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Corn Replant Decision-Making

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Crappy stands of corn (aka less than desirable) occur somewhere in Indiana every year. The recent spate of cool, rainy days does not bode well for some corn fields planted during the days immediately preceding the onset of the rainy weather. Stands of corn in river bottoms may be destroyed outright by flood waters. Poorly drained soils where ponding has occurred for four or more days are vulnerable to seedling death. Eventual drying of saturated soils often leads to severe crusting that can restrict corn emergence and result in lower than desirable plant populations. Cool, wet soils are also conducive for seedling infection by certain soil-borne diseases.

Unacceptable stand establishment in some of these fields may eventually require growers to make decisions about replanting. Deciding to replant a crappy stand of corn should be based on a number of criteria, but unfortunately the major influencing factor is often the emotion associated with looking out the kitchen window at the damaged field every morning or driving by the field every afternoon taking the kids to baseball practice.

Make a wise decision about the merits of replanting a damaged field of corn requires more than emotions. In fact, I would rather that emotions be taken out of the equation entirely. Toward that end, I developed a replant decision-making worksheet that assists growers and farm managers in making that important replant decision. The worksheet allows you to determine the damaged field's current yield potential (if left untouched), its replant yield potential, and the dollar returns (if any) from replanting the field.

The worksheet is included in a larger overall publication on corn replanting titled "Estimating Yield and Dollar Returns From Corn Replanting". This Purdue Extension publication (AY-264-W) is available as a PDF-formatted download from the Web at

http://www.agry.purdue.edu/ext/pubs/AY-264-W.pdf.

If you do not have access to the Web, stop by your local Purdue Extension county office and ask the folks there to download and print it for you.

Some of the information that is required to complete the worksheet originates from cropping records and history, including the original seeding rate and planting date for the damaged field. Some of the required worksheet inputs are frankly estimates, including what the field would have yielded under "normal" conditions if it had not been damaged and what market price you expect to receive for the grain after harvest. The expected replanting date and replanting costs are also required for the worksheet calculations.

- Recognize that the expected replanting date this year may be quite late given the amount of rainfall these fields have received in recent days, the uncertain rainy forecast for the remainder of this week, and the uncertain time required for these fields to dry enough to allow replanting.
- Also, recognize that there is no guarantee of success for late-planted replanting situations. Late-planted fields will pollinate during late summer when high temperatures and moisture deficits are more common. Late-planted fields are often more attractive to late flights of European corn borer, so replant hybrids with Bt-Corn borer traits would be worth considering. Late-planted fields can also be more susceptible to fall frost damage if the corn does not reach physiological maturity prior to the occurrence of damaging temperatures, so choose replant hybrid maturities wisely (Nielsen & Thomison, 2002).

Finally, some information is required from the damaged field itself. You will need an estimate of the surviving plant population that is representative of the damaged areas of the field. Depending on the nature of the crappy stand, you may also need estimates of after-damage stand uniformity and plant defoliation.

I will be the first to admit that it takes some time and patience to complete the replant worksheet; both of which are usually in short supply at the time the decision is being made. Recognize, though, that much of the replanting that occurs every year throughout the state is based primarily on emotion and not on estimates of economic returns. Taking the time to work through the steps of my replanting worksheet will help clarify the economic returns (or losses) to replanting and reduce the influence of emotions in this important crop management decision.

Related References

Nielsen, Bob. 2002 (rev). Estimating Yield and Dollar Returns From Corn Replanting. Purdue Univ. Cooperative Extension Service publication AY-264-W. Online at http://www.agry.purdue.edu/ext/pubs/AY-264-W.pdf. [URL verified 5/15/06].

Nielsen, Bob and Peter Thomison. 2002. Delayed Planting & Hybrid Maturity Decisions. Purdue Univ. Cooperative Extension Service publication AY-312-W. Online at http://www.agry.purdue.edu/ext/pubs/AY-312-W.pdf. [URL verified 5/15/06].

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Don't forget, this and other timely information about corn can be viewed at the Chat 'n Chew Café on the Web at http://www.kingcorn.org/cafe. For other information about corn, take a look at the Corn Growers' Guidebook on the Web at http://www.kingcorn.org.