

# FORAGER



*Agronomics with livestock in mind!*



## In the field – Understanding corn characteristics

Corn is out of the field, well, most of it. Now is the time to select corn hybrids for next year. It seems the same scenarios are reoccurring this year, what worked well in a given area is what we order for next year. It is not a bad concept, except in the last five years no two consecutive years have been the same. Understanding corn growth characteristics enables producers to select varieties that will best fit their environment in an average year.

Ideally, we would recommend a hybrid that has the highest rating for every characteristic. However, in biological systems this is rarely an option. In most environments there are multiple factors limiting growth that depend on the climate, soils, and topography. Selecting varieties with qualities to combat these growth limiting factors is critical to maximizing yield and quality. However for silage, hybrids with high digestibility must also be utilized to maintain quality.



Typically a given field or farm has a small number of common limiting factors. While these factors vary from year to year, the one most likely to be limiting should be the focus. Although environments vary, a few factors are common concerns.

Drought stress is a regular problem in many areas. It can be associated with weather patterns and lack of rainfall, or with a soil's inability to hold water. Lighter soils like sand, gravel, or shale often drain very well and thus do not hold water, resulting in drought stress. In fields where drought stress is a common concern, plant hybrids with strong root growth and a high rating for drought tolerance. Avoid planting drought prone fields at high population as it may result in smaller or fewer ears. Using practices like no-tilling and good weed control help to preserve soil moisture in these fields.

Cold wet springs are common in some parts of the northeast and upper mid-west. The effects of cold, wet weather are most often found in low lying, poorly drained fields. Often, slow early growth, purpling corn, and planting skips show up in these conditions. Selecting corn hybrids with strong emergence and early vigor will help in these fields. Heavy, poorly drained soils do not warm up as fast as light, well-drained soils. Tillage helps aerate and warm the soil in these

fields. Using an adequate rate of phosphorus in starter fertilizer will help in times of slow early growth and also minimize purpling.

Low fertility soils are prevalent on many dairies. Low fertility limits yield and quality. Using cover crops and maintaining a stringent crop rotation will help improve soil health. Utilizing manure and a fertilizer to maintain soil nutrient levels, along with lime to maintain pH, will help improve fertility levels. Planting work-horse hybrids with good plant health, at low to moderate populations, will help maximize yield and quality on these fields.

Bt corn hybrids are available for fields with insect pressure. Currently there are two types of Bt traits. The first Bt trait is for control of corn borer, while the second is for control of corn rootworm. There are multiple events of corn borer Bt offered from different companies. One of these events, Herculex™ I *Insect Protection*, not only provides control of first and second generation European corn borer and Southwestern corn borer, but also combats secondary pests like black cutworm, fall armyworm, and offers intermediate suppression of corn earworm. YieldGard® Rootworm is currently the only Bt event registered for control of western, northern, and Mexican corn rootworm.

Corn rootworm is often a problem in fields of continuous corn. The most effective management practice is crop rotation. If crop rotation is not possible, utilizing corn hybrids with the YieldGard® Rootworm (rootworm Bt) trait will provide the best control. Other options include in-furrow insecticide, and treatments, like Poncho® 1250 to provide some control, in fields with low-level infestations of rootworm.

Leaf diseases cause early death in some areas. Diseased corn dries dry down very quickly, resulting in extremely dry, poor quality silage. Selecting hybrids with good disease tolerance or resistance will help maintain plant health through the season and expand the harvest window in these environments.

Matching highly digestible silage hybrids with specific characteristics to fit a given environment is the most productive way to maximize forage yield and quality. Through this selection we can reduce some of the risk associated with growing silage.