



The Chem Gro Crop Watch, Issue #6, 6/21/18

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The Brown and Green Menace!

We all know it by name, and if you have been doing any sort of driving in the past week you will know that Japanese beetles have emerged and they are back with a vengeance. It won't be long before they start to do some real damage not only to our corn and soybean crops but any grape vine, rose bush, willow, linden, and crabapple tree in the county will begin to suffer the effects of Japanese beetle defoliation. Now before we do anything else, I think it is necessary to review the life cycle of Japanese beetles and then we could talk about thresholds and control measures.

Life Cycle



Japanese beetles start their life cycle as eggs laid by a female Japanese beetle in late July and up to early August. 2 weeks after being laid, the eggs hatch into the Japanese beetle grub where it will begin feeding on the roots of grasses and field crops to survive until cooler conditions begin to occur. At this point, the grubs will burrow to lower layers of the

soil for the winter to avoid the freezing conditions. In the springtime, the grubs emerge to continue feeding

again on available grass roots. This is where damage can occur to a young corn crop due to grubs pruning vital roots on the corn plant causing stress or in rare cases, plant death. After a short feeding period the grubs turn into pupae, the transition phase between grubs and adults. Mid-June arrives and with it the emergence of the adult Japanese beetle. Adult beetles like the one below has a green midsection and head with a copper like brown wing covers on their backs. It is important to look for 5 white tufts of hair on the sides as that would distinguish Japanese beetle from their false Japanese beetle counterpart.

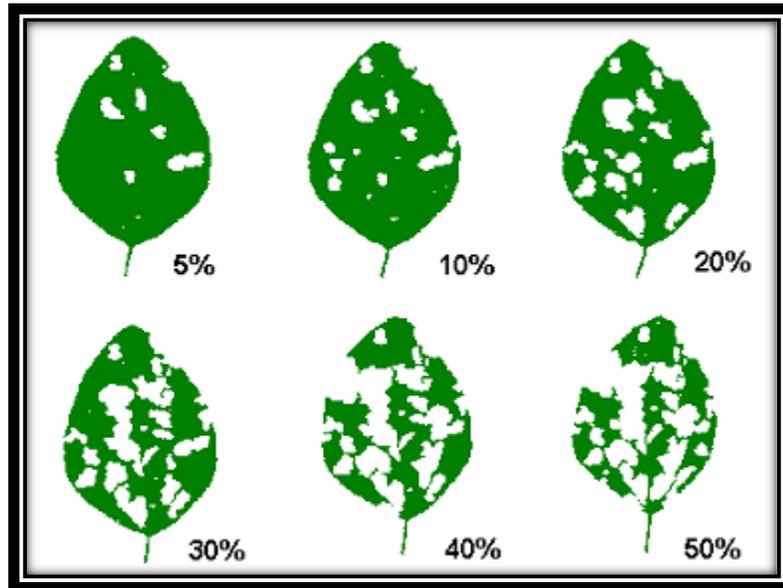


This year adult beetles began emerging as early as June 9th and are now getting to be in greater numbers as more and more emerge from the soil. These adults will have their way with our crops up to 4-6 weeks from their emergence with every female having the potential to lay 40-60 eggs in the soil to start the life cycle all over again.

Thresholds

Its important to keep our economic thresholds in mind before applying any type of insecticide to our crops for several reasons. The first and most obvious one being that it must pay to apply any chemical to our crops and if the damage done to our crops is not enough to warrant using any form of control measure then we would be wasting money on an operation that doesn't pay off. Another subtle reason to consider thresholds when making the decision to spray insecticide is how many natural predators are there in the area that we are interested in spraying? While keeping fields clean can always seem to be the objective of what we are doing, it doesn't always pay to do so especially when you disrupt the delicate predator to prey relationship in nature. This idea has been proven time and time again in research as numbers of pests tend to stay below economic threshold levels when consideration for natural predators are taken into account. Threshold for corn is relatively simple, if there is an average of 3 beetles per plant or the silks are clipped to

less than ½ inch before the corn is over halfway pollinated, control measures should be taken. Soybeans require a little bit more judgement as threshold levels are around 30% defoliation before flowering and 20% after flowering before any control measure is warranted. Charts like the one below can help when making your decision whether there is enough damage to even think about spraying.



Control

Control of Japanese beetles in corn and soybeans is relatively simple and can be done with several commonly used insecticides available for use. To make things simple I will talk about 3 commonly used insecticides for corn and soybeans and then I'll touch on a few other insecticides to use for site specific areas such as vegetable gardens and trees.

- Hero: This insecticide can be used in both corn and soybeans and gives fast knock down power on Japanese beetles. In addition to fast knock down power there is residual activity on surfaces the insecticide has made contact with. For soybeans, Hero is the best option when spider mite control becomes a concern and Japanese beetle control is also desired.
- Leverage 360: If control of Japanese beetles on just your soybean is your concern, then Leverage 360 is a good option for an insecticide that not only provides a long-lasting residual, but also has 2 different modes of action. These 2 different modes also allow for residual not only on the surfaces the insecticide has contacted but also a systemic action that travels to new growth on the plant.
- Warrior II: If you are looking for a relatively cost-effective insecticide for both corn and soybeans. Like Hero, Warrior provides residual on areas the insecticide has contacted.

Outside of corn and soybeans, control of Japanese beetle could be desired in garden and ornamental areas around the house. For the purpose of garden use, insecticides like Warrior II, Mustang Maxx, and Sevin XLR can be used with success but make sure to follow the label for use rates and pre-harvest intervals as these restrictions must be followed to avoid excess insecticide residue on fruits and vegetables in your garden. For ornamental areas, Tempo can be applied to insure beetles keep off any plant that has a history of major pest damage. Lawns don't usually suffer from Japanese beetle damage but the grubs from Japanese beetles can do severe damage to the root system. The best time to kill the grubs is in late July and early August when those grubs are just hatching and are young. 2 common active ingredients to control grubs in turf are imidacloprid and chlorantraniliprole, both of which are systemic insecticides with low risk to the user. In the case of chlorantraniliprole, its usage even prevents harm to most non-pest insects.

Final Thoughts

This year has been one for the record book, whether it was a late start to our spring or record temperatures we experienced in May, our crops have been put to the test. Japanese beetles will be no different but it is always important to keep calm when looking at your crops. Soybean plants carry around extra foliage and can take quite a bit of damage and corn can still pollinate just as long as it has some silks to catch the pollen that it sheds. Remember that these economic threshold levels are set to ensure that every pesticide decision that you make in the field has a chance of getting you a return on your investment. Like always, my job is to give you the best advice possible, what you do with it is up to you.