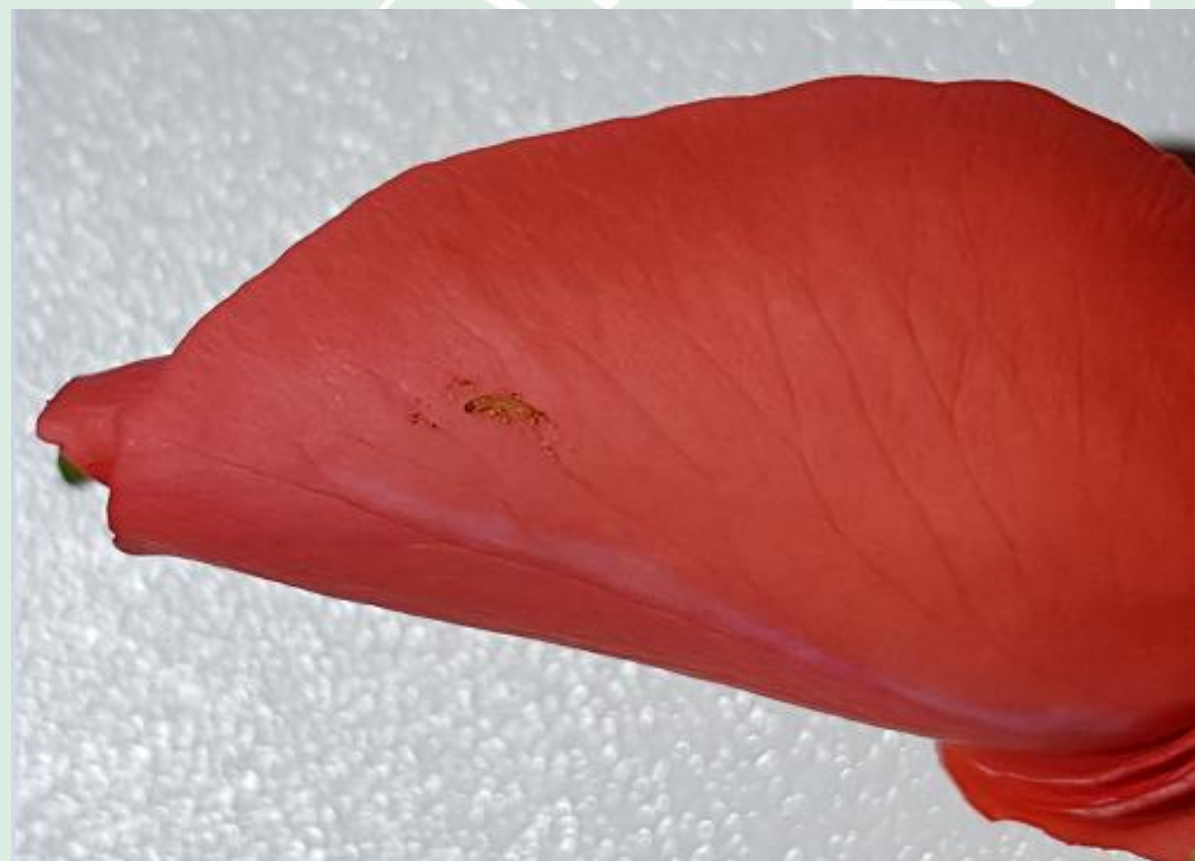




KWALITEITS-CONTROLE-BUREAU

FCM TRAINING

2019





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My name: Kees van der Vijver

✓ **Regional phytosanitary specialist Amsterdam
Airport/ Flower auction FloraHolland**

✓ **First line inspector**





The purpose of my presentation:

- ✓ **To tell something about import inspections**
 - ✓ **How do you recognize damage caused by caterpillars**
 - ✓ **What are the main characteristic differences between the Helicoverpa and Thaumatotibia (FCM) caterpillars/eggs**
 - ✓ **To practice with the participants the Quiz “who am I ?”**



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Specifications recognized phytosanitary import inspection post

- **Inspection table – smooth and clean surface of at least 1 m²**
- **Sufficient light over the entire table – at least 60 lux or led light between 3000 – 5000 k**
- **The light source about 1 meter above the inspection table**



Sample size import inspection cutflowers per shipment

Number of stems per genus

< 400
400 – 10.000
10.001 – 25.000
25.001 – 40.000
40.001 – 55.000
55.001 – 70.000
70.001 – 85.000
85.001 – 100.000
100.001 – 125.000
125.001 – 150.000
150.001 – 200.000
> 200.000

number of stems to inspect

50%
200 stems
300 stems
400 stems
500 stems
600 stems
700 stems
800 stems
900 stems
1000 stems
1100 stems
1200 stems

Samples for at least out of 2 boxes.

A maximum of 200 stems per box



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Damage caterpillar





Egg + damage caused by FCM





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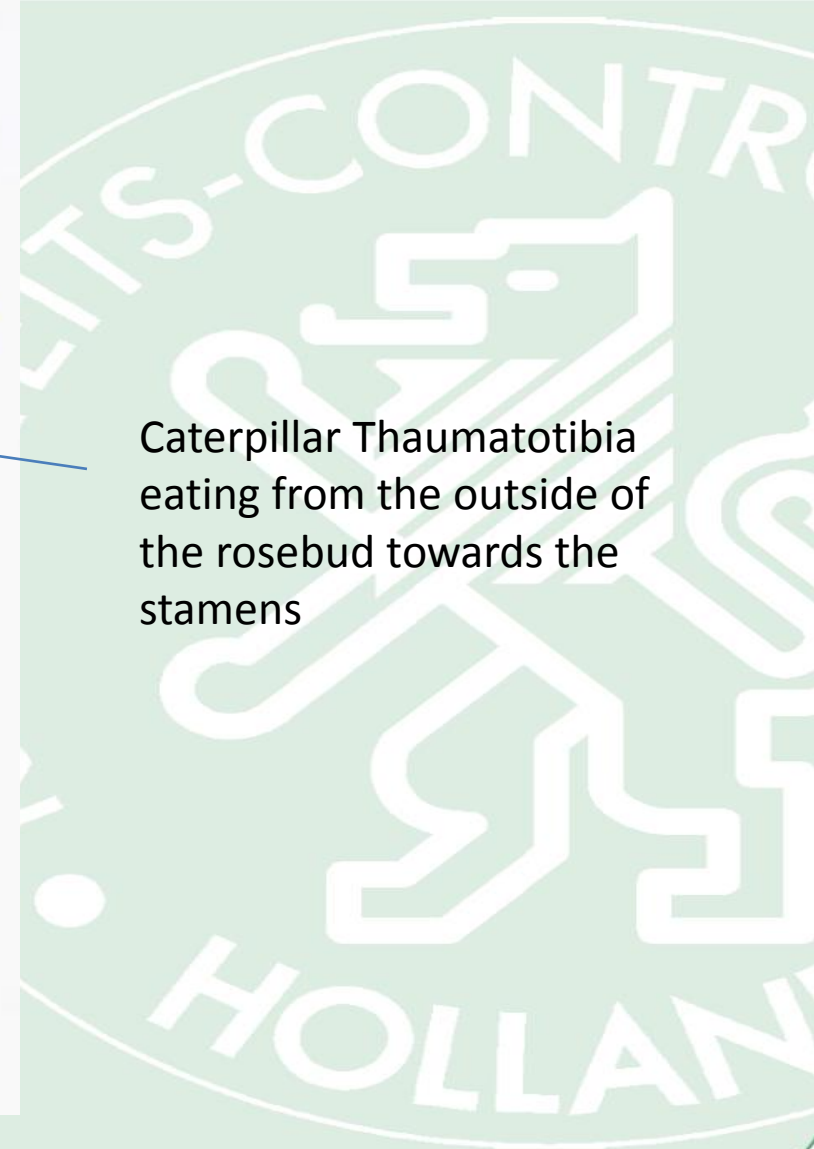


