

WHERE HAVE ALL THE JAPANESE BEETLES GONE?

That is a good question as there has been a substantial decline in the Japanese beetle population in our garden this year.

Over the last twenty years or so Cathy and I have trapped all of the Japanese beetles in our rose garden in a cup of soapy water. I have never used an insecticide to control the beetle population. As we go through the garden, we keep an estimate of the number of beetles we trap each day, and write the number on a calendar. We started doing this about twenty years ago, and in some years, we trapped over 50,000 beetles. Overall, there has been a decline in the beetle population, but in recent years we still trap between 5000 and 6000 beetles per year. This year we have only trapped 187 which is substantially below our normal catch. On several of the days we did not catch one beetle.

Generally, Japanese beetles live about ten months in the soil. The adult beetle lays eggs in the soil in mid to late summer. The eggs hatch and become larvae, grubs, which feed mainly on grass roots until late fall at which time they burrow down below the frost line and hibernate for the winter. In mid spring the grubs begin eating on the grass roots again before becoming a pupa. Pupation takes about two weeks after which they become adult beetles. The adults usually emerge from the ground in this area in mid-June. During the beetle's life cycle soil warmth and moisture are very important requirements.

With the above in mind, I reached out to professor Robert F. Bruner an entomologist at Purdue University to see if he could explain the decline. He responded by saying that he could not give me a definite answer without significant research, but he did give me an educated guess.

If you remember last in mid-December we had two nights of below zero temperatures, minus 1 and minus 9. This followed a little warmer than normal first part of December. Normally, the grub burrows down below the frost line in late autumn which could be as late as mid-December. Did the extremely cold temperatures kill some of the beetle grubs that were not below the frost line?

Dr. Bruner responded by saying “the cold snap could have killed some of the population, but by the time it happened, I would have expected the beetles to be fully into their overwintering stage, so I’m not sure it would have done that much damage”.

Soil moisture is extremely important in the development of the beetle when it is in the grub stage. As you can easily recall moderate drought conditions occurred in central Indiana starting in April and ending in June. The dry conditions prevent the grub from moving through the soil and prevents it from feeding on grass roots and subsequently pupating into the adult beetle.

Dr. Bruner said “The drought we have experienced, however, seems a more likely culprit. It would have hit right when the beetles would have left their overwintering period, and the reduction in food would have seriously impacted their ability to grow into their adult stage. A significant portion of central Indiana is still in drought conditions, so I’m not sure how many beetles will emerge this season. However, I wouldn’t treat this as a new normal; it’s entirely possible they could recover later this summer, or have a normal population next year.”

Dr. Bruner’s educated guess is supported by other reports I have read from Michigan State University and the University of Minnesota. In conclusion, I along with Dr. Bruner, believe the drought conditions we have experienced this spring in Indianapolis have led to the decline in Japanese beetles. I do not see a change for the rest of this summer, but I do see a little larger population next year as there still are some, but fewer, beetles out there doing their dirty work.