



# ***SPODOPTERA LITURA***

**PREPARED BY: MR. BORUN KATHAR**

**ASSISTANT PROFESSOR**

**PDUAM, DALGAON**

**DARRANG, ASSAM.**

## ***Spodoptera litura***

is a polyphagous pest, which means it has a wide host range and nocturnal moth in the family Noctuidae. It is also known as the **tobacco cutworm**, tobacco caterpillar, taro caterpillar, oriental leafworm moth, and **cotton leafworm**

***Spodoptera litura:***

***Phylum: Arthropoda***

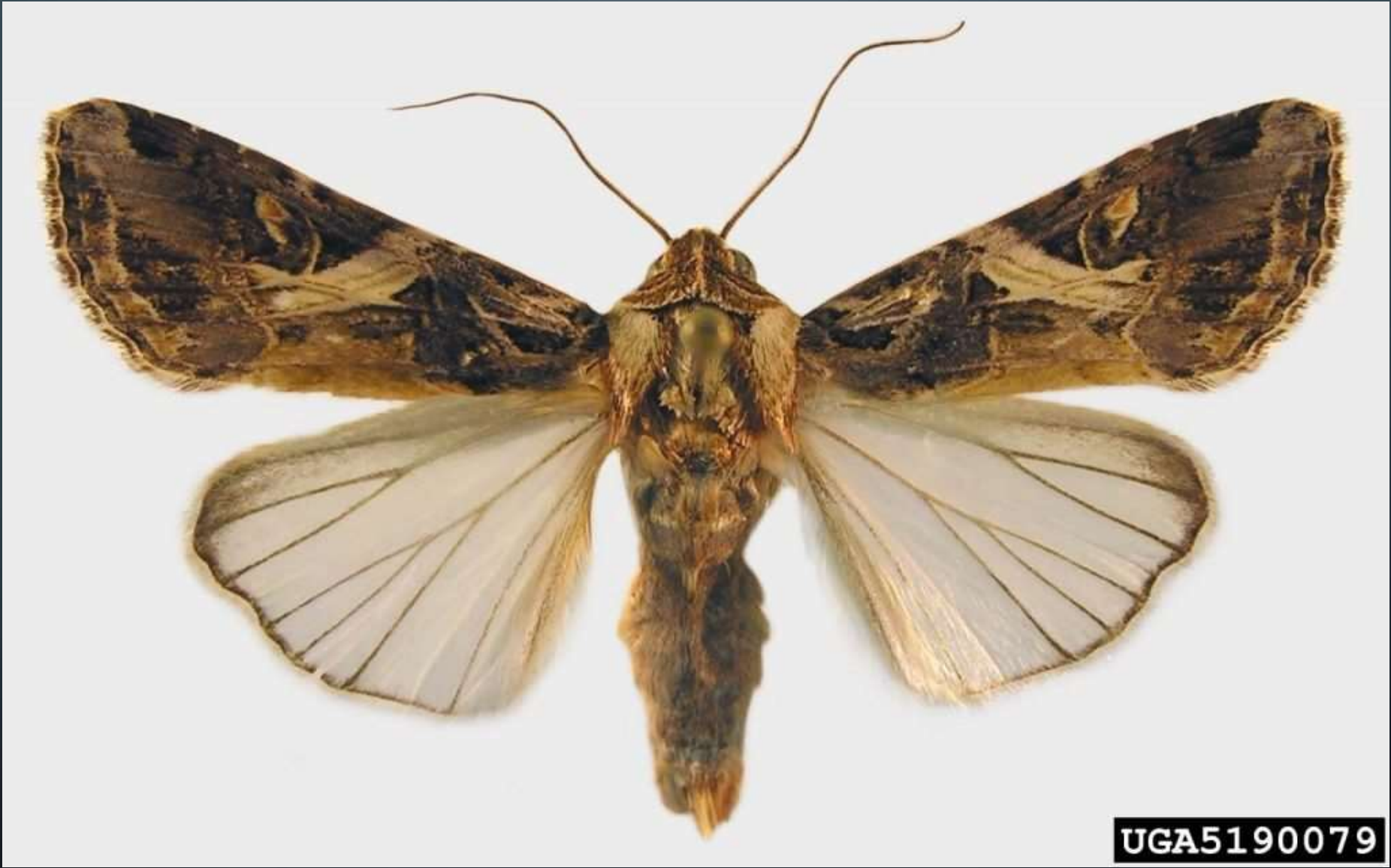
***Class: Insecta***

***Order: Lepidoptera***

***Family: Noctuidae***

**This pest causes damage to many crops during its larval (caterpillar) stage. It has a wide geographical distribution across Africa, Europe, and Asia, including Bangladesh, where it damages many economically important crops, including cabbage**