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Caterpillars Noctuidae mostly found eating on the outer petals



Caterpillar *Thaumatotibia* eating from the outside of the rosebud towards the stamens





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1.

2.

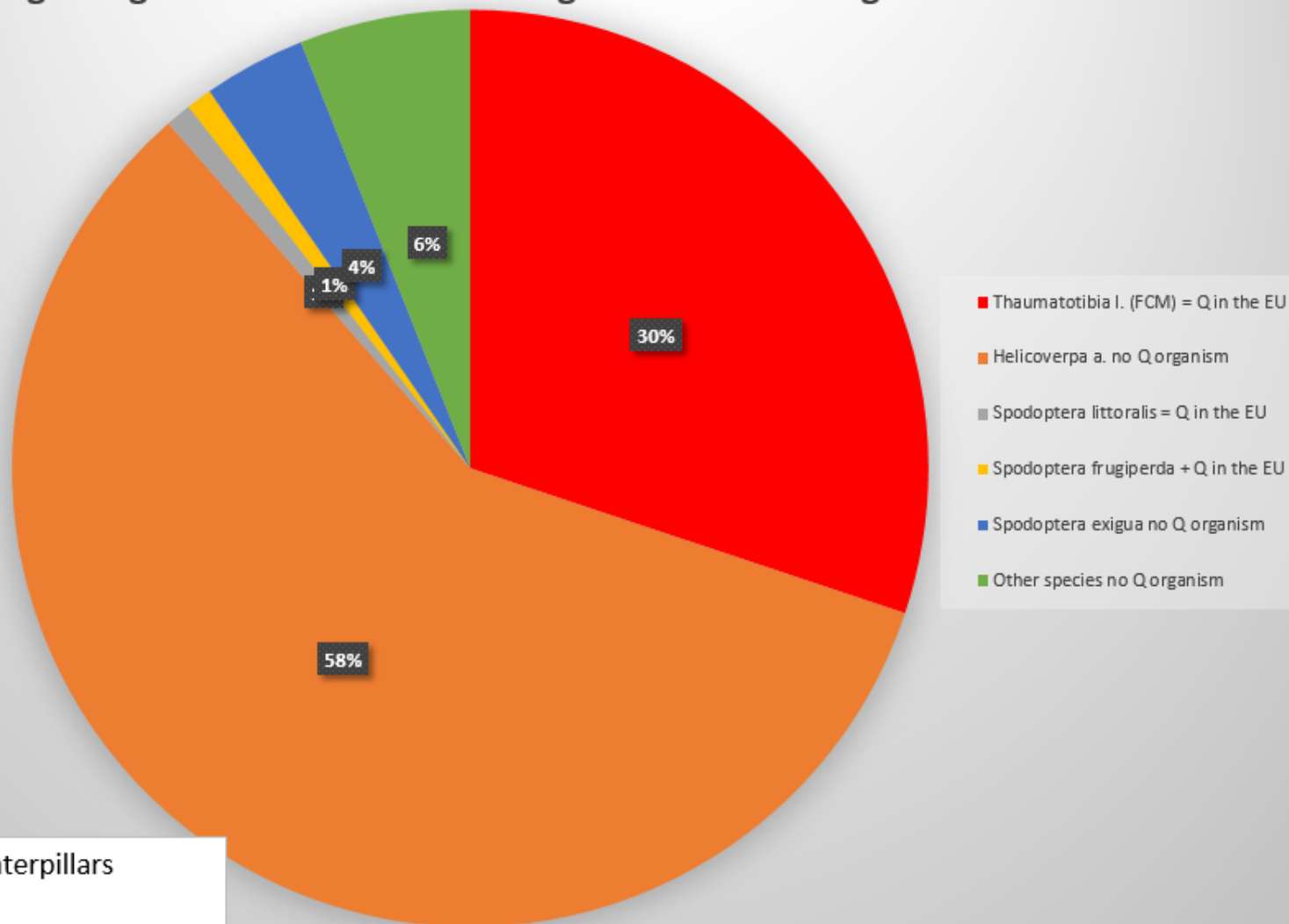
3.

4.

