

Japanese Beetles: Are They Doomed?

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BIZARRE" best explains the activity of Japanese beetles in Wisconsin in 2003. It's October; "usually" by this time of the year most Japanese beetle grubs have attained their final larval stage (i.e., 3rd instar) and are preparing to overwinter (i.e., hibernation). Yet, both 1st and 2nd instar Japanese beetle grubs are abundant, and 3rd instar grubs are far and few between. At this time, it is unclear if the grubs will attain their final larval stage; it ultimately depends on the physiological development of the grubs between now and the first sustained frost that initiates the cessation of grub feeding and final physiological preparation for overwintering. Moreover, it is not fully understood if Japanese beetle grubs can successfully overwinter as 1st or 2nd instar grubs. Because the Japanese beetle has only one generation per year, survival is imperative for future generations. Of course this is not to say that all Japanese beetles are doomed, but if a large enough portion of the population fails to successfully overwinter, next year's grub population may be adversely affected.

So, what's the cause(s) of the perceived inability of the grubs to attain the appropriate larval stage to ensure overwintering and future generations? Since last autumn, all the necessary conditions for the demise of the Japanese beetle have unfolded. A relatively dry 2002 fall, the lack of consistent snow cover, relatively deep frost (up to 7 feet in some locations in Wisconsin), cool and wet spring and early summer, and hot and dry (lack of rain) summer and fall were common where Japanese beetle populations exist. Initially, it may seem likely that the deep frost is the primary cause of the rather unusual occurrence of the Japanese beetle. However, it is quite difficult to identify one or even a combination of causes for the bizarre activity exhibited by Japanese beetles in 2003.

Nonetheless, in 2003, Japanese beetle adult emergence was delayed by as much as four weeks. This may be in part a result of the deep frost and the relatively cool, wet spring and early summer. This occurrence, coupled with relatively dry conditions commencing in early to mid-July, as the adult beetles began to fly, all contributed to a delayed egg hatch and retarded larval (i.e., grub) development. Furthermore, as dry soil conditions persisted into the fall, the sluggish development of grubs continued. This is not unexpected since most white grubs, especially Japanese beetles, are highly dependent on ade-

quate moisture for appropriate development. Because relatively few grubs have attained the 3rd larval stage, they likely don't have the necessary fat reserves (i.e., fat body) to overwinter. As a result, it's anticipated that next year's grub populations will be measurably lower compared to years previous.

Effective grub sampling this fall may provide you with an appropriate estimate of anticipated activity in 2004. If the grub population is predominantly comprised of 1st and 2nd instar grubs, the likelihood of problems with Japanese beetle grubs next growing season is relatively low. However, should you have mostly 3rd instar larvae, the chances are high that you will have to focus your attention to Japanese beetles in 2004. ♣

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