



AGRONOMY UPDATE



Seeds for Success

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Agronomy Update

is a monthly publication provided to producers free of charge. AgVenture, Inc. and its nationwide network of Regional Seed Companies are dedicated to providing producers exceptional seed products – genetics and technologies, professional service, and local knowledge of agronomic conditions impacting producer profitability.

EVERY KERNEL COUNTS

AgVenture encourages growers to set the combine to manufacturer-recommended settings as a starting point. But you must adjust to the condition of the crop. Stop and check your results frequently. Corn lost at the corn head isn't monitored by the sensors on the back of the combine. Readjust settings where needed to maximize your crop's quality and quantity harvested.

Remember, over half of corn harvest losses occur at the corn head. Two kernels dropped per square foot or a single three-quarter pound ear in 436 square feet (0.01 acre) equals one bushel per acre lost.

Dropped kernels are a likely host for Sudden death syndrome (SDS) pathogens. Dropped kernels may contribute to infecting next year's soybean fields with SDS or may increase the disease's presence.

KEEP MONITORING THE CROP

Late season factors can still diminish corn yield prospects through September. Where Gray leaf spot and Northern Corn leaf blight developed late in the season, plants may be remobilizing stored carbohydrates from the lower stalk to compensate for damaged leaf tissue. But that shift in nutrients can result in weakened stalks. It may also predispose the ear to premature black layer formation which can result in lightweight grain, and lower grain yield per acre. Consider prioritizing affected fields for early harvest to mitigate the risks of lodging and the associated challenges of grain quality.

Drought stress and cool temperatures can also compromise optimal grain fill. That can result in reduced starch deposition in kernels. An early frost or freeze can especially challenge corn if it occurs before black layer.


SCOUT FOR EAR ROTS Every year, a variety of diseases, fungi, and molds are present on ears as plants near harvest. Correctly identifying what culprits are present may influence your harvest prioritization, grain management and handling, or even next year's cropping plan.


To scout for ear molds, go to five distinct spots in the field and fully expose 20 ears from each location for a total of 100 ears per field. Examine each ear and identify any abnormalities. Ear rots can be managed to reduce incidence and severity. Fields with a history of ear rot disease should be planted with hybrids that are less susceptible to those diseases. Fields with insect, mechanical, or hail damage may have a greater risk of mycotoxin development.

Mycotoxins can become a risk to the harvested crop's quality if they accumulate beyond accepted levels. But not all ear rots produce mycotoxins. Here are three examples:

CLADOSPORIUM EAR ROT

 Gray to black or greenish-black kernels, sometimes a powdery mold growth or black streaks on kernels. Common fungal disease on ears damaged by frost or mechanical injury. Common where weather is wet during ear maturation.

NIGROSPORA EAR ROT

 Dark gray or black discoloration from fungal mycelium and spores, mostly at the base of kernels. Infection may first be noticed when cobs shred from the butt end during mechanical harvest.

TRICHODERMA EAR ROT

 Dark green fungal growth on and between husks and kernels, sometimes involving the entire ear. The fungal disease may result from injury to the developing ear, including damage from bird or insect feeding or other mechanical injury.

CORN DRYDOWN RATES Once the corn crop reaches maturity at black layer, kernel drying occurs solely due to evaporative moisture loss. Rapid moisture losses can occur in hot, dry conditions. Time your harvest to maximize harvested grain.

Typical Moisture Loss Per Day Under Favorable Conditions	
Harvest Season Stage	Points of Moisture Lost Per Day
Sept. 15 – Sept. 25	¾ to 1
Sept. 26 – Oct 5	½ to ¾
Oct. 6- Oct. 15	¼ to ½
Oct. 16- Oct. 31	0 to 1/3

CHARCOAL ROT APPEARING

Drought conditions are favorable for this fungal disease. Symptoms include early ripening, shredding and breakage at the corn stalk's crown. The inside of split stalks shows a charred appearance. Lodging results from weakened stalks. Prioritize these fields for harvest.

MAXIMIZE SOYBEAN HARVEST One move can help reduce risk and improve income as you harvest soybeans. Start harvesting before moisture levels reach the 13 percent level. In-field experience from AgVenture is supported by research from Michigan State University shows that harvesting soybean fields at ~15 percent can reduce risks posed by harvest losses and soil compaction and increases income compared to harvesting over-dry beans. By waiting to start until fields reach 13 percent moisture, subsequent fields are often too dry. While it's ideal to avoid drying charges and moisture discounts, the proof is in the table (source: Michigan State University).

Net value for a bushel of soybeans delivered at various moisture levels				
Moisture	Wet Weight	Dry Weight (13% moisture)	Moisture Discount/ Drying Charge	Net Value
(%)	(lbs./bu)	(lbs./bu)	(\$/bu)	(\$/bu)
18	63.66	58.06	0.25	8.85
17	62.89	58.36	0.2	8.94
16	62.14	58.66	0.15	9.08
15	61.41	58.95	0.1	9.14
14	60.70	59.24	0.05	9.23
13	60.00	60.00	0	9.40
12	59.32	59.32	0	9.29
11	58.65	58.65	0	9.20
10	58.00	58.00	0	9.09
9	57.36	57.36	0	8.99

* A shrink factor of 1.6 percent per wet bushel increased by 0.8 percent for each 0.5 percent moisture above 13.1 percent was used to calculate dry weight
 ** Actual moisture loss was used to calculate dry weights when moisture was below 13 percent
 *** Market price is \$9.40 per bushel
 **** Moisture discount/drying charge of \$0.05 for each 1 percent above 13 percent was used

ANTHRACNOSE INFECTION IN SOYBEANS Pegged as one of the ten most yield-robbing diseases in the South, anthracnose develops well in warm, humid and wet environments. Yield reductions can be severe, especially where pods are infected. Infected pods may produce small seed or no seed at all. The fungal disease may also cause plant lodging and thus, additional harvest losses. Black fungal fruiting bodies develop on infected tissue, generally when the soybean plants are near maturity. Severe symptoms may include leaf rolling, premature defoliation, and stunted plants. Pods may be shriveled and contain less seed, moldy seed, or no seed. In some cases, pods can be diseased, and the seed may be infected but without symptoms in the seed. The disease survives on residue of plants and seeds to infect future crops.

LATE SEASON SOYBEAN CHALLENGERS Risks posed by pests and weather conditions are still a concern for late-planted soybeans. At late reproductive stages of R6 or later, insects such as stink bugs may not reduce yields, but do threaten soybean quality.

Soybean looper populations can spike rapidly and cause heavy defoliation within just a few days. Defoliation thresholds vary from 20-30 percent depending on the stage of crop development. Typically, 20 percent or more defoliation is reached when populations of 75 larvae per 100 sweeps. Loopers can be difficult to control as they have developed resistance to several chemistries. Specific recommendations for treatment vary by region. Be sure to check insecticide recommendations for your area.

Phomopsis seed decay prefers warm and wet weather during pod fill and maturity. Stresses such as nutrient deficiencies or virus infections can also enhance its prevalence. Prior to harvest, scout to determine infection levels assessing at least 5 locations in a field, and opening pods to determine if Phomopsis seed decay is present. Prioritize harvest of infected fields for harvest. Seed infected with the Phomopsis fungus will continue to rot in the pod until harvested.

AgVenture, Inc.

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