HOLLAND



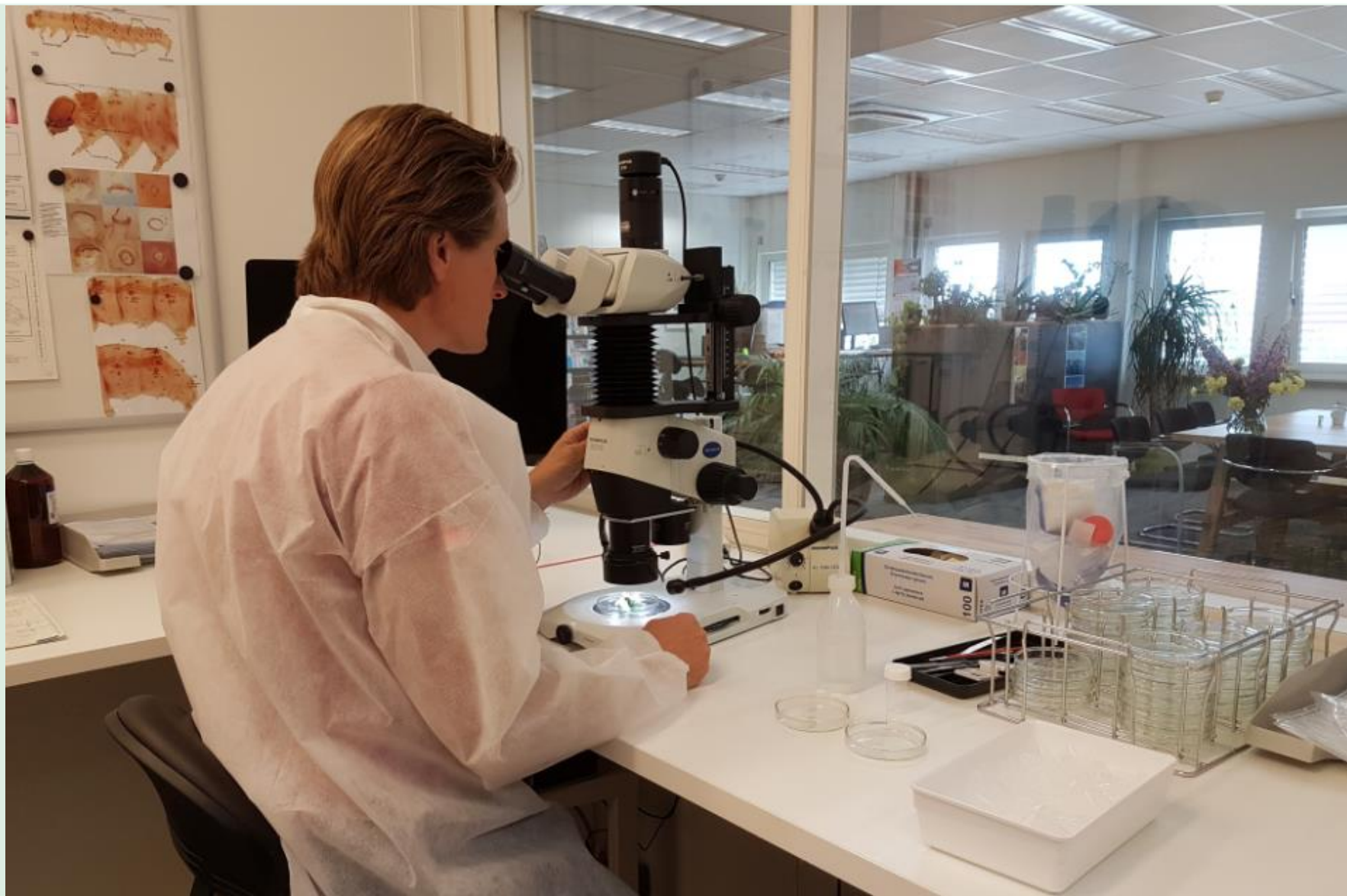
Overview of caterpillars found in Rosa cutflowers from Kenya from the beginning of 2016 till the end of august 2019 in the region Amsterdam

