



## Much is revealed, on edges of fields

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The edges of crop fields are dynamic places. There is always something moving and something happening. Field edges are like off-ramps of a busy freeway. When you travel the local turnpike, especially on a holiday weekend, you see more people than normal, as well as uncommon or odd stuff—huge pieces of blown-out tire, angry llamas hanging out of trailers, Elvis driving a Humvee, etc. In the same fashion, we sometimes see more insects or damage on the edge of a field, plus we find some odd-ball specimens.

Edges tend to be colonized by insects before the rest of the field because the edge is usually the first part of the crop encountered by the pest. Insects overwintering in field margins, for example corn flea beetle and cereal leaf beetle, are found along field edges first. For these pests, damage and insect numbers are initially greater on the edge versus center of the field. Similarly, some insects actually start feeding in field margins, then move into the field itself. For instance, stalk borer and armyworm infestations can start in the grass along the edge, then move into the crop.

Other insects are actually attracted to edges. A classic example is winged aphids, which are attracted to the interface between dark dirt and green plants. They land at this edge, probing plants (sometimes spreading viruses in the process) and leaving nymphs behind to start a population.

Finally, edges may provide a better habitat for certain pests. Spider mite infestations can be quite large on the edges of soybean fields; one of the explanations is that dusty leaves along dirt roads provide a better habitat – maybe by providing anchoring for webbing, or by reducing pathogens that kill mites – than leaves further out in the field.

Some of the unusual or bizarre insect samples that come in to my office are collected from edges of fields. These insects generally live on weeds along the field edge, in a neighboring crop, or in another nearby habitat such as woods or turf. As insects move about the landscape, some naturally move into the edge of an adjoining field. Generally the problem is confined to a few rows along the edge, and even though damage to some plants may be severe, treatment of the whole field isn't needed.

An example of an unusual critter is the snailcase bagworms, *Apthona helix*, a weird caterpillar from Europe that is spreading across the U.S. This insect (all females, by the way) feeds on dozens of trees, shrubs, flowers, and even crops. It lives in a distinctive curled snail-like case made of silk and soil. Homeowners normally report snailcase bagworm, since it climbs onto houses and sticks so firmly that it can't be removed, even by a power washer. However, occasionally this insect is found on field edges. The bagworms apparently crawl or drop out of trees onto the corn, doing limited or no damage.

All this brings out a couple of important lessons. First, when sending a sample to the Diagnostic Services or calling a specialist on campus, it is helpful to note specifically that the sample came from a field edge, and if so, what other vegetation was nearby. That may give us a clue to the identification, even if we don't have the sample in-hand yet. Second, remember the importance of your scouting pattern when monitoring a field. Monitoring edges alerts you to new or unusual infestations in a field, and helps you make a decision to spot-treat areas recently colonized by pests. But the edge is not necessarily representative of the population across the whole field, so the general rule of thumb is to sample in at least five different areas of a field.

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