, striated eggs in masses that are covered with white cottony material (bristles from the body of the female);
- Each egg mass contains 50-150 eggs, each about 0.7 mm diameter;
- Eggs hatch within 3-5 days;

Larva

- Larvae stay together after they hatch; later, they spread out and each one stays alone, one or two larvae per plant as the larger stages are cannibalistic;
- They are pale green or yellow at first, and become a dull green with wavy, light-colored stripes down the sides below the breathing holes, and a broader dark brown stripe above;
- Larva undergoes 5 larval stages and is the most destructive stage of the pest;

Pupa

- The pupa is reddish brown with a size of around 1.3 cm in length;
- Pupation usually takes place in the soil;

Adult

- Adults are moderately sized with a wing span measuring 25 to 30 mm;
- The forewings are mottled gray and brown, and hind wings are gray or white color, and trimmed with a dark line at the margin;
- Mating occurs soon after emergence, and oviposition begins within 2-3 days;
- Adult moths usually perish within 9-10 days of emergence.

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Favorable Weather Condition

Dry season | Warm humid climate.

Biology and Ecology

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Damage Symptoms

- Young larvae feed by scraping the leaves
- Larger larvae make irregular holes in the leaves or eat the leaves completely

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Figure 1. Larva of onion armyworm (OAW)



Figure 2. Adult of onion armyworm



Figure 3. Onion leaves infested with OAW larva



Figure 4. Severe infestation caused by OAW taken last January 9, 2024 at Brgy. Calaanan, Bongabon, Nueva Ecija



Figure 5. OAW infestation in San Vicente, Laur, Nueva Ecija visited last January 9, 2024

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Pest Management Recommendations

PREVENTION/ MONITORING

- Massive installation of pheromone lure traps to detect presence of male adult OAW in the field and conduct regular monitoring.

Installation and Monitoring of Pheromone Lure Traps

1. Install a pheromone lure trap in the production area with the holes of the trap facing the wind direction.
 2. Install at least ten (10) pheromone traps per hectare per onion armyworm species: five (5) for *Spodoptera exigua* and five (5) for *Spodoptera litura* for detection and monitoring purposes.
 3. Inspect the traps every week.
 4. When an adult armyworm is caught, search for egg masses in the field.
- Regular monitoring and surveillance along pest boundaries and in areas adjacent to the infested crop.

SUPPRESSION

Biological Control

- Release biological control agents such as egg parasitoids (*Trichogramma*), predators (earwig), entomopathogens (green muscardine fungus /*Metarhizium*), and NPV to manage pest early.

Note: BCAs are available for free at the BPI-Crop Pest Management Division and Regional Crop Protection Center (RCPCs) nationwide.

Cultural /Mechanical Control

- Handpicking of larvae to reduce the population
- Plant trap crops like sunflower, taro or castor plants around the area.
- Removal of weeds and volunteer plants that may serve as alternate hosts.
- Field sanitation and plow under the plant residue to reduce the population of the pest in the area

Chemical Control

- If the population and damage of onion armyworms still increase, apply botanical pesticides following the manufacturer's recommendation.
- If the infestation persists, apply FPA-registered pesticides for onion armyworms following the manufacturer's recommendation as the last resort.

Contact, coordinate and report to your local agriculture office/agricultural technician and management assistance to mitigate the damage and spread of the pest.