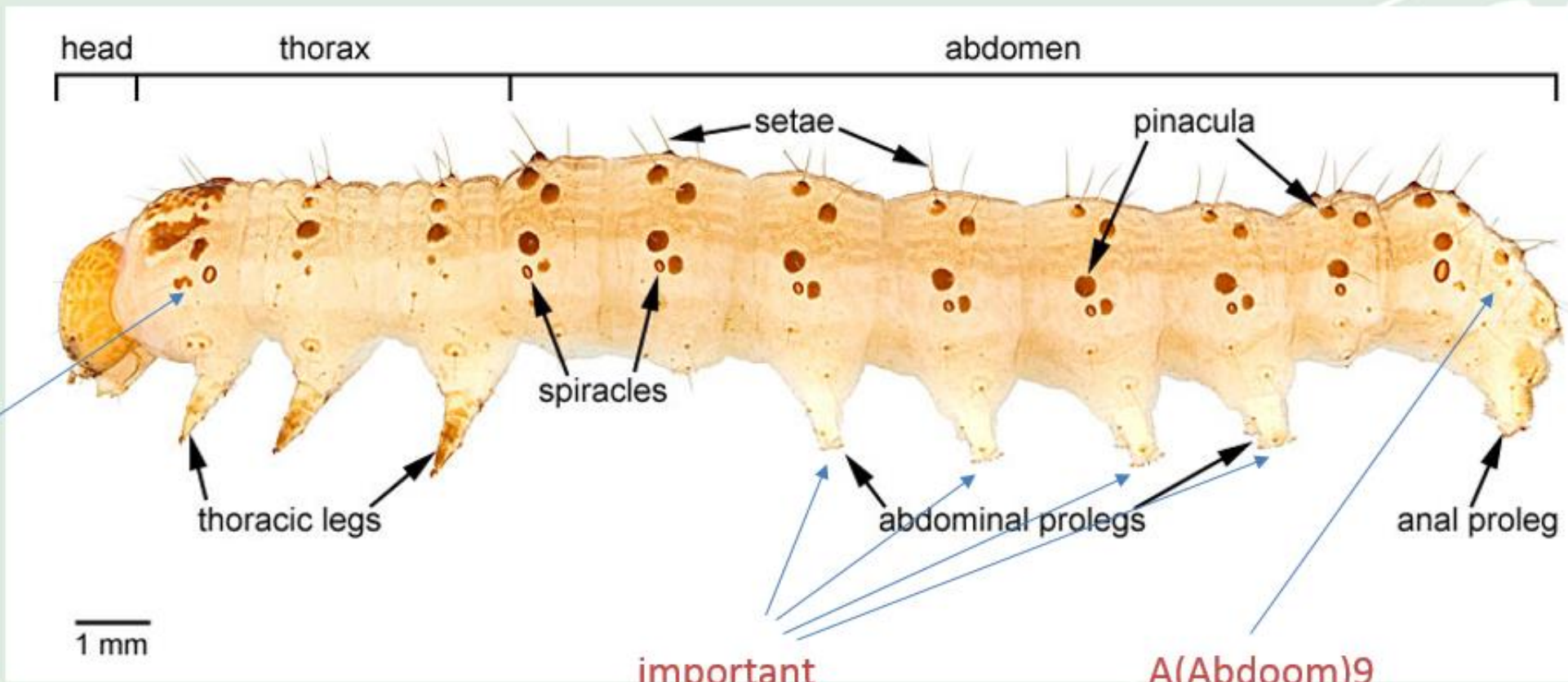


A total of 332 caterpillars



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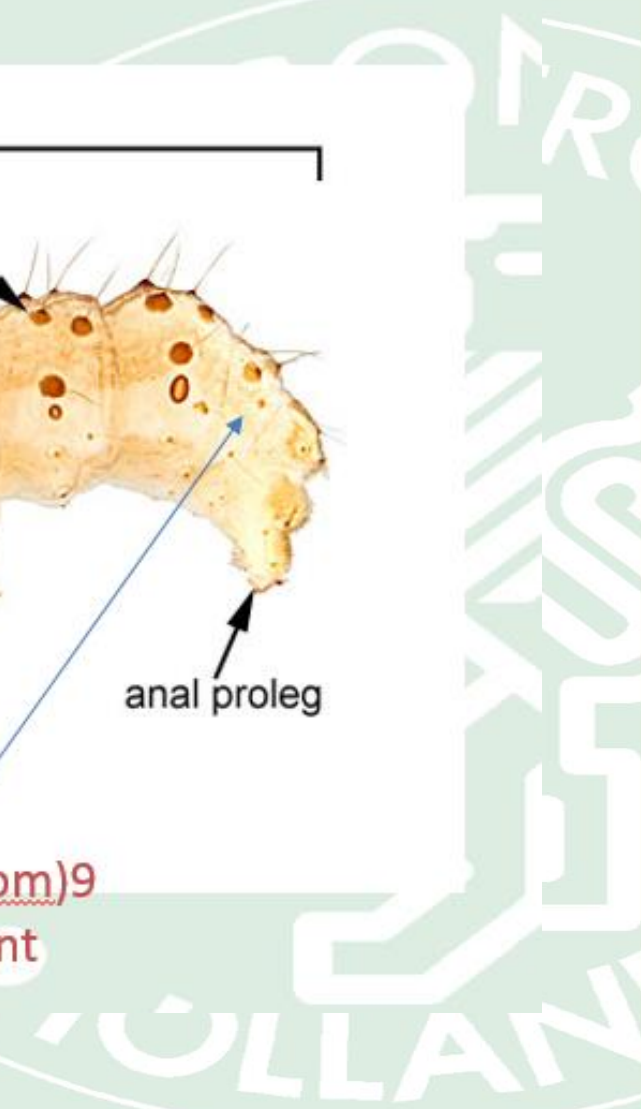




important

important

A(Abdoom)9 important





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Noctuidae (including *Helicoverpa* a.)

Crochets in a row



Tortricidae (including *Thaumatotibia* l.)

Crochets in a complete circle





Noctuidae

2 Lateral- setae on Thorax1

L1 and L2



Tortricidae

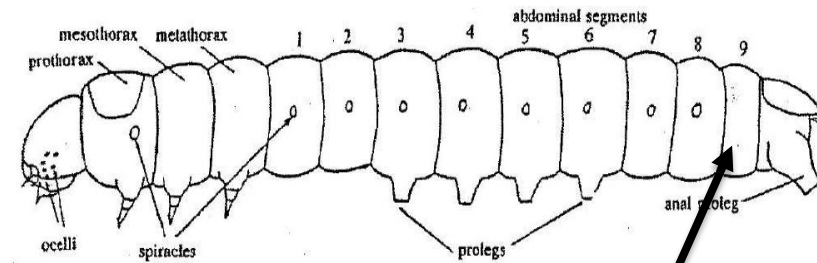
3 Lateral setae on Thorax1

L1, L2 and L3





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Helicoverpa fam.Noctuidae **Thaumatotibia** subfam.Olethreutinae



A9

A9 Pinaculum with 1 setae (hair)

A9 Pinaculum with 2 setae (2 hairs)

**Helicoverpa**

**The younger caterpillars:
Orange in color, the head and thorax shield
are brown.**

Thaumatotibia (FCM)

