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Management decisions for bean leaf beetles and bean pod mottle virus

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Abstract

Yogi Berra said, "If you come to a fork in the road, take it." Many soybean producers will be at that fork in a couple of weeks, trying to decide whether or not to spray overwintered bean leaf beetles, and determining how to manage bean pod mottle virus. The dilemma is that some overwintered bean leaf beetles may transmit bean pod mottle virus and not knowing where in Iowa the problem is most likely to occur, what percentage of beetles are transmitting the virus, or when to spray can greatly complicate management decisions.

Keywords

Entomology, Plant Pathology

Disciplines

Agricultural Science | Agriculture | Entomology | Plant Pathology

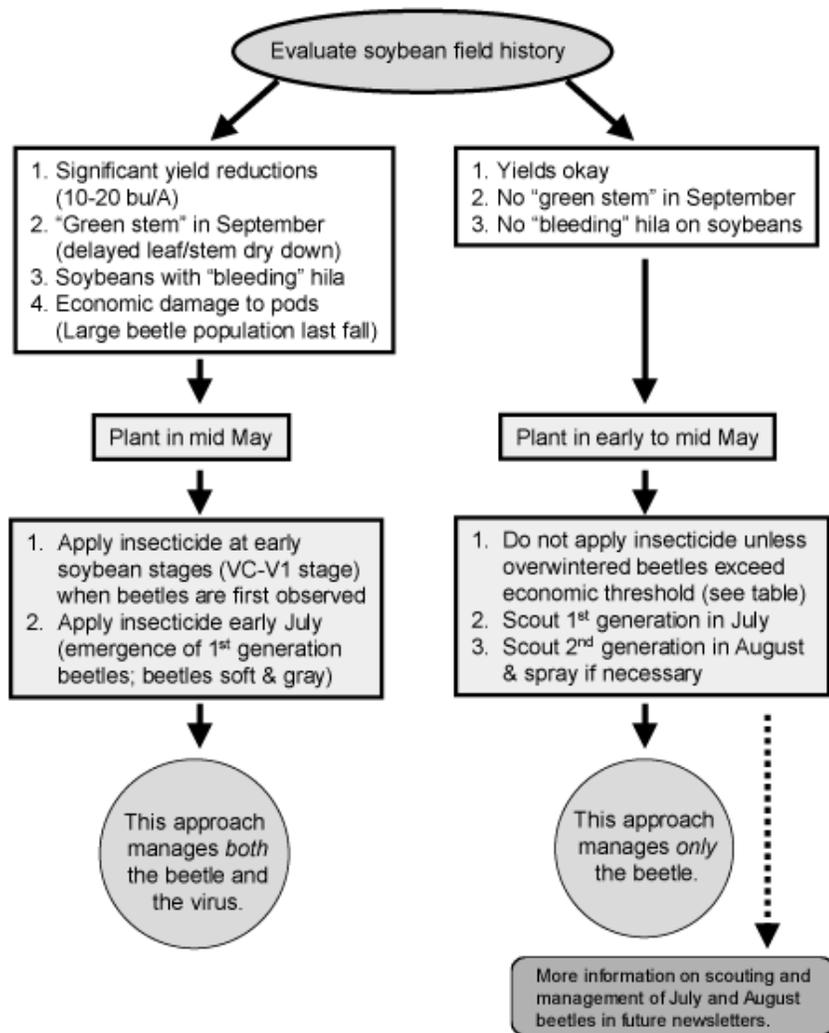
INTEGRATED CROP MANAGEMENT

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To better simplify management decisions, we have designed a "living" decision-making chart (below). This chart should help guide your decisions for managing this pest complex. The chart is described as living because it will be updated as we learn more about the management of the beetle and the virus. This chart asks a soybean producer to consider the field history of this problem before making any management decisions. Then the producer must make one of two (hence, the fork in the road) management decisions: 1) spray both overwintered beetles and first-generation beetles to manage both the insect and the virus, or 2) spray only beetles that exceed established economic thresholds to prevent plant stand reduction (early season) or pod injury (late season). A third option would be to do nothing (ignore the value of knowing the field history and of scouting the field for potential beetle problems).

Early-season bean leaf beetle and bean pod mottle management decisions



If your decisions take you to the right-hand side of the chart, then you must scout overwintered beetles to determine their population size on seedling soybean. A very important concept to understand is that Table 1 does not take into account possible disease transmission by the beetles. Table 1 shows the number of beetles per plant (or foot of row) needed to justify insecticide treatment. Three or more beetles per plant rarely are documented but may be possible in some fields.

Table 1. Early-season bean leaf beetle economic thresholds in soybean (beetles per plant). These thresholds are to not be used when attempting to manage the bean leaf beetle-bean pod mottle virus complex.

		Cost of Treatment (\$/acre)																	
Market Value (\$/bu)	Growth Stage VC ^a						Growth Stage V1 ^a						Growth Stage V2 ^a						
	\$6	\$7	\$8	\$9	\$10	\$11	\$6	\$7	\$8	\$9	\$10	\$11	\$6	\$7	\$8	\$9	\$10	\$11	
\$5.00	2.4	2.8	3.2	3.6	4.0	4.4	3.7	4.4	5.0	5.6	6.2	6.8	5.9	6.8	7.8	8.8	9.8	10.7	
\$6.00	2.0	2.3	2.7	3.0	3.4	3.7	3.1	3.6	4.1	4.7	5.2	5.7	4.9	5.7	6.5	7.3	8.1	8.9	

^a For beetles per row-foot, multiply number by 7.6.

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