

Western bean cutworm - First confirmation of damage in Michigan (2007)

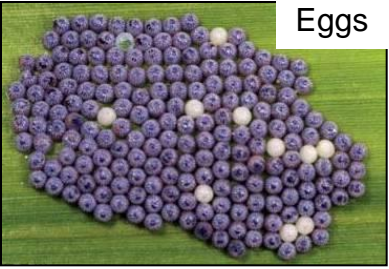
CDD
#005

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Steve Gower, MSU Diagnostic Services Lab
Dale Whitmore, Dow AgroSciences
Marlin Rice, Iowa State University (life stages)

Western bean cutworm (WBC) damage to field corn is confirmed in Michigan as of August, 2007. Larvae feed on ears late in the season, potentially causing loss in yield and grain quality. WBC also attacks sweet corn, dry beans, and (less commonly) tomatoes, and thus is a concern in Michigan.

Life stages



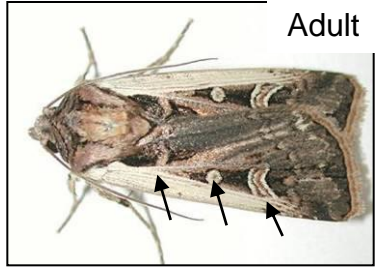
Eggs

- on upper leaf surface
- white, then tan, then purple
- avg of 50 per egg mass



Larva

- tan to pink; lighter on top
- 3 brown stripes behind head
- smooth body (no spines)



Adult

- ¾ inch long x 1 ½ inch across
- white stripe at edge of wing
- white spot & half moon on wing

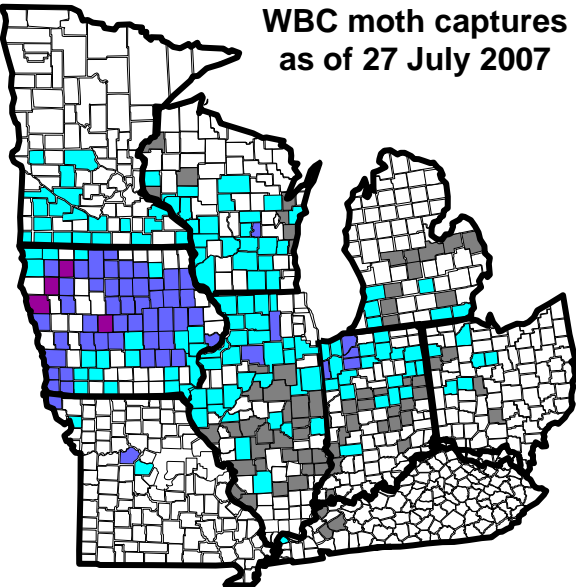
Eggs are laid on the upper leaf surface of corn. Hatch = 5 to 7 days.



Larvae mature through 5 instars over 3 to 5 weeks, reaching 1.5 inches. Larvae drop to the soil and overwinter in an earthen cell. Pupation in late May, early June.



Adults emerge in July. The moths are strong night fliers (moving miles). Females emit a pheromone to attract males for mating.



**WBC moth captures
as of 27 July 2007**

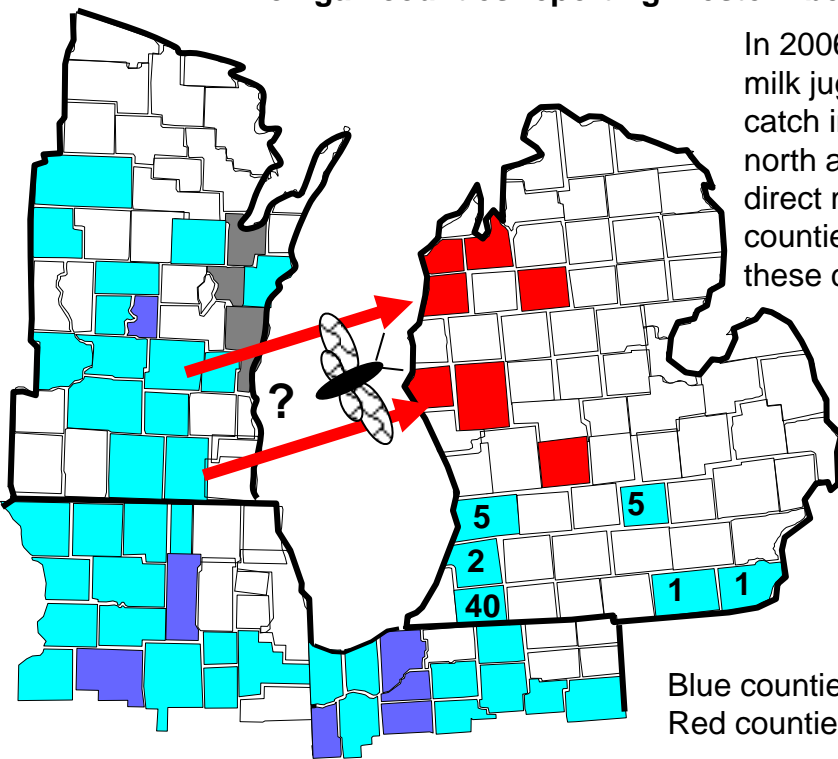
WBC is originally a pest of the west. Since 2003, it has spread rapidly across Iowa into the eastern corn belt. In 2007, moths were trapped as far east as southern Michigan and north-west Ohio.

Moth captures in 2007
Gray: no moths captured
Light blue: 1-100 moths total
Dark blue: 101-1000 moths total
Purple: >1000 moths total



*WBC milk jug
pheromone trap*

Michigan counties reporting Western bean cutworm in 2007



In 2006, a single WBC moth was captured in a milk jug trap in Cass County. In 2007, moth catch increased in SW Michigan, and spread north and east. This spread is probably from direct movement of moths from infested counties in Indiana. No larvae were found in these counties in 2006 or 2007.

In late August 2007, larval damage was reported in corn fields in the northwest lower peninsula. Infestation of ears ranged from 30% to 100%. This infestation may have originated from large numbers of moths picked up by winds, carried east, and deposited over NW Michigan.

Blue counties: moths trapped in 2007 (total number)
Red counties: reports of larval feeding on corn

Western bean cutworm damage



Young larvae feed on tassels and silks, while older larvae attack the ear.

Damage is distinctive. Larvae often tunnel directly into the side of the ear, resulting in holes in the husks.



Larvae feed on kernels, causing direct yield loss. Other insects (such as sap beetles) may then be able to enter the ear to feed. Molds and fungi can also infect the ear, further reducing quality and increasing the potential for mycotoxins.

Unlike other caterpillars that feed on corn ears, WBC larvae are not cannibalistic. Thus multiple larvae may be found in a single ear, causing additional damage. In ears with several larvae, there may be large amounts of 'frass' (caterpillar waste).