**The younger caterpillars:
Color is somewhat white, both the head and
thorax shield are dark brown**

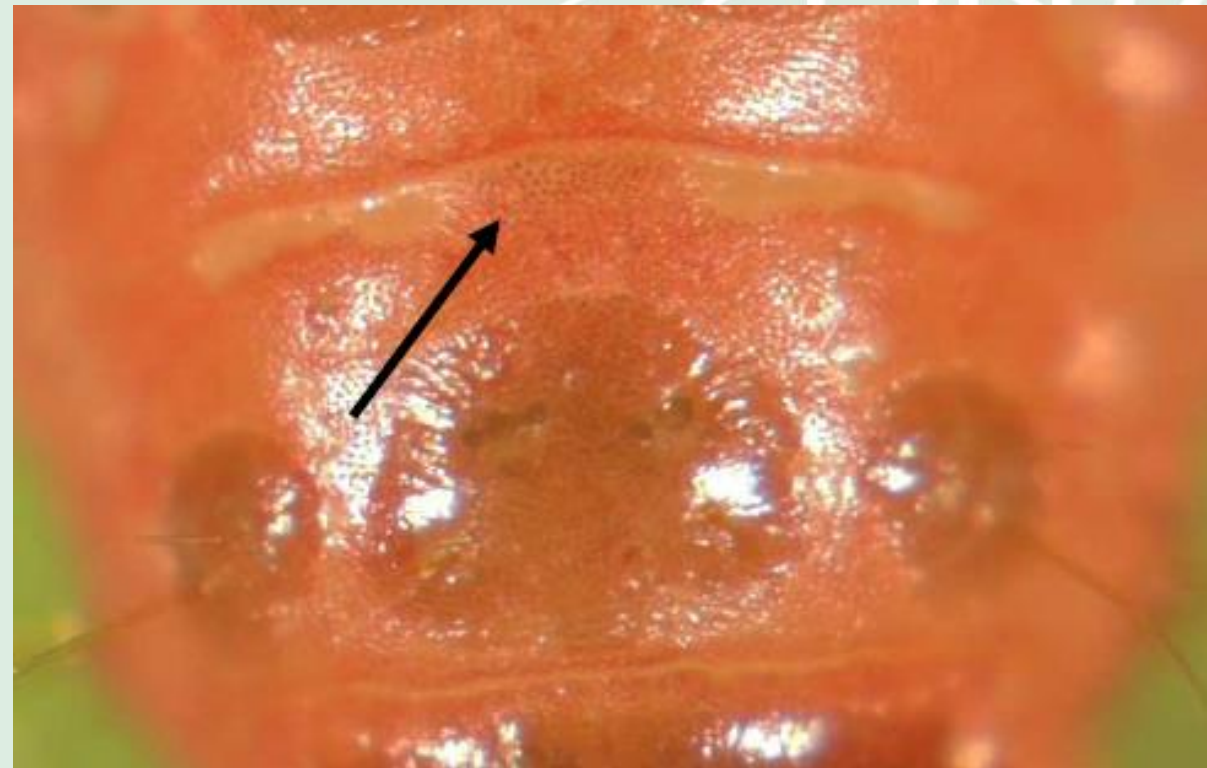


Helicoverpa



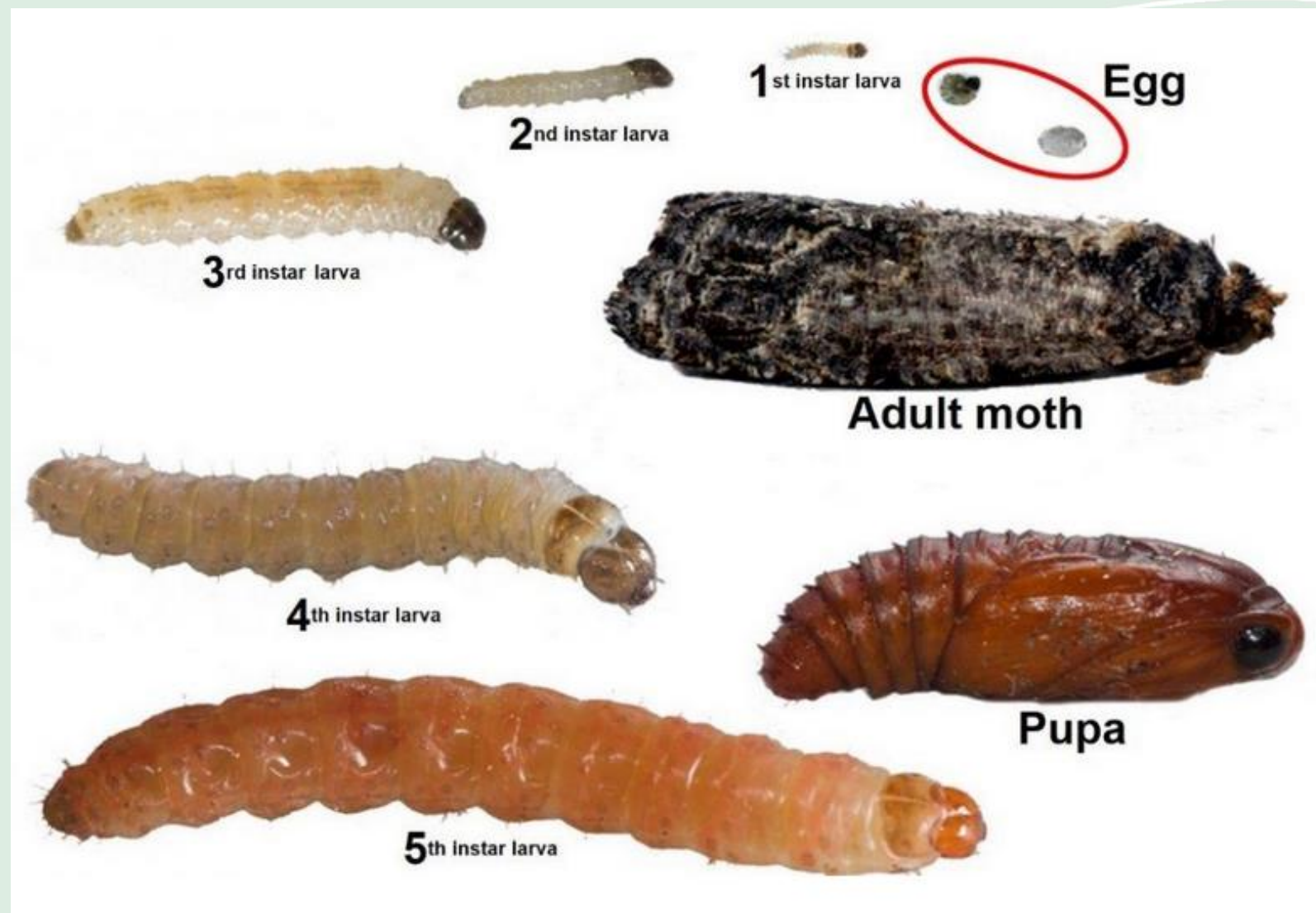
The skin is covered with clear visible sharp spines/
thorns

Thaumatotibia



short spines are closer to each other than *Helicoverpa*

Different stages *Thaumatotibia leucotreta* (FCM)





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Larvae of *Helicoverpa armigera*



First instar dorsal

lateral view 500 μ mSecond instar dorsal
1 mm

lateral view 1 mm



Third instar dorsal



Lateral view 1 mm



Fourth instar dorsal



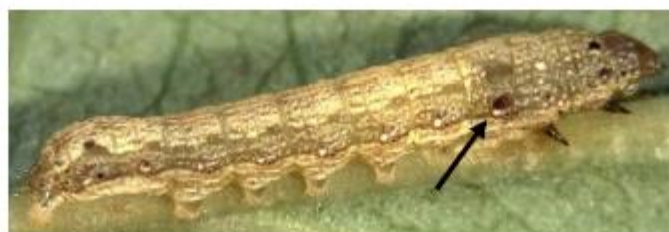
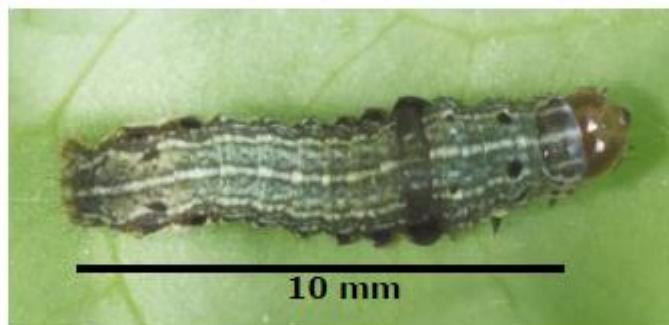
Lateral view

Other moths: cotton armyworm (*Spodoptera littoralis*)



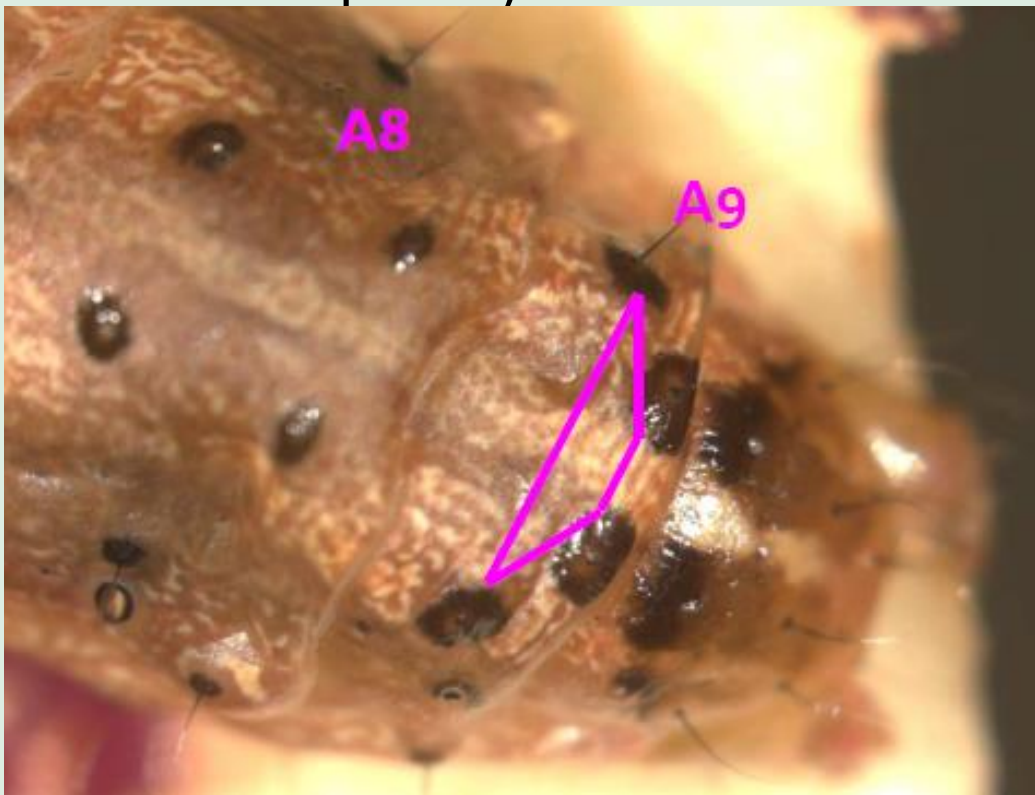
Note dark spot on 1st abdominal segment: first brown, later black