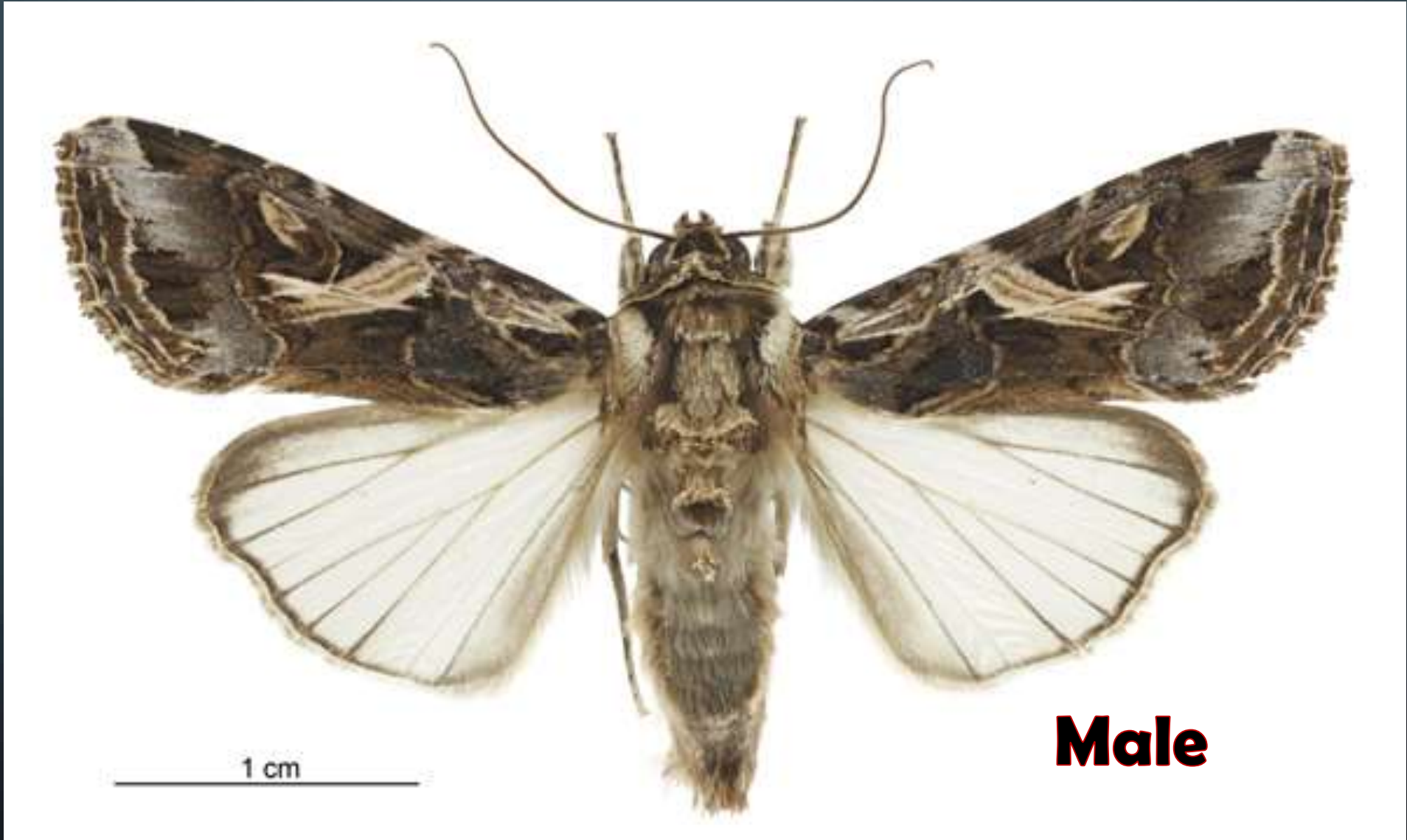
UGA5190079

***Spodoptera litura* adults** are 14-18 mm long and have white-brownish bodies with a pale red tinge. Orange and light brown hairs run along the back of the body. The forewings (closer to the head) have a dark brown colour with light brown stripes, and the hindwings (further from the head) are pale whitish with a violet sheen with a dark brown border.

There are slight but obvious differences in morphology between males and females of *S. litura* that allow for the easy differentiation of the two sexes.

