5-10-2004

Early season scouting

Jason De Bruin
Iowa State University

Palle Pedersen
Iowa State University, palle@iastate.edu

Early season scouting

Abstract
Over the last couple of years, we have seen how important it is to scout the fields in a timely manner, and this means that scouting begins with crop emergence, especially for soybean. Variety selection and planting date are the two most important variables farmers need to consider when planting soybean, but if we don't scout the fields and monitor crop performance throughout the growing season, that advantage can be lost. Just think about soybean aphids in 2003.

Keywords
Agronomy

Disciplines
Agricultural Science | Agriculture | Plant Pathology

Early season scouting

Over the last couple of years, we have seen how important it is to scout the fields in a timely manner, and this means that scouting begins with crop emergence, especially for soybean. Variety selection and planting date are the two most important variables farmers need to consider when planting soybean, but if we don't scout the fields and monitor crop performance throughout the growing season, that advantage can be lost. Just think about soybean aphids in 2003.

Scouting crop fields throughout the season is essential to maximize yield and profitability. Early season scouting (following emergence) should be a high priority as this is when we can still "fix" problems. Scouting is part of Integrated Pest Management. This is the first of four articles where we highlight points that may help when scouting the fields. The other three articles will be on scouting in mid-season, late-season, and post-season.

Here are our top 10 points, with an overview of finer points for early season scouting:

1. **Scout your fields**. The front of the field may look great from the road but your perceptions can change as you enter the field and take a closer look. Yes, you will have a lot of fields to scout, but each one is important and needs to be evaluated correctly. You don't have to walk the whole field, but cover enough to scout accurately.
2. **Keep records for future reference, use the best sampling methods, and be aware that these methods are often insect/pathogen/weed/host specific**. Be prepared for field visits, including developing field histories.
3. **Know sources where you can find information for accurate diagnoses** -- no one knows everything!
4. **Count the plant stands**. Although you will have a tendency to look at weeds first, crops are more important. Start with crop stand counts in a row length equal to 1000th of an acre and count the plants to determine population. It is highly recommended to count more than one row.
5. **Evaluate if replanting is necessary**. Frost, hail storms, poor seed quality, soil crusting, depth of planting, and deer or bird "feeding" may all reduce stands. Research from Iowa State University show that a final stand of at least 73,000 plants per acre consistently yield more than 90 percent of optimum. For more information see Iowa State University Extension Publication PM 1851, Soybean Replant Decisions [1].
6. **Survey how individual plants look and determine their growth stage visually**. Early in the season, cold soil temperatures can cause plant yellowing and reduction in plant growth rate. This will probably change as plant growth quickens and soil temperatures increase. Crop growth stage is important for determining the appropriate herbicide program and for assessing the need to replant or apply insecticides. Nutrient

deficiencies may also show up and be "fixed".

7. **Identify weed species if possible, but always see if both broadleaf and grass species are present**. Determine the range of plant height for weed species, which will influence the herbicide program. For more information see http://www.weeds.iastate.edu
8. **Find out if there is evidence of an insect problem such as cut corn plants (cutworm) or damaged cotyledons (bean leaf beetle)**. In soybean, we need to be aware of bean leaf beetles during the early vegetative stages. There have been problems in many soybean fields over the last years. However, bean leaf beetles can easily be managed [2].
9. **Find out if the field has a history of seedling diseases**. Soybean seedling diseases such as Pythium, Fusarium, Phytophthora, and Rhizoctonia are common in Iowa. If the field has a history of seedling diseases and is planted under wet conditions, several fungicide seed treatments can be used to protect the seed. In addition, Phytophthora root rot can be managed [3] by variety selection.

Last, if you still don't know what to do and have identified a problem, you may mail a sample to the Iowa State University Plant Disease Clinic [4]

Items needed for field scouting

Clipboard and pen	Location, date, and other notes are essential
Spade or hand trowel	Dig plants if there is a problem
Ziplock bags	Collect plants if you can't identify the problem
Measuring tape	Determine stand or yard stickcounts
Charts for growth	Iowa State publications [5] for staging both corn and soybean
Digital camera	A photo may help you solve problems in the future

This article originally appeared on pages 33-34 of the IC-492 (7) -- May 10, 2004 issue.

Source URL:
http://www.ipm.iastate.edu/ipm/icm//ipm/icm/2004/5-10-2004/scouting.html

Links:
[1] http://www.extension.iastate.edu/Publications/PM1851.pdf
[2] http://www.ipm.iastate.edu/ipm/icm/2003/4-28-2003/blbmanagement.html
[3] http://www.ipm.iastate.edu/ipm/icm/2002/5-20-2002/idsoydis.html
[4] http://www.exnet.iastate.edu/Pages/plantpath/pdcintro.html
[5] http://www.extension.iastate.edu/pubs/cr.htm

IOWA STATE UNIVERSITY
University Extension