Download EPPO-protocol at <https://gd.eppo.int/standards/PM7/>





Spodoptera frugiperda - Noctuidae (an increasing number of interceptions)



Pinacula on A8 in a square
Pinacula on A9 like a trapezium

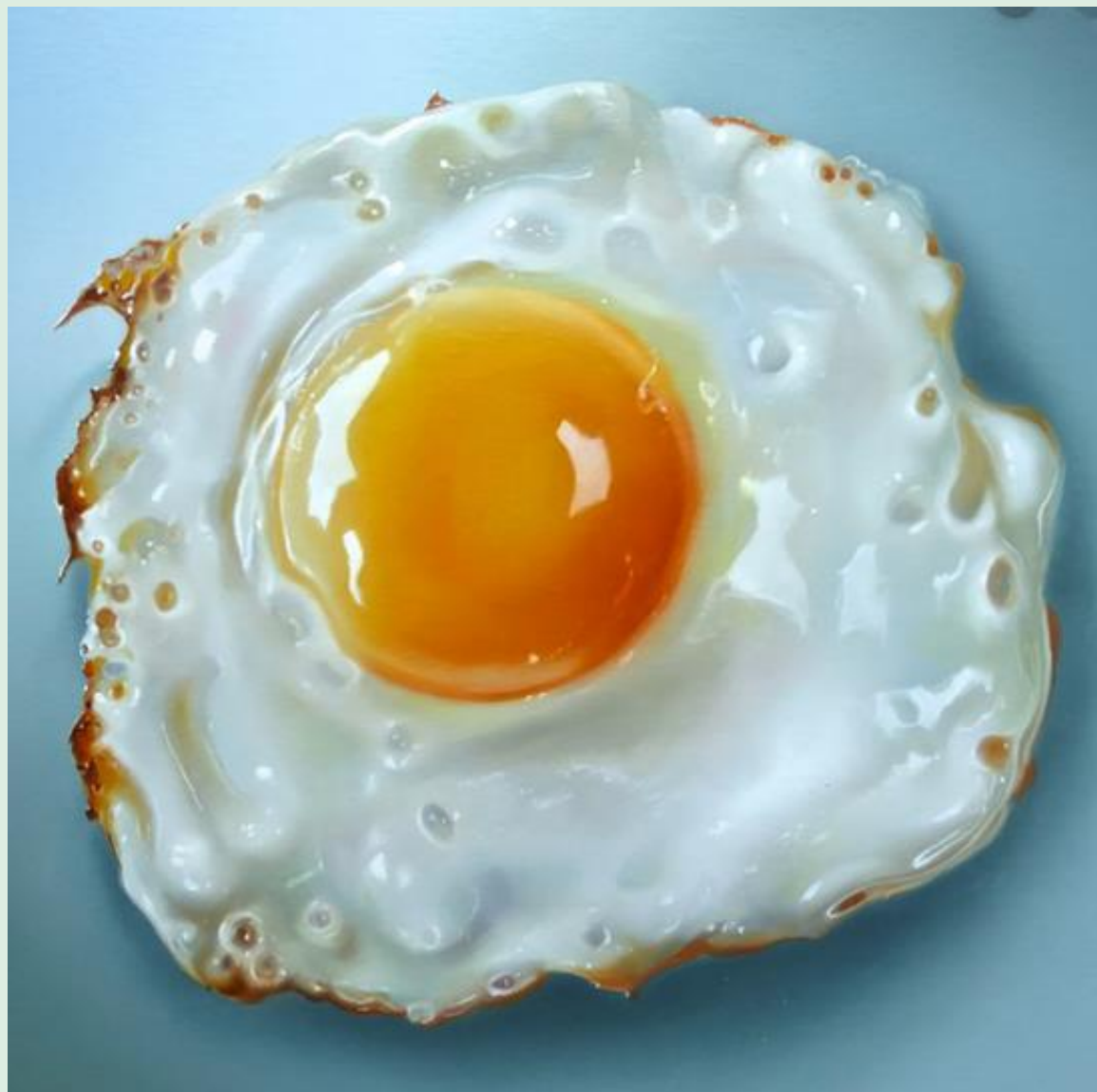


Ringed pinaculum SD1



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Eggs....





Eggs

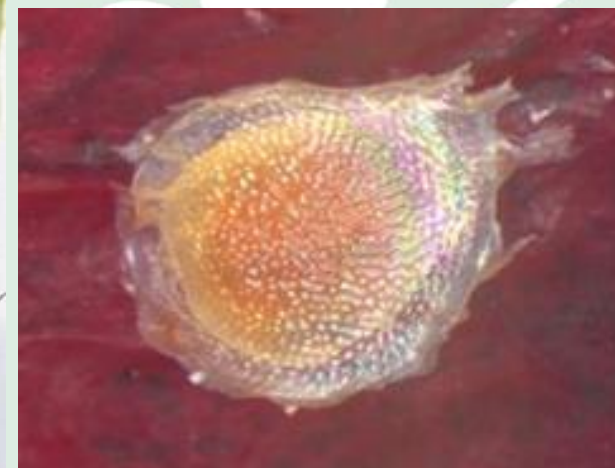
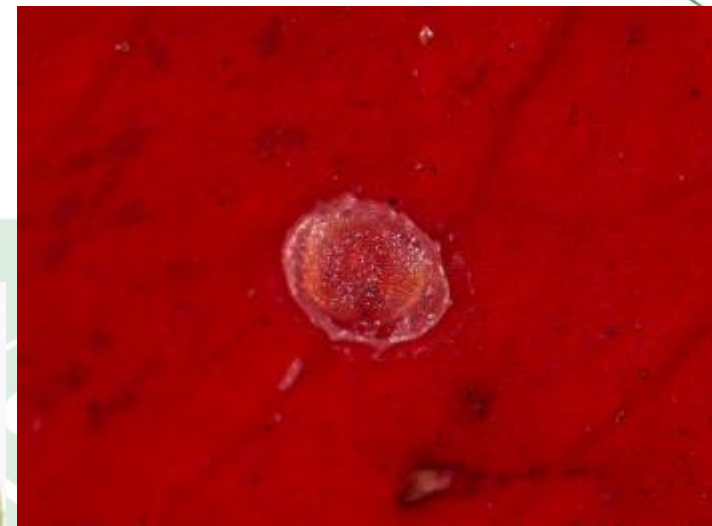
Helicoverpa



Egg is laid separate on the outside of rosebud.
The egg has ribs and on top there is Bump.



