

Timing of exposure in final instar corn earworm – Part I

7/31 – 2:30 PM applied imidacloprid topically

A – HCS eye spots moved to periphery

B – HCS eye spots moved half way to periphery

C – no HCS

6:30 PM – no change; B slightly more movement of eye spots toward periphery

10:30 PM – A4 – pupated, looks normal; B more movement of eye spots

8/1 – 8:00 AM

A 1,2,3 pupated – A1 appears normal; 2,3 – wrinkled wings, legs, proboscis, antennae – lost some blood

B 1,2,4,5 - pupated – bloated wings, lost blood, thin cuticle around wings

B 3 – arrested ecdysis, looks like the previous CEW treatments. Found antennae developed but did not expand (pictures taken 8/3, 8/6)

C1,2 – HCS, C3,4,5 – no change

8/2 – 8:00 AM

C 1,2 – arrested ecdysis, as previous CEW treatments

Noticed that the antennae developed but did not have room to lengthen.

C3,4 - HCS

C5 – no change

5:30 PM

C3,4 – arrested ecdysis as previous CEW treatments

C5 wandering stage

8/3 - C5 HCS at around noon, start arrested ecdysis at about 5 PM, several pictures taken over the next 4 hours, never pulled the trachea out

All A's that pupated had normal eye pigment migration, appear to be developing normally except for wrinkled or bloated wings.

Controls – no treatment

<u>Pupate (n)</u>	<u>adult</u>	<u>days as pupa</u>
7/31 4	1-8/11, 3-8/12	11, 12, 12, 12
8/1 2	1-8/12, 1-8/14	11, 13
8/2 5	1-8/13, 3-8/14, 1-8/15	11, 12, 12, 12, 13
8/3 2	1-8/14, 1-8/16	11, 13
13		11.9 ± 0.8

Imidacloprid treatment

<u>Pupate</u>	<u>adult</u>	<u>days as pupa</u>	
A4 7/31	8/12	12	deformed adult wings
A1 8/1	8/14	13	deformed adult wings, did not fully escape pupal cuticle
A3 8/1	8/14	13	only abdomen escaped pupal cuticle
As 8/1	8/15	14	only abdomen escaped pupal cuticle
B1 8/1	8/14	13	only abdomen escaped pupal cuticle
B2 8/1	8/18		did not emerge from pupa but fully developed adult inside
B3 8/1 AE			arrested ecdysis as pupa, did not develop
B4 8/1	8/13	12	deformed adult wings
B5 8/1	8/14	13	deformed adult wings
		12.9 ± 0.7	
C4 8/2 AE	8/19	17	abdomen escaped pupal cuticle, all adult features present
C5 8/3 AE	8/19	16	abdomen escaped pupal cuticle, all adult features present
C1 8/2 AE			died 8/20
C2 8/2 AE			still alive
C3 8/2 AE			still alive