**Male** forewing length is 14–17 millimetres ( $\frac{1}{2}$ – $\frac{5}{8}$  in) while female forewing length is slightly larger and measures 15–18 millimetres ( $\frac{5}{8}$ – $\frac{3}{4}$  in). The orbicular spot on the forewing is also more pronounced in the males.[\[6\]](#)

**Females** are slightly bigger than males, with a wingspan of 15-18 mm compared to 14-17 mm, and lay white round eggs that are 0.4 to 0.7 mm in diameter. Orange or pink scales from the female's body usually cover the eggs.



1 cm

**Male**



1 cm

**FEMALE**

*Spodoptera litura* progresses through **egg, larval, pupal, and adult stages**. Females lay hundreds of eggs at once on the underside of leaves during June, July, and August, and eggs hatch 3-12 days later, depending on the season. Eggs laid in warmer seasons hatch days faster.

**Newly hatched instars progress through six developmental stages before forming pupae. The pupal stage lasts 7-10 days and takes place in soil, and adult females begin egg production 2-5 days after emerging from the pupa. The duration of the life cycle depends on factors like temperature and humidity. This pest can have up to 12 generations per year depending on local conditions**

## Egg

Eggs are spherical and slightly flattened. Each individual egg is around 0.6 mm in diameter with an orange-brown or pink color. These eggs are laid on the surface of leaves in big batches, with each cluster usually containing several hundred eggs. Females have a typical fecundity of 2000 to 2600 eggs.<sup>[5]</sup>

**When laid, the egg batches are covered with hair scales provided by the female, which gives off a golden brown color. Egg masses are 4–7 millimetres ( $\frac{5}{32}$ – $\frac{35}{128}$  in) in total diameter, and eggs will hatch 2–3 days after being laid**



Shot by SOUMIX

**Larvae body length ranges from 2.3 millimetres ( $\frac{23}{256}$  in) to 32 millimetres ( $1\frac{1}{4}$  in). The larva is variable in color based on age. Younger larvae tend to be a lighter green while older ones develop to a dark green or brown color.**

**A bright yellow stripe along the dorsal surface is a characteristic feature of the larvae. The larvae also have no hair. Newly hatched larvae can be found by looking for scratch marks on leaf surfaces. Since *S. litura* is nocturnal, the larvae feed at night. During the day, they can usually be found in the soil around the plant**



There are  
**six instar stages**  
**, and by the**  
**last stage, the**  
**final instar can**  
**weigh up to**  
**800 mg.[5]**



## Pupa

**Pupation lasts around 7 to 10 days and takes place on the soil near the base of the plant. The pupa is typically 15–20 millimetres ( $\frac{19}{32}$ – $\frac{25}{32}$  in) long, and its color is red-brown.<sup>[5]</sup>**



**A characteristic feature is the presence of two small spines at the tip of the abdomen that are about 0.5 millimetres ( $\frac{5}{256}$  in) long each.[\[6\]](#)**

## Adult

**Adult moths are on average 15–20 millimetres ( $\frac{19}{32}$ – $\frac{25}{32}$  in) long and have a total wingspan of 30–38 millimetres ( $1+\frac{3}{16}$ – $1+\frac{1}{2}$  in). The body is a grey-brown colour. The forewings are patterned with dark gray, red, and brown colors.**



The hindwings are grayish-white with a gray outline.<sup>[5]</sup> The mean female longevity is 8.3 days while for males it is 10.4 days.<sup>[11]</sup>

**This pest attacks a wide range of plants (up to 120 species), including tomatoes, corn, potatoes, sugar beet, cotton, onions and cabbage. In Bangladesh, this pest accounts for up to 58% of cabbage plant damage.**



## References:

1. Yu, Jin-Feng; Li, Cong; Xu, Jin; Liu, Jian-Hong; Ye, Hui (2014). "Male Accessory Gland Secretions Modulate Female Post-Mating Behavior in the Moth *Spodoptera litura*". *Journal of Insect Behavior*. 27 (1): 105–116. [Bibcode:2014JIBeh..27..105Y](#). [doi:10.1007/s10905-013-9414-4](#). [S2CID 16139914](#).
2. ["\*Spodoptera littoralis\* and \*Spodoptera litura\*"](#) (PDF). EPPO. Archived from [the original](#) (PDF) on July 13, 2017. Retrieved October 1, 2017.
3. Abbas, Naeem; Shad, Sarfraz Ali; Razaq, Muhammad (2012-07-01). "Fitness cost, cross resistance and realized heritability of resistance to imidacloprid in *Spodoptera litura* (Lepidoptera: Noctuidae)". *Pesticide Biochemistry and Physiology*. 103 (3): 181–188. [Bibcode:2012PBioP.103..181A](#). [doi:10.1016/j.pestbp.2012.05.001](#)
4. [Wikipedia](#)
5. [A Textbook of Applied Zoology- Pradip V. Jabde](#)