Thaumatotibia

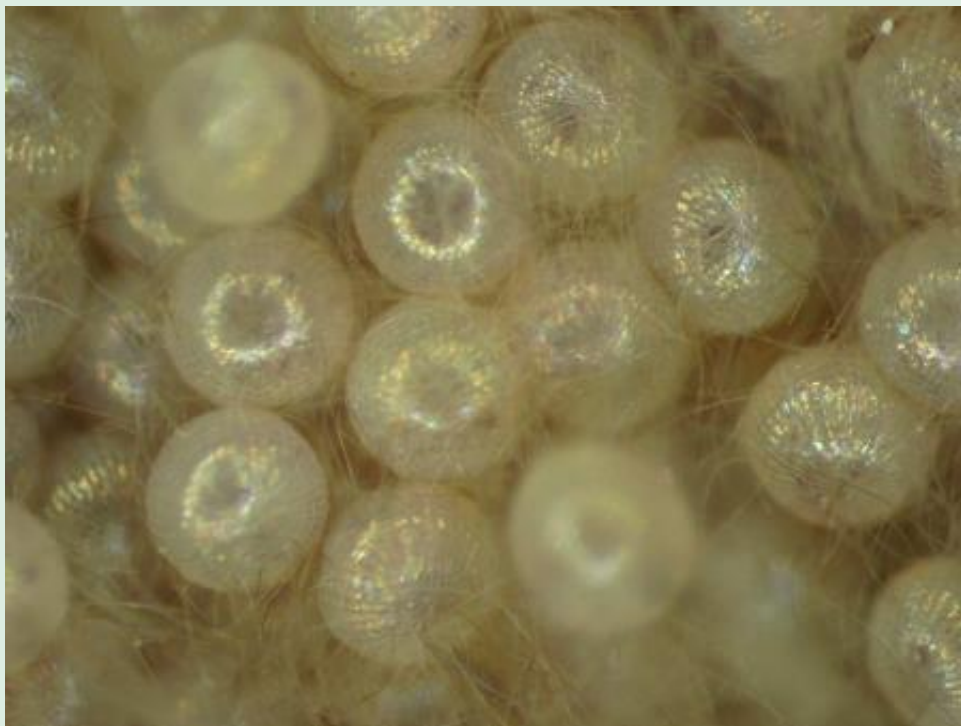


The egg is laid separately and is quite flat. The egg looks like a fried egg





Eggs Spodoptera sp.

