

THE LEADING EDGE

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A PUBLICATION DEDICATED TO MAXIMIZING YIELD POTENTIAL

Get Up Close and Personal

A close look at your crop after emergence can help identify yield-robbing problems

The key to high yields is an effective combination of weed, insect, and disease management as well as tillage and equipment management. Getting up close and personal with your crop shortly after it emerges, and performing periodic checks throughout the growing season, can provide invaluable information to address developing problems. Scouting reports should also be the cornerstone of the crop management plan for the next growing season.



The performance of the planter is one of the most important factors in crop yield. While scouting the existing crop throughout the growing season is very important, scouting the planter performance during planting could be the most important factor for strong yields.

Scouting for weeds, insects, and disease

Crop scouting for weeds, insects, and diseases is a long-accepted best practice that should not be done lightly. The following information provides some basic guidelines for pest and disease crop scouting, but growers should learn the specific threats that their region and soil types are most vulnerable to. It is also important to know your limits. An analysis by a professional crop scout may quickly reap a return on investment.

Key 1: Be prepared to monitor the crop on a regular basis. Diseases and insects may seem to suddenly appear, but problems often start in small numbers. Identifying the problem early may mean spot treatment will be successful.

Key 2: Know the economic injury level (break-even point based on economic factors) for treatment and also the economic threshold (infestation level at which control becomes beneficial). Be able to apply these to individual situations.

Key 3: Know the history of your fields and consider the impact of details such as herbicides applied the previous year.

Key 4: Know the characteristics of a healthy crop, then look for signs of crop damage such as thinning, stunting, early dying, discoloration or damaged stems or leaves. Each disease and insect will cause a specific damage to a crop, so it is also important to be familiar with the symptoms of a wide variety of infestations and diseases. Understand the pests and their lifecycles.

Key 5: Analyze the weather, crop stage, weed development, and pest biology so scouting occurs at the right time.

Key 6: Walk across the field in V- or W-pattern and collect random sample. Concentrate efforts in areas where the pest, disease, or weed problem is most likely to occur. General guidelines hold that about 50 acres should be scouted at a time. Divide those acres into different zones if they have been under different management practices.

Key 7: When scouting for pests, be aware that different sampling methods are appropriate for different pests.

Key 8: Record keeping is perhaps the most important step in crop scouting. Records should include: the field location; how the samples were collected; record of data collected at each site; plant counts; row spacing; stage of crop development; and crop damage, if it is present. Remember, use clear language so you can benefit from the report year after year.

Assessing crops for poor-equipment performance

Like pests and weeds, poor performance of the planter and its attachments could have a negative impact. Research indicates that corn yields could increase as much as 15 bushels per acre simply by improving performance, so observing the crop as it emerges and evaluating problem spots is an important management task. Check rows for excessive and large residue in seed trenches. When properly used, residue managers eliminate planter bounce and hairpinning, two factors that can contribute to problems with seed placement and seed-to-soil contact.

While scouting, check your crop stand. Density of stand is one indicator of crop health. [Click here for an estimating tool.](#)

Coulter blade selection has an enormous impact on emergence and root development. The proper coulter blade will ensure ideal seed-to-soil contact and fracture soil crusts directly around the seedling for excellent closure. Through coulter tillage techniques, the capacity of the soil to hold moisture is improved, aiding germination and uniform emergence.

Seeds planted too deep or shallow due to poor planter adjustments will also



During planting and crop emergence is a good time to evaluate the performance of each are of the planter.

contribute to emergence problems. If scouting reveals seeds that have swelled but not sprouted, they may have been planted too shallow. Nodal roots developing above ground also point to shallow planting. These roots are exposed to more environmental conditions and have a higher probability of encountering disease and nutrient-deficiency.

Seeds that emerge and are leafing out underground could be the result of too deep a placement. No emergence could also be the result if seeds are planted too deep. As a rule of thumb, corn should be planted about 2 inches deep. This depth will need to be adjusted depending on soil moisture.

If scouting reveals evidence of poor seed-trench closing, poorly adjusted or poorly selected closing wheels could be to blame. If the seed trench is not closed properly, all previous efforts to improve yield are jeopardized. There are a wide variety of closing products currently available on the market to prevent such misfortune. Spike closing wheels and drag chains are two popular choices.

Effective closing wheels gently firm the soil around the seed, leaving loose soil above the seed for ideal seed-to-soil contact, eliminating soil crusting and air pockets, and providing for fast even emergence. Improperly adjusted closing wheels could cause sidewall compaction and uneven stands. Adjust the spring pressure on the closing wheels according to soil type and moisture. If scouting reveals evidence of compaction, spike closing wheels are again an effective option to combat that problem. Smooth wheels set with too much downforce will pack the soil over the seed. In no-till and min-till situations, the soil of the sidewall must be loosened. Spike closing wheels



Spike closing wheels have proven to be invaluable in some planting conditions, creating very good seed-to-soil contact in less-than-ideal conditions.

fracture the soil, but even with the right closing wheel, downforce should be adjusted to account for soil type and condition.

Scouting is always a good investment

Thorough and well-executed crop scouting has a number of benefits: improved weed, insect, and disease control, an understanding of opportunities for improved equipment performance, and the development of accurate records of each fields' history. When these benefits come together with good management, improved yields are the result.

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