

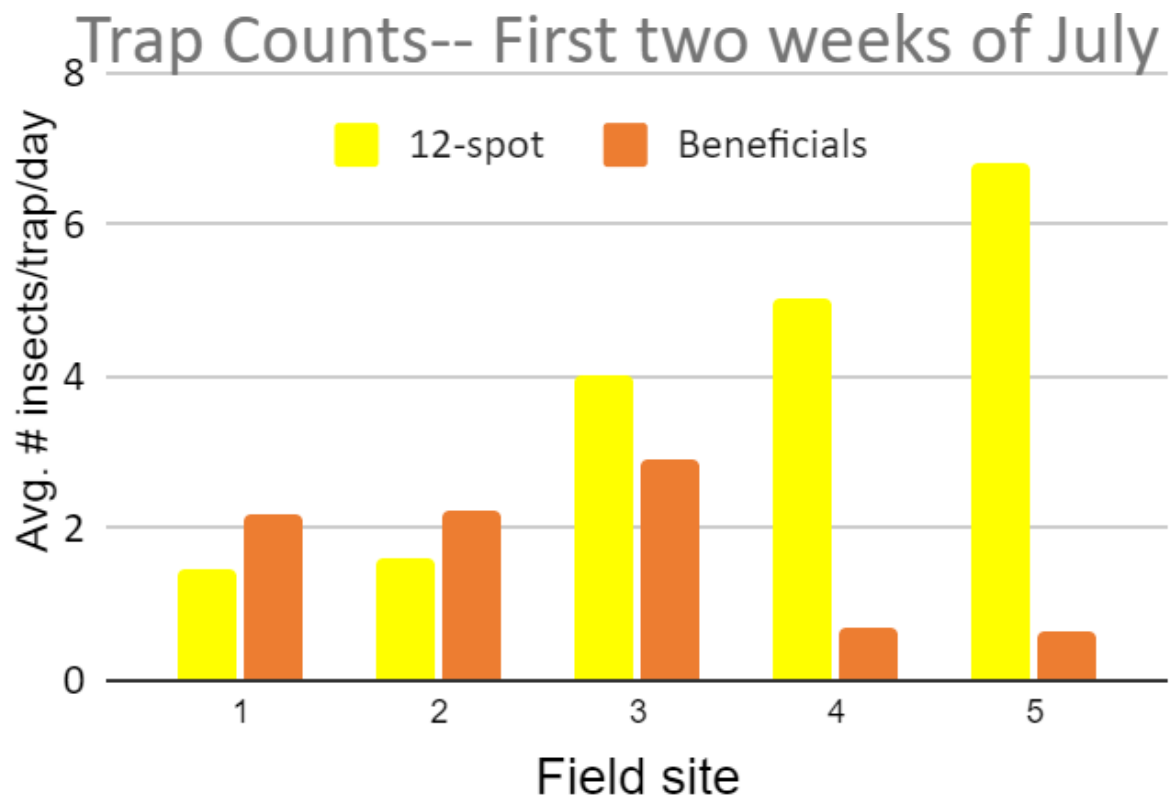
Rootworm Update - July 2024 - by Kyleah Rabe, Oregon IPM Center student technician

Diabrotica undecimpunctata undecimpunctata, more commonly known as twelve-spot beetles, western spotted cucumber beetles, or the western variant of **southern corn rootworm**, is a major pest of both corn and beans. In the larval stage, these insects feed on roots, increasing the plant's risk of disease, as well as causing overall damage to the plant's health. In the adult beetle stage, they have been known to cause extensive crop damage, including clipping corn silk and damaging bean pods. Western spotted cucumber beetles have two generations per year in Oregon, with a peak in early July and another peak that lasts August through October. These beetles are very vagile, meaning trap counts may not fully reflect pest presence. Their host plants include corn, beans, small grains, spinach, cucurbits, potatoes, tomatoes, and others.

To identify western spotted cucumber beetles, look at the elytra, or wing covers. They are yellow with twelve distinct black spots aligned in three rows of four. The top of their thorax tends to be yellow, while their head and underside are black. Adult beetles can range in size, but they are usually about 6-7mm ($\frac{1}{4}$ inch) long. Larvae are mostly white, with a brown head and last abdominal segment. Larvae are about 12mm ($\frac{1}{2}$ inch) long.

Western spotted cucumber beetles differ from **western corn rootworm** beetles (*Diabrotica virgifera virgifera*) in their appearance, hosts, and life cycle timing. We do not currently know specifics about the life cycle of western corn rootworm in Oregon, as they are a fairly new pest to this region. However, in our few years of surveying, they tend to be most abundant from July to September. Western corn rootworm adults are also about 6-7mm ($\frac{1}{4}$ inch) long, but their elytra are yellow with three vertical black stripes that do not reach the abdominal tip. The males look slightly different from the females, with their stripes appearing blurred or muddled. Both males and females have yellow thoraxes with dark heads and yellow undersides. The larva between both species look pretty much the same. Corn is the main host for these beetles, but they also may be found using weeds.

We are using yellow sticky trap transects (6 traps per field) to monitor rootworm activity. I am also very interested in beneficial insects so decided to count those too. The graph below shows that, for this specific sampling period, fields that had a higher number of beneficial insects (lacewings, ladybugs, ground beetles, rove beetles, and parasitoid wasps) seemed to have lower western spotted cucumber beetle counts. This makes sense as both ladybug and lacewing larvae are predacious. Ground beetles are the best predator of beetle larvae, but they are not often caught on the sticky traps, so it is hard to accurately assess their numbers. For this reason, we have grouped all beneficial insects together in the graph below to give a general estimate of natural enemy presence. However, more research would need to be done to claim that there is an actual correlation between presence of beneficial insects and *Diabrotica* beetle counts.



Field sites are as follows:

Aurora beans– 1,3

Aurora silage corn– 2,4

Albany sweet corn– 5



LEFT to RIGHT: Western corn rootworm, Southern corn rootworm, striped cucumber beetle. PHOTO CREDITS: Jim Jasinski, Ohio State University, bugwood.org – used with permission.