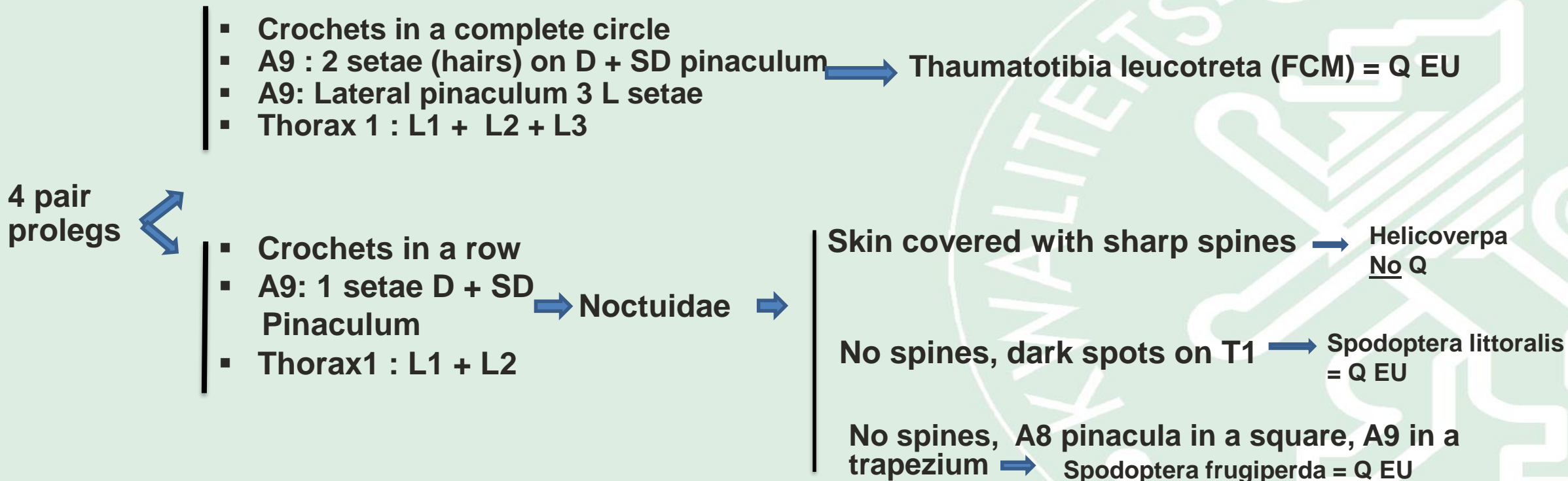


Eggs always placed in egg packages covered with hair





Flowchart caterpillars most found in Roses Kenya



Q = Quarantine organism

Info: idtools.org/id/leps/lepintercept



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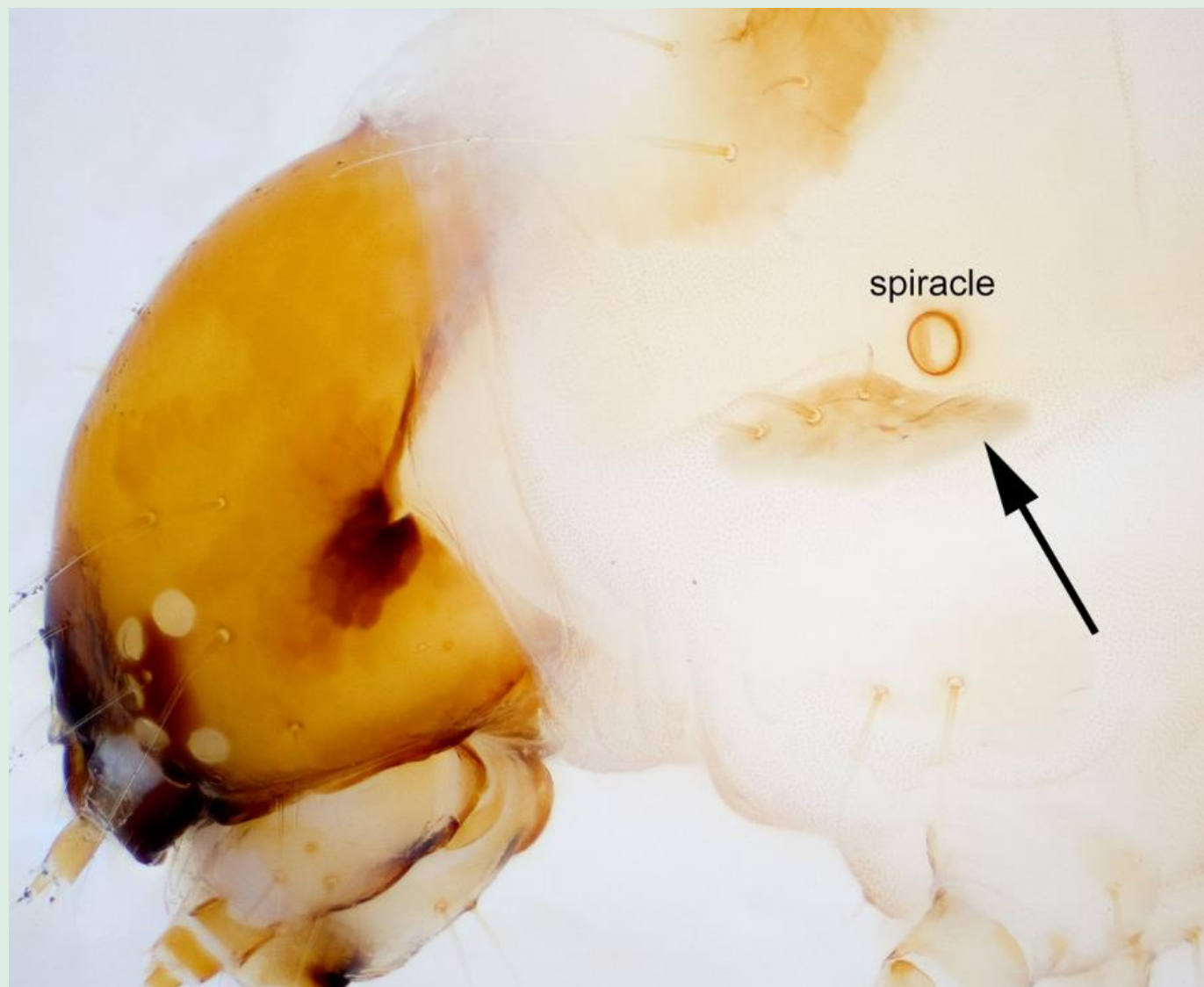
The Quiz: Who am I ?





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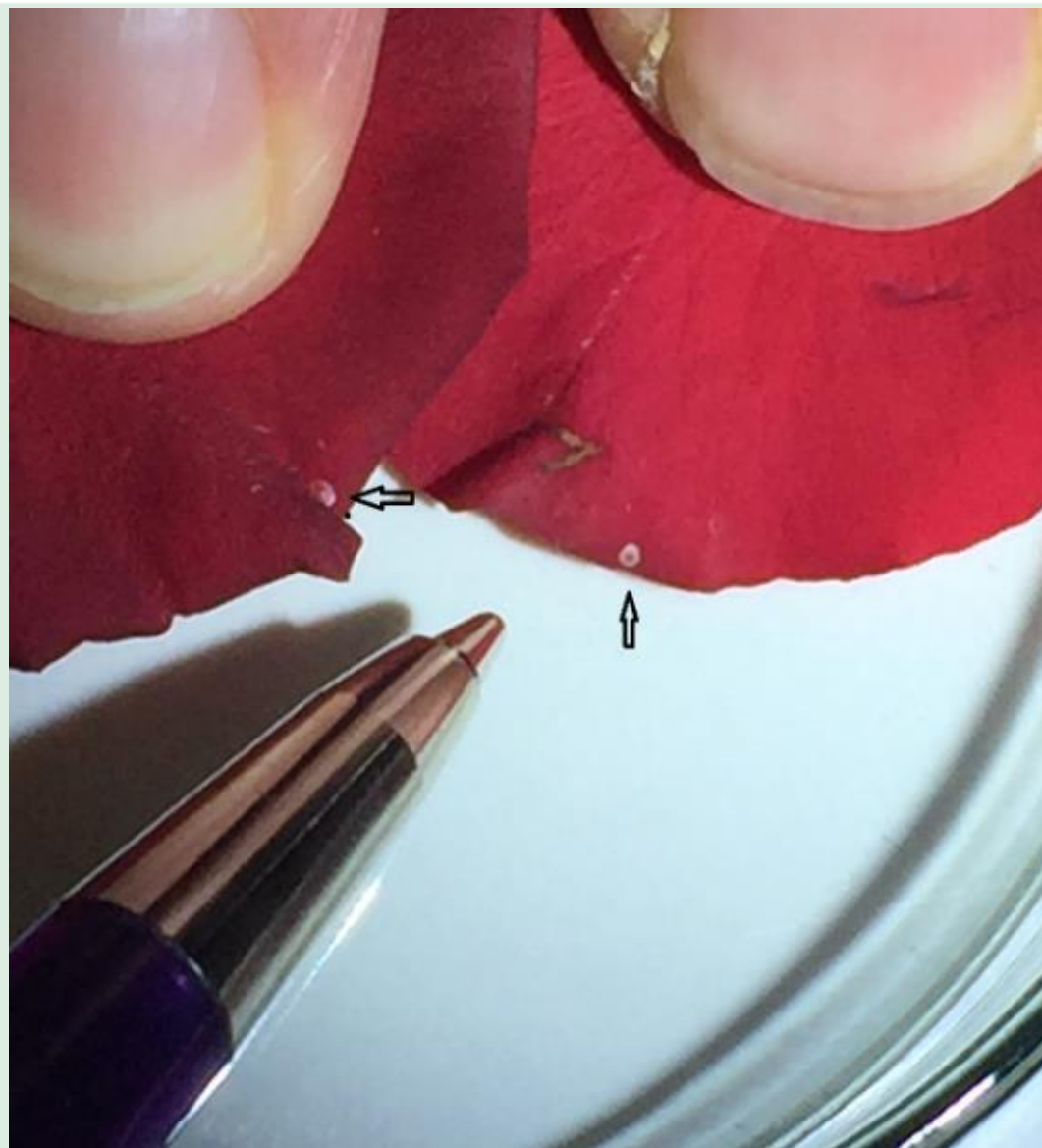


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Thank you